

JP1 Version 11

## **JP1/Service Level Management Description**

3021-3-A32-10(E)

### Notices

#### Relevant program products

#### JP1/Service Level Management - Manager (for Windows)

P-292C-FABL JP1/Service Level Management - Manager version 11-01 (for Windows Server 2008 R2, Windows Server 2012, Windows Server 2016)

#### JP1/Service Level Management - User Response (for Windows)

P-292C-FBBL JP1/Service Level Management - User Response version 11-00 (for Windows Server 2008 R2, Windows Server 2012, Windows Server 2016)

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Portions of this software were developed at the National Center for Supercomputing Applications (NCSA) at the University of Illinois at Urbana-Champaign.

Regular expression support is provided by the PCRE library package, which is open source software, written by Philip Hazel, and copyright by the University of Cambridge, England. The original software is available from ftp:// ftp.csx.cam.ac.uk/pub/software/programming/pcre/.

This product includes software developed by Andy Clark.

This product includes software developed by Ben Laurie for use in the Apache-SSL HTTP server project.

This product includes software developed by Daisuke Okajima and Kohsuke Kawaguchi (http://relaxngcc.sf.net/).

This product includes software developed by IAIK of Graz University of Technology.

This product includes software developed by Ralf S. Engelschall <rse@engelschall.com> for use in the mod\_ssl project (http://www.modssl.org/).

This product includes software developed by the Apache Software Foundation (http://www.apache.org/). This product includes software developed by the Java Apache Project for use in the Apache JServ servlet engine project (http://java.apache.org/).

This product includes software developed by the University of California, Berkeley and its contributors.

This software contains code derived from the RSA Data Security Inc. MD5 Message-Digest Algorithm, including various modifications by Spyglass Inc., Carnegie Mellon University, and Bell Communications Research, Inc (Bellcore).



JP1/Service Level Management - Manager and JP1/Service Level Management - User Response includes RSA<sup>(R)</sup> BSAFE<sup>TM</sup> Cryptographic software of EMC Corporation.



#### Microsoft product screen shots

Microsoft product screen shots reprinted with permission from Microsoft Corporation.

#### Microsoft product name abbreviations

This manual uses the following abbreviations for Microsoft product names.

Abbreviation		Full name or meaning
Windows	Windows Server 2008 R2	Microsoft Windows Server 2008 R2 Datacenter
		Microsoft Windows Server 2008 R2 Enterprise
		Microsoft Windows Server 2008 R2 Standard
	Windows Server 2012	Microsoft Windows Server 2012 Datacenter
		Microsoft Windows Server 2012 Standard
		Microsoft Windows Server 2012 R2 Datacenter
		Microsoft Windows Server 2012 R2 Standard
	Windows Server 2016	Microsoft Windows Server 2016 Datacenter

Abbreviation		Full name or meaning
Windows	Windows Server 2016	Microsoft Windows Server 2016 Standard

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## Summary of amendments

# The following table lists changes in this manual (3021-3-A32-10(E)) and product changes related to this manual.

Changes	Location
Internet Explorer versions earlier than 11 are no longer supported.	-
<ul> <li>Following the removal of Flash Player as a prerequisite product, the following changes were made:</li> <li>All screenshots in this manual were updated. In addition, the descriptions of some windows were changed.</li> <li>The procedures for using some windows were changed.</li> <li>Notes regarding the display of daylight saving time were deleted.</li> <li>The procedure to be performed when a user cannot log in was changed.</li> </ul>	Throughout the manual, 3.2.5(2), 4.5.5(2), 7.1.2(3), 10.3.6(2), 10.4.4(2), 10.4.5(2), 10.5.4(2), 10.6.5(2), 10.6.6(2)
The procedure for handling insufficient database capacity was changed.	7.1.5(2)
The -r option was added for the database cleanup command (jslmmgrdbcleanup). This option deletes RD areas to which no monitored service is assigned.	jslmmgrdbcleanup in Chapter 9

In addition to the above changes, minor editorial corrections were made.

### Preface

This manual describes the functions and operation of *JP1/Service Level Management - Manager* and *JP1/Service Level Management - User Response*.

JP1/Service Level Management - Manager and JP1/Service Level Management - User Response are used to monitor the status of services in order to maintain a desired level of service.

In this manual, the combination of JP1/Service Level Management - Manager and JP1/Service Level Management - User Response is abbreviated as *SLM*.

#### Intended readers

This manual is intended for members of a monitoring staff who use SLM to monitor the status of service levels, as well as for system operators (system administrators) who deploy and troubleshoot SLM.

Readers of this manual must have:

Monitoring staff:

A basic knowledge of the operating system

System operators (system administrators):

A basic knowledge of the applicable operating system

A basic knowledge of networking

A basic knowledge of JP1/Base

#### Conventions: Fonts and symbols

The following table explains the text formatting conventions used in this manual:

Text formatting	Convention
Bold	<ul> <li>Bold characters indicate text in a window, other than the window title. Such text includes menus, menu options, buttons, radio box options, or explanatory labels. For example:</li> <li>From the File menu, choose Open.</li> <li>Click the Cancel button.</li> <li>In the Enter name entry box, type your name.</li> </ul>
Italic	<ul> <li>Italic characters indicate a placeholder for some actual text to be provided by the user or system. For example:</li> <li>Write the command as follows: copy source-file target-file</li> <li>The following message appears: A file was not found. (file = file-name)</li> <li>Italic characters are also used for emphasis. For example:</li> <li>Do not delete the configuration file.</li> </ul>
Monospace	<ul> <li>Monospace characters indicate text that the user enters without change, or text (such as messages) output by the system. For example:</li> <li>At the prompt, enter dir.</li> <li>Use the send command to send mail.</li> <li>The following message is displayed:</li> </ul>

Text formatting	Convention
Monospace	The password is incorrect.

The following table explains the symbols used in this manual:

Symbol	Convention
1	In syntax explanations, a vertical bar separates multiple items, and has the meaning of OR. For example:
	A   B   C means A, or B, or C.
{ }	In syntax explanations, curly brackets indicate that only one of the enclosed items is to be selected. For example:
	$\{A   B   C\}$ means only one of A, or B, or C.
[]	In syntax explanations, square brackets indicate that the enclosed item or items are optional. For example:
	[A] means that you can specify A or nothing.
	[B C] means that you can specify B, or C, or nothing.
	In coding, an ellipsis () indicates that one or more lines of coding have been omitted.
	In syntax explanations, an ellipsis indicates that the immediately preceding item can be repeated as many times as necessary. For example:
	A, B, B, means that, after you specify A, B, you can specify B as many times as necessary.
<>	Angle brackets indicate items that might be displayed more than once. For example:
	monitoring-item-name < $\Delta$ monitoring-item-name >
	This means that following <i>monitoring-item-name</i> , a single-byte space ( $\Delta$ ) and <i>monitoring-item-name</i> might be displayed repeatedly.

### Conventions: SLM installation folder

This manual uses the following conventions to indicate the SLM product installation folder:

Product name	Convention used to indicate the installation folder	Default installation folder <sup>#</sup>
IT Service Level Management - Manager	SLM-Manager-installation-folder	<i>system-drive</i> :\Program Files\HITACHI \JP1ITSLM
IT Service Level Management - User Response	SLM-UR-installation-folder	

#

The default installation folder is the folder into which the SLM products are installed when no other folder is specified. Note also that the *system-drive*: \Program Files portion is determined by a value set in an OS environment variable at the time of installation, so it might be different in your environment.

### ■ Conventions: KB, MB, GB, TB, PB, and EB

This manual uses the following conventions:

- 1 KB (kilobyte) is 1,024 bytes.
- 1 MB (megabyte) is 1,024<sup>2</sup> bytes.

- 1 GB (gigabyte) is 1,024<sup>3</sup> bytes.
- 1 TB (terabyte) is 1,024<sup>4</sup> bytes.
- 1 PB (petabyte) is 1,024<sup>5</sup> bytes.
- 1 EB (exabyte) is 1,024<sup>6</sup> bytes.

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## About SLM

SLM is a product that provides support for maintaining service levels to certain standards. This chapter provides an overview of SLM and explains the system configuration, the flow of monitoring jobs, and the tasks that can be achieved by using SLM. It also explains that when SLM is linked with Performance Management, it can also be used for monitoring the status of hosts and middleware. The chapter also discusses the relationship between the organization of this manual and the expected tasks.

## 1.1 Support for maintaining service levels

In recent years, many business systems have been created to provide services to users.

For example, suppose that a company outsources a business system to a data center so that users can access the business system while it is running on the data center's servers. In such a case, the business system can be regarded as a service being provided to a customer.

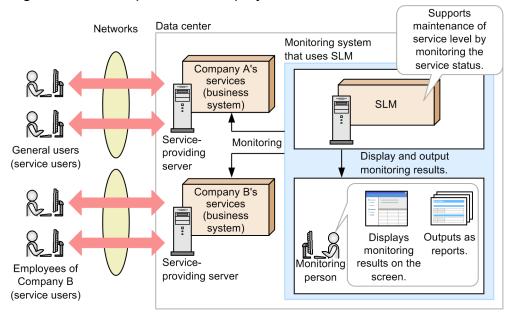
If a company runs and manages an in-house business system and the users of the business system are the company's own employees, the business system provided from the servers can still be regarded as a service for users (who, in this case, are employees).

In both cases, the business system (the service) is running normally from the perspective of the service's users. A service provider must maintain the quality (*service level*) of the service it provides, and it must be able to provide the users with hassle-free service. To maintain the expected service level, the status of how the service is being provided must be monitored.

In a business context, there might be a contract between a service's outsourcing company and an outsourced contractor to maintain a certain service level. In such a case, it is crucial that the service status be monitored and the service level be maintained as stipulated in the contract.

SLM meets these demands by providing the capability to monitor service status and maintain a required service level.

The following figure provides an example of SLM deployed at a data center to monitor the service status and maintain the service level.



#### Figure 1-1: Example of SLM deployed at a data center to monitor the service status

In this example, Companies A and B (service providers) outsource their business systems to a data center. Company A provides its service to general users (customers), while Company B provides its service to its own employees. The general users who use Company A's service and the employees of Company B are both service users.

By using SLM, you can monitor the statuses of the services of Companies A and B from their users' perspective. The monitoring results can be displayed on a monitoring person's computer, or output as reports. Use these monitoring results to maintain the level of service provided by Company A to the general users and the level of service Company B provides to its employees.

## 1.1.1 Support for providing stable service

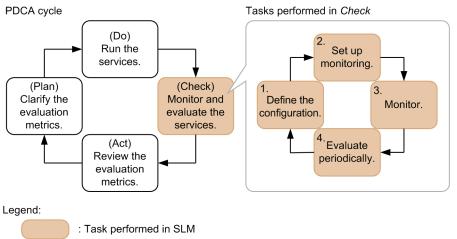
A service provider must be able to maintain the quality of the service and provide stable services to its users.

In other words, a service provider must set evaluation metrics (the *service level objectives* (SLOs)) to maintain the service level, and it must manage and run the service systematically.

To manage and run services systematically, it is helpful to apply a PDCA cycle. *PDCA* stands for *Plan-Do-Check-Act*, and SLM supports the tasks that correspond to *C* (*Check*) in the PDCA cycle.

The following figure shows the management and operation of services in a PDCA cycle when SLM is used.

Figure 1-2: Management and operation of services in a PDCA cycle using SLM



Of the *Check* tasks, SLM supports *service monitoring and evaluation*. Service monitoring and evaluation by SLM involves performing the following tasks cyclically:

1. Define the configuration.

Define the services to be monitored.

SLM achieves the independence of each customer's business systems by using *service groups* to group monitored services by customer (such as a company) and setting access permissions required for monitoring each group. Therefore, before monitoring can be started, individual services must be registered into SLM and then their service groups must be defined.

SLM can help you register services by automatically detecting the URIs of the Web pages of the monitored services.

2. Set up monitoring.

Configure how to monitor the monitored services.

SLM specifies threshold values that will be used as evaluation metrics (SLOs) for maintaining the service level for each monitored service. Threshold values are provided for three items that are monitored: average response time, throughput, and error rate. Based on the specified threshold values, SLM can monitor for over-threshold values as well as possible future over-threshold values. The data obtained as a result of monitoring average response time, throughput, and error rate is referred to as the *service performance*. In addition to threshold values, you can also configure SLM to predict abnormalities in service performance stemming from unusual service statuses.

3. Monitor.

Monitor actual accesses to the services according to the monitoring settings.

SLM totals and analyzes actual accesses from service users and monitors for over-threshold values and possible future over-threshold values specified during monitoring setup, as well as for unusual service statuses (warning signs that might lead to abnormalities in service performance).

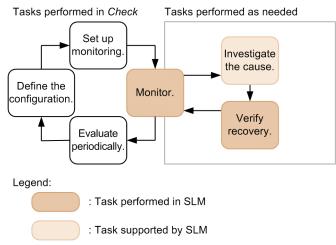
4. Evaluate periodically.

Output reports of accumulated daily service statuses as monitoring results.

Such reporting assists you in periodic evaluations to determine whether the evaluation metrics (SLOs) for maintaining the service level are being satisfied.

The monitoring task in 3 above requires some tasks that depend on the monitoring results. The following figure shows the tasks that must be performed depending on the monitoring task.

#### Figure 1-3: Tasks that must be performed depending on the monitoring task



Monitoring, investigating the cause, and verifying recovery are performed in the cycle. Of the tasks that are performed as needed, SLM can support investigating the cause and verifying recovery.

#### Investigating the cause

If an abnormality or a warning sign that might lead to an abnormality is detected in the performance of a monitored service, its cause must be investigated promptly.

Because SLM can display ongoing service statuses (monitoring results) as graphs on the screen, the timing of an event that is the cause of a problem, or that might lead to a problem, can be identified more easily.

#### Verifying recovery

Because SLM monitors service statues, you can take an appropriate corrective action in response to a problem or a warning sign of an abnormality and then immediately check the current service status. This enables you to promptly determine whether services can be provided normally.

Thus, SLM plays an important role in the management and operation of services in the PDCA cycle and supports stable service operations.

### 1.1.2 Monitoring service status

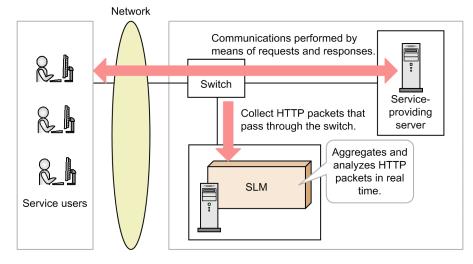
If a service that has many users or that is critical to some users' business is interrupted, those users are greatly affected. SLM can achieve monitoring based on threshold values that are used as evaluation metrics (SLOs). SLM can also predict an abnormality in service performance by monitoring for unusual service status.

- Monitoring based on threshold values
  - You can evaluate service status based on specific metrics of the SLOs. You can also detect a service that might exceed an SLO in the future by analyzing trends in the service's status in real time.
- Monitoring for an unusual service status

You can detect at an early stage a warning sign of a possible abnormality that feels unusual to service users, before it develops into a real service performance error. By handling an abnormality at the stage of the early warning sign, you can provide stable services and increase service users' sense of satisfaction.

The following figure shows how SLM performs monitoring.

Figure 1-4: Mechanism of monitoring by SLM



SLM collects, aggregates, and analyzes in real time the HTTP packets that constitute the requests and responses sent between the service users and the service providing server. SLM monitors the current service status in this manner.

In services provided by business systems, a single process consists of one or more sets of requests and responses. For example, in a mail service, each process, such as a login process or display of a list of emails, consists of multiple requests and responses. To monitor the status of each service process, SLM identifies the requests and responses that make up the process to be monitored among all requests and responses of the monitored service and monitors those requests and responses as a set.

When each service process is monitored, a set of requests and responses is identified based on the queries and cookie information contained in the URIs of the requests and responses.

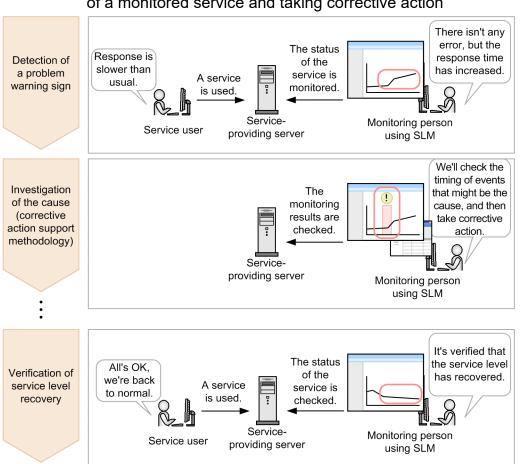
Whether to monitor services by process is evaluated when the following types of processes occur:

- Newly added processes
- Important processes in terms of system requirements
- Processes that are expected to generate a high workload
- Other processes that require special attention

## Example of predictive error detection in the performance of a monitored service and the corrective action support methodology

This example detects an unusual service status that is a warning sign of an abnormality in the performance of a monitored service and takes an appropriate corrective action before an error materializes.

The following figure shows the general procedure for detecting a warning sign of an abnormality in the performance of a monitored service and taking corrective action.



## Figure 1-5: General procedure for detecting a warning sign of an abnormality in the performance of a monitored service and taking corrective action

First, use of SLM to monitor a service's status detects an increase in response time, which is a warning sign of an abnormality in service performance. Next, from SLM's past monitoring records, the timing of an event that might be the cause of the warning sign of an abnormality in service performance is checked. You can use the results of this check to respond to (handle) the detected event.

When SLM verifies that the service level has recovered after the cause was identified and you took corrective action, your handling of the abnormality in service performance at the stage of the early warning sign is complete.

SLM performs predictive error detection in the performance of a monitored service. It can also help you take corrective action. Because SLM enables you to take corrective action before a problem actually occurs in the service, you can improve the service users' sense of satisfaction.

For this example, an example of setting up the monitored items is explained in 3.3.1 Example of setup for predictive error detection in the performance of monitored services and the corrective action support methodology, and an example of execution of monitoring is explained in 4.6.1 Example of execution for predictive error detection in the performance of monitored services and the corrective action support methodology.

## Example of predictive error detection in the performance of processes in a monitored service and the corrective action support methodology

This subsection explains an example of monitoring a new process added to a monitored service.

New functions have been added to a monitored service after upgrading. Because newly added processes are prone to errors, this example registers the new process into SLM and monitors it individually in addition to monitoring the entire service.

The following figure shows the general procedure for detecting a warning sign of an abnormality in the performance of a registered process of a monitored service and taking corrective action.

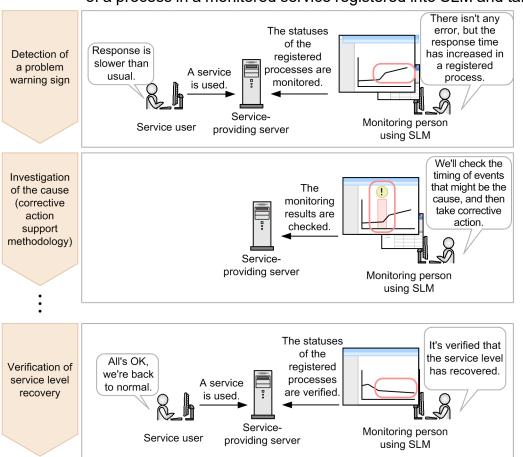


Figure 1-6: General procedure for detecting a warning sign of an abnormality in the performance of a process in a monitored service registered into SLM and taking corrective action

This example monitors the status of newly registered processes. First, SLM detects an increase in response time in a registered process, a warning sign of an abnormality in service performance for the process. Next, from SLM's past monitoring records, the timing of an event that might be the cause of the warning sign of an abnormality in service performance for the process is checked. You can use the results of this check to respond to (handle) the detected event.

When SLM verifies that the service level has recovered after the process resulting in the warning sign of the abnormality and the timing of the event were identified and you took an appropriate corrective action, your handling of the abnormality in service performance of the process at the stage of the early warning sign is complete.

SLM performs predictive error detection in the performance of each process of a monitored service. It can also assist you in taking an appropriate corrective action.

For this example, an example of setting up the monitored items is explained in 3.3.2 Example of setup for predictive error detection in the performance of processes in monitored services and the corrective action support methodology, and an example of execution of monitoring is explained in 4.6.2 Example of execution for predictive error detection in the performance of processes in monitored services and the corrective action support methodology.

## 1.1.3 Supporting creation of reports required for periodic reporting

A service provider must check the quality of its services periodically, even if there are no abnormalities in service status. Especially when a service provider outsources the management and operation of its business systems to a data center and provides its services from the data center to its service users, the data center must be requested to report the service status periodically to the service provider in some form, such as reports.

If you use SLM, you can display service monitoring results for any specified period. You can select the items to be displayed as appropriate to the circumstances and you can save selected information as templates. You can also output monitoring results as CSV files. All this reduces the time required for performing periodic checking and creating reports, thereby achieving efficient service management and operation.

The following figure shows an example of a report displayed by SLM.

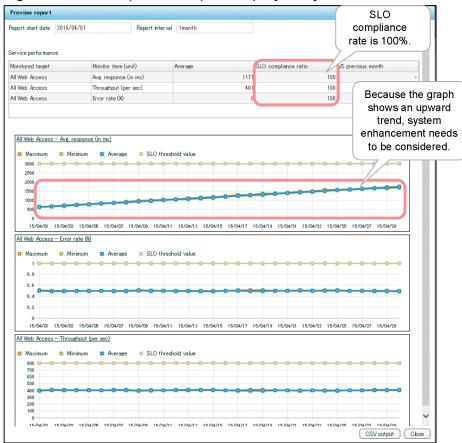


Figure 1-7: Example of a report displayed by SLM

For the services being monitored, this report displays the monitoring results for a period of one month, starting on April 1, 2015, for three items: the average response time, throughput, and error rate.

For example, from the table at the top, which displays the average value, the SLO compliance rate, and the previous month VS for each monitored item, you can conclude that the services were provided to users in April 2015 and that the service level was maintained because the SLO compliance rate was 100%. The change on one of the graphs (the graph that shows an upward trend) can be used to determine that whether the system needs to be enhanced.

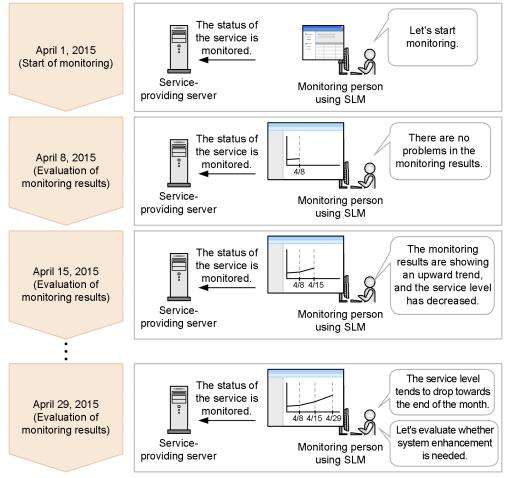
You can display reports by service and also by service process.

#### Example of periodic evaluation of monitored services

This subsection explains an example that evaluates the need for system enhancement by assessing periodically whether the service level is being maintained.

The following figure shows the general procedure for using SLM to check and evaluate the service level.





On April 1, 2015, use of SLM to monitor service status began. Since then, the service level has been checked for any problems at the end of each week.

On April 8, 2015, no problems were seen, but a week later on April 15, 2015, monitoring detects a decrease in the service level, based on the trend shown on a graph of the monitoring results. On April 29, 2015, the last evaluation for the month, it becomes clear that the service level tends to drop toward the end of the month. As a result, the monitoring person who is using SLM evaluates whether some sort of system enhancement might be called for in order to increase the service users' sense of satisfaction.

As shown in this example, you can use SLM for periodic evaluation of service level and then use the monitoring results to improve the service users' sense of satisfaction.

For this example, an example of setting up the monitored items is explained in 3.3.4 Example of setup for periodic evaluation of the status of monitored services, and an example of execution of monitoring is explained in 4.6.4 Example of execution for periodic evaluation of the status of monitored services.

# 1.2 Linking with Performance Management to monitor service status (working with Performance Management)

SLM can monitor the status of hosts and middleware that provide monitored services and the availability of the monitored services. To achieve this, SLM must be linked with Performance Management. Linking with Performance Management is not required. We recommend that you evaluate your need to link with Performance Management, as necessary.

You can achieve the following monitoring by linking SLM with Performance Management:

• Monitoring the performance of hosts and middleware

SLM acquires information collected by Performance Management's monitoring agents, thus enabling you to monitor the performance of hosts and middleware in an SLM window. Because SLM enables you to monitor the performance of hosts and middleware based on threshold values, if an unusual service status is detected, you can use the SLM window to check the status of the hosts and middleware during the period in question. Based on this information, you can investigate and determine whether the cause was in a host or middleware.

This monitoring is supported when PFM - Agent or PFM - RM is used as the monitoring agent.

• Monitoring service availability

By monitoring the availability of services, you can determine whether services are being provided without interruption. You can also obtain availability-related evaluation metrics (SLO) based on the monitored availability data and check the availability in an SLM window.

This monitoring is supported when PFM - Agent for Service Response is used.

#### Important

SLM does not support job monitoring.

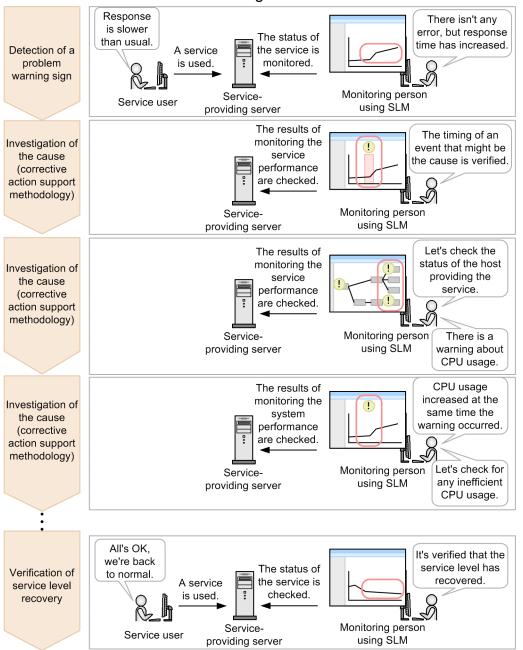
## Example of predictive error detection in the performance of a monitored service and the investigative support methodology

This example uses the results obtained by monitoring hosts and middleware to determine the cause of a warning sign detected during monitoring of a service's performance.

This enterprise system has been using SLM to monitor service status. As the system has become increasingly complex, more and more time has been required to identify the causes of problems. Therefore, the current SLM monitoring system has been linked with Performance Management to monitor the status of hosts and middleware and to reduce the time required for identifying causes.

The following figure shows the general procedure for detecting a warning sign of an abnormality in the performance of a monitored service, and for taking an appropriate corrective action.

Figure 1-9: General procedure for detecting a warning sign of an abnormality in the performance of a monitored service, and for taking an appropriate corrective action by linking SLM and Performance Management



First, use of SLM to monitor a service's status detects an increase in response time, which is a warning sign of an abnormality in service performance. Next, from SLM's past monitoring records, the timing of an event that might be the cause of the warning sign of an abnormality in service performance is checked. Then, the example checks the results of monitoring the host and middleware providing that service for any warning. If there is a warning, the example investigates further to determine the cause because that warning might have something to do with the change in service performance. For example, if CPU usage increased considerably at the time the warning sign of an abnormality in service performance was detected, the corresponding host's middleware information must be examined for any inefficient CPU usage in order to identify the cause.

If an appropriate corrective action was taken and SLM shows that the service level has recovered, the corrective action needed at the stage of the warning sign of an abnormality in the service performance is complete.

For this example, an example of setting up the monitored items is explained in 3.3.3 Example of setup for predictive error detection in the performance of systems running monitored services and the corrective action support

methodology (working with Performance Management), and an example of execution of monitoring is explained in 4.6.3 Example of execution for predictive error detection in the performance of systems running monitored services and the corrective action support methodology (working with Performance Management).

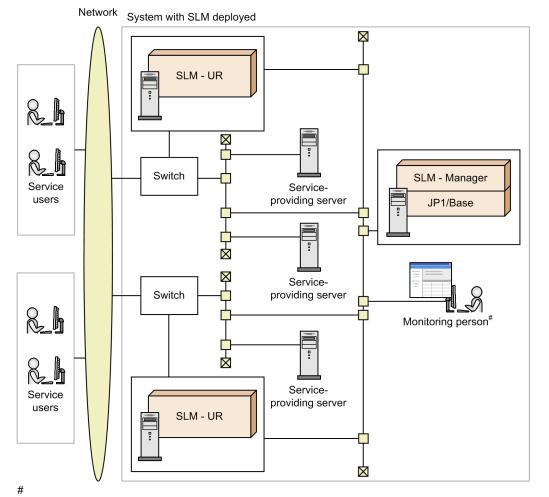
### 1.3 SLM system configuration

SLM consists of *SLM* - *UR*, which collects HTTP packets exchanged between service providing servers and users, and *SLM* - *Manager*, which monitors the service status based on the HTTP packets collected by SLM - UR.

A system configuration intended mainly for monitoring service status (service performance) is called a *service monitoring configuration*. The service monitoring configurations include a configuration for monitoring only service performance and a configuration for monitoring both service performance and system performance by linking SLM with Performance Management.

The following figure shows the system configuration for using SLM to monitor service performance only.

Figure 1-10: System configuration for monitoring service performance only



Internet Explorer and Flash Player must be installed on the monitoring person's computer.

Of the components shown in the figure, the roles of those that require explanation are described below.

#### SLM - Manager

Aggregates and analyzes the HTTP packets collected by SLM - UR and monitors the service status. The monitoring results can be displayed on the monitoring person's computer. They can also be saved to a file and used for creating reports.

Multiple SLM - URs can be connected to a single SLM - Manager.

#### SLM - UR

Collects HTTP packets of requests and responses that are exchanged between service users and service providing servers via switches. An SLM - UR is provided for each switch.

A single SLM - UR can monitor multiple services.

To reduce the network load, we recommend that you provide separate interfaces to connect to switches and to SLM - Manager, as shown in the system configuration here.

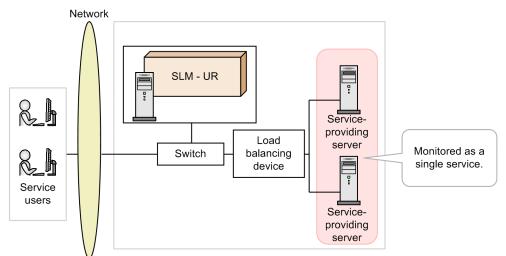
#### Notes

- SLM - UR uses two ports, one for monitoring services and one for communicating with SLM - Manager. If the mirrored ports do not support TCP/IP communications due to switch specifications, the port for monitoring services cannot be shared for communicating with SLM - Manager. In such a case, provide separate network interface cards, one for connecting switches and one for connecting SLM - Manager.

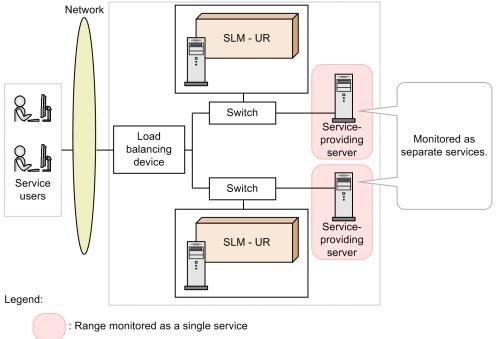
- If a load balancing device is used, the range monitored by an SLM - UR depends on its location within the system configuration. SLM placed outside the load balancing device monitors the services distributed by the load balancing device as a single service. SLM - UR placed inside the load balancing device within the system configuration monitors the services distributed by the load balancing device as separate services. The following figure shows the placement of SLM - UR and its monitoring range when a load balancing device is used.

## Figure 1-11: Placement of SLM - UR and its monitoring range when a load balancing device is used

• SLM - UR placed outside the load balancing device



• SLM - UR placed inside the load balancing device



#### JP1/Base

Manages the users (JP1 users) who access SLM - Manager as the authentication server and performs monitoring.

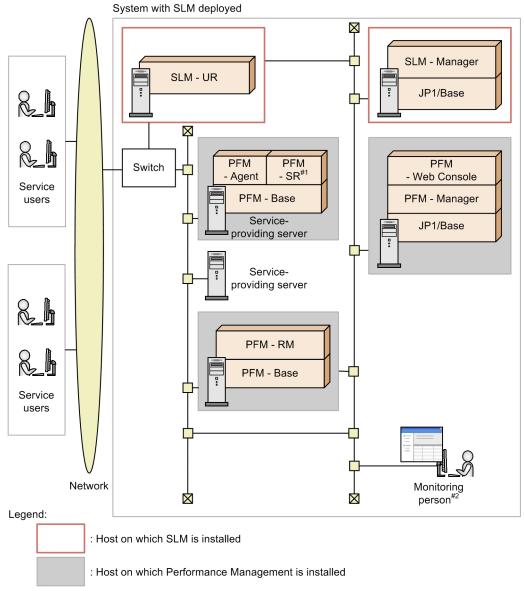
#### Switch

This is a network switch placed between external and internal networks. This network switch must have a port mirroring function.

If you link SLM with Performance Management to monitor system performance and availability, you must have Performance Management-related products.

The following shows an example of a system configuration when SLM is linked with Performance Management.

## Figure 1-12: Example of a system configuration when SLM is linked with Performance Management



#1: In the figure, *PFM* - *SR* is an abbreviation for *PFM* - *Agent for Service Response*.

#2: Internet Explorer and Flash Player must be installed on the monitoring person's computer.

Of the components shown in the figure, the roles of the Performance Management products are explained below.

#### PFM - Base

Sends the data collected by PFM - Agent, PFM - Agent for Service Response, or PFM - RM to PFM - Manager and SLM - Manager.

#### PFM - Manager

Sends configuration information to SLM - Manager as requested by SLM - Manager. PFM - Manager also provides the functions of PFM - Base. If PFM - Agent, PFM - Agent for Service Response, and/or PFM - RM are running on the same host, data collected by these products is sent to SLM - Manager.

#### **PFM - Agent**

Provides functionality as a monitoring agent and monitors the system performance of a monitored host. PFM - Agent is installed on the monitored host.

#### PFM - RM

Provides functionality as monitoring agent and monitors the system performance of a monitored host. PFM - RM is installed on a host that is not the monitored host.

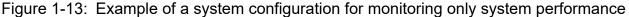
#### **PFM - Agent for Service Response**

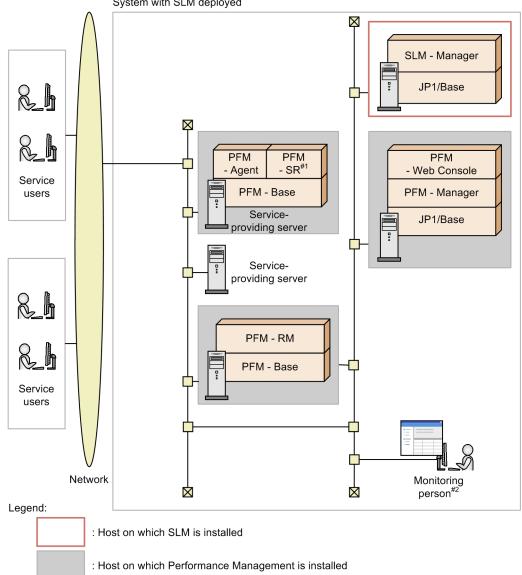
Provides functionality as a monitoring agent and collects operation data required for monitoring the availability of a monitored host.

#### PFM - Web Console

Provides windows for researching detailed system performance by using the Performance Management functions. When a warning sign of an error in monitored services is detected and the host in question is identified, PFM - Web Console is started from an SLM window.

A system configuration intended mainly for monitoring system performance is called a *system monitoring configuration*. Such a configuration is used to monitor system performance only. The following figure shows an example of a system monitoring configuration.





System with SLM deployed

#1: In the figure, PFM - SR is an abbreviation for PFM - Agent for Service Response.

#2: Internet Explorer and Flash Player must be installed on the monitoring person's computer.

SLM - Manager and SLM - UR can be run in cluster systems. For the system configuration and components required when SLM - UR is run in a cluster system, see 6.1.2 SLM system configuration in a cluster system.

# 1.4 Single-manager configuration and master/slave configuration of SLM - Manager

You can select either a single-manager configuration or a master/slave configuration for SLM - Manager. Both of these configurations are described below.

• Single-manager configuration

A configuration where SLM - Manager is operated from a single device.

• Master/slave configuration

A configuration where SLM - Manager is operated across multiple devices. Instances of SLM - Manager are run in parallel, with the load distributed among them. This increases the maximum number of items that can be monitored. The following figure illustrates the load distribution among SLM - Manager instances.

The following figure illustrates the load distribution among SLM - Manager instance

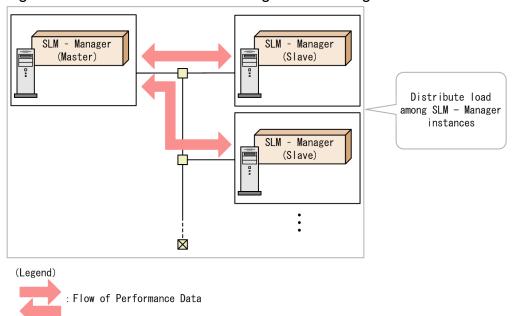


Figure 1-14: Load distribution among SLM - Manager instances

Of the elements shown in the figure, the roles of the notable elements will be explained.

#### SLM - Manager (Master) (master instance of SLM - Manager)

The instances of SLM - Manager across multiple devices are controlled by using a master/slave configuration. Various requests, such as those for analysis of performance information sent from PFM - Base, are output to the instances of SLM - Manager that are subject to control, and responses are received as necessary.

Link PFM - Manager with the master instance of SLM - Manager. SLM - Manager links with PFM - Manager from a single device, in the same manner as in the single-manager configuration.

#### SLM - Manager (Slave) (slave instance of SLM - Manager)

Receives requests from the master instance of SLM - Manager, and returns the appropriate responses.

A maximum of 19 devices that have slave instances of SLM - Manager can link with the master instance of SLM - Manager.

For details about changing the configuration of SLM - Manager, see 8.4 Changing the configuration of SLM - Manager.

### Important

With the master/slave configuration, refrain from registering monitored services with the same service group name or same service name. Monitored services with the same name cannot be distinguished from each other on the screen.

### Note

Because the master instance of SLM - Manager must link with the slave instances of SLM - Manager, the master will be subject to a greater monitoring load than the load when SLM - Manager is in the single-manager configuration, and performance might be worse in comparison. When the number of monitored items is such that the items can be sufficiently monitored by using only a single instance of SLM - Manager, we recommend running SLM - Manager in the single-manager configuration.

## 1.5 Flow of a monitoring job and the timing of using SLM

This section explains by way of examples when SLM can be used in the flow of a monitoring job.

### 1.5.1 Assumed personnel

SLM assumes the following personnel and their responsibilities:

• Person who monitors all services

This is the person in overall charge of monitoring. This person's responsibilities include monitoring setup, monitoring of monitored services, and periodic reporting of service status. This person can monitor all services. SLM assumes that this person is an expert with experience in monitoring.

Of the tasks involved in *Check* in the PDCA cycle, this person is responsible for monitoring setup, monitoring, and periodic evaluation. In the event of a problem in SLM, this person checks the event and takes an appropriate corrective action. If the problem cannot be resolved, this person collects necessary data and contacts the maintenance service provider for the monitored service or the system administrator.

The person who monitors all services is also responsible for the tasks performed by the specific service monitors.

• Monitor

This person is a member of the monitoring staff who monitors designated services. A monitor receives instructions from the person who monitors all services and monitors such designated services as all newly installed services and services that have just been recovered. Of the tasks involved in *Check* in the PDCA cycle, a monitor is responsible for monitoring.

A monitor performs monitoring according to instructions and past cases, not necessarily just on the basis of the monitor's own experience. If a monitor encounters a problem the monitor is not familiar with or discovers a problem warning sign while monitoring monitored services, it is the monitor's responsibility to report the matter to the *specific service monitor* for the applicable service.

• Specific service monitor

This is a person who monitors a specific service. SLM assumes that this person is less experienced than the person who monitors all services.

Of the tasks involved in Check in the PDCA cycle, a specific service monitor is responsible for monitoring.

When notified by a monitor that a problem needs to be handled or a problem warning sign concerning the specific service monitor's service has been detected, the specific service monitor checks the nature of the event. If corrective action is needed, the specific service monitor notifies the person who monitors all services.

• Maintenance service provider for a monitored service

This is a person who handles problems with the programs that constitute a monitored service. This person must be familiar with the monitored service (such as a developer of the monitored service).

• System operator

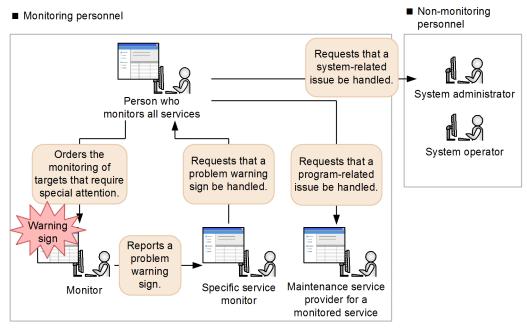
This person runs IT equipment and networks and installs and sets up the products, including SLM, that are deployed in the company. This person is also a designer of the monitoring system that uses SLM and is responsible for monitoring setup and periodic evaluation of the tasks involved in *Check* in the PDCA cycle.

• System administrator

This person manages the company's entire system and handles problems in SLM when notified by the person who monitors all services.

The following figure shows the relationships among these personnel.

### Figure 1-15: Relationships among SLM personnel



### Note

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You must grant to the monitoring personnel JP1 permission levels that are appropriate to their SLM operation permissions. This manual assumes that the following permissions are granted to the individual personnel:

No.	Person	Assumed JP1 permission level
1	Person who monitors all services	JP1_ITSLM_Admin
2	Monitor	JP1_ITSLM_User
3	Specific service monitor	JP1_ITSLM_User
4	Maintenance service provider for a monitored service	JP1_ITSLM_User

For details about setting the operation permissions, see 5.2.3 Specifying operation permissions for each JP1 user.

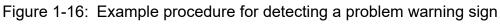
# 1.5.2 General procedure for detecting problem warning signs and the timing of using SLM

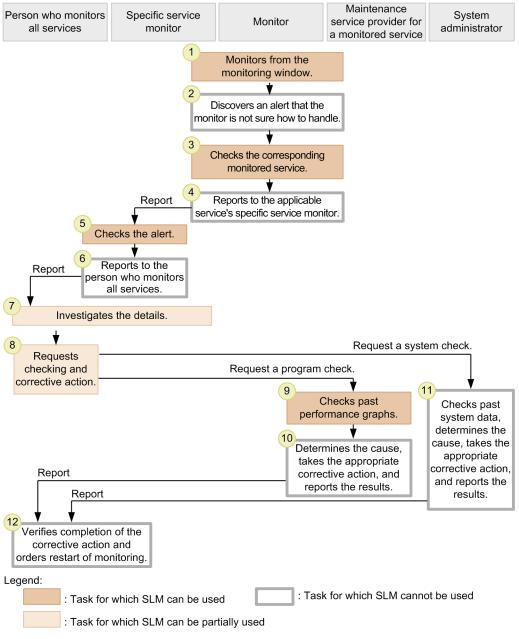
This subsection explains an example of the monitoring task procedure for detecting problem warning signs and when SLM can be used.

The following provides an overview of the task:

- A monitor discovers a problem warning sign and contacts the service's specific service monitor.
- The specific service monitor checks the situation and reports to the person who monitors all services and requests handling of the event.
- The person who monitors all services handles the warning sign in collaboration with the maintenance service provider for the monitored service or the system administrator.

The following shows an example procedure for detecting a problem warning sign.





The table below explains the flow of tasks shown in the figure. For the tasks for which SLM can be used, the section in which the task is explained is shown.

Table 1-1: Flow of tasks for	detecting a problem	warning sign and	corresponding sections
	dotooting a problom	warning orgin and	concoponding cooliono

No.	Task	What you can do with SLM	Section
1	The monitor uses SLM to monitor designated monitored services as instructed by the person who monitors all services. If an error or warning occurs during monitoring, the monitor takes an appropriate corrective action, if possible.	In the Home window, you can check the statuses of all monitored services that you are in charge of. Monitored services resulting in an error or warning are displayed in <b>Caution service</b> . You can view events that have been issued for	4.3.1 Checking the status of the monitored services of all service groups
2	The monitor detects an error or warning that the monitor is not sure how to handle using SLM.	services requiring attention in <b>Events in the last</b> 7 days.	

No.	Task	What you can do with SLM	Section
3	The monitor uses SLM to identify the monitored service resulting in the error or warning.	In the Home window, you can check the statuses of all monitored services that you are in charge of. Monitored services resulting in an error or warning are displayed in <b>Caution service</b> .	4.3.1 Checking the status of the monitored services of all service groups
		You can view events that have been issued for services requiring attention in <b>Events in the last</b> 7 days.	
4	The monitor notifies the specific service monitor about the error or warning by means such as telephone.		
5	The notified specific service monitor uses SLM to verify the error or warning.	You can identify the corresponding error or warning displayed in the Home window based on such information as detection date and time, and view the details by displaying the Troubleshoot window from the <b>Details</b> column.	4.4.1 Checking the timing of an event causing an error or warning
6	The specific service monitor reports the error or warning verification results to the person who monitors all services.		
7	The person who monitors all services and the specific service monitor both use SLM to investigate past errors and warnings to determine the cause of the error or warning. They also check the operation logs before and after the past errors or warnings as well as the product logs and traces.	In the Troubleshoot window, you can check past service performance and identify the timing of the error or warning.	<ul><li>4.3.2 Checking the status of the monitored services in a specific service group</li><li>4.4.1 Checking the timing of an event causing an error or warning</li></ul>
8	The person who monitors all services requests verification from the maintenance service provider for the monitored service or the system administrator based on the results of the investigation of whether the cause is in the system or program.	If SLM is linked with Performance Management, you can display configuration information in the Troubleshoot window and locate the host providing the monitored service. You can also check system performance related to that host for any problem. This helps you determine whether the error or warning needs to be reported to the system administrator for verification.	4.3.2 Checking the status of the monitored services in a specific service group 4.4.1 Checking the timing of an event causing an error or warning
9	The maintenance service provider for the monitored service uses SLM to check past data, such as performance charts, to investigate the timing of warning signs and events that are likely related.	In the Troubleshoot window, you can check the past service performance and verify the status of the service and the system's performance when the error or warning occurred.	<ul><li>4.3.2 Checking the status of the monitored services in a specific service group</li><li>4.4.1 Checking the timing of an event causing an error or warning</li></ul>
10	If the cause has been determined, the maintenance service provider for the monitored service takes an appropriate corrective action. This person then reports the results to the person who monitors all services.		
11	The system administrator checks past data related to the system. If Performance Management is deployed, its functions can be used for this check. If the cause has been determined, the system administrator takes an appropriate corrective action and reports the results to the person who monitors all services.		
12	Upon receiving the results, the person who monitors all services verifies that the action has		

No.	Task	What you can do with SLM	Section
12	been completed. This person then orders the monitor to restart monitoring and also tells the monitor how to handle a reoccurrence of the same error or warning.		

Legend:

--: Not applicable

## 1.6 Organization of this manual and its relationship to the expected tasks

The following table describes the organization of this manual.

Table 1-2:	Organization	of this manual
	organization	or the manual

Chapter or appendix	Contents
1. About SLM	Provides an overview of SLM and explains the linkage with Performance Management for monitoring the status of hosts and middleware, the system configuration, the flow of monitoring jobs and the tasks that can be achieved by using SLM, and the relationship between the organization of this manual and the expected tasks.
2. Startup and Login	Explains how to start and terminate SLM, how to log in and log out, and provides notes about the operations subsequent to login.
3. Monitoring the Services to Be Monitored and Setup Required for Monitoring	Explains the different types of monitoring that can be achieved by using SLM. This chapter also explains how to register the services to be monitored and how to set up monitoring items for the services that are to be monitored.
4. Performing Monitoring	Provides an overview of using SLM for monitoring and explains execution of monitoring. Execution of monitoring includes starting and stopping monitoring, monitoring the status of monitored services, the investigative support methodology for determining the cause when errors or warnings in monitored services are displayed, and creation of reports used for periodic reporting.
5. Preparations Before Starting	Explains the preparations before starting SLM, including installation, setup, and user settings. This chapter also explains optional preparations, such as linking with JP1/IM to report monitoring results by a means such as email, linking with Performance Management to monitor hosts and middleware providing services, and editing system definition files (jplitslm.properties or jplitslmur.properties) to change SLM operations.
6. Preparations Before Starting (Cluster System)	Explains the preparations before starting SLM in a cluster system, including installation, setup, and user settings. This chapter also explains optional preparations, such as linking with JP1/IM to report monitoring results by a means such as email, linking with Performance Management to monitor hosts and middleware providing services, and how to migrate to a cluster system.
7. Troubleshooting	Explains how to troubleshoot problems with SLM.
8. Maintenance	Explains SLM maintenance tasks, including backing up and restoring SLM definition files (system definition files and system configuration properties files) and databases, as well as migrating definition information and databases when computers are replaced.
9. Commands	Explains the syntax of the SLM commands.
10. SLM Windows	Explains the SLM windows.
11. Messages	Explains the messages that are issued by SLM.
A. List of Port Numbers Used by SLM	Provides a list of the port numbers used in SLM.
B. SLM Communication	Explains the port numbers used in SLM communication and the direction in which data passes through a firewall.
D. Version Changes	Explains the changes in each version.
E. Reference Material for This Manual	Provides reference material for this manual.
F. Glossary	Defines terms used in this manual.

The tasks when SLM is used to manage the service level are broken down by the person in charge.

This manual is organized in such a manner that each person involved in monitoring can read the chapters appropriate to that person's tasks. The following figure shows the correspondence between chapters and the personnel described in 1.5.1 Assumed personnel.



				Pers	onnel		
Ch	apters and appendixes in this manual	Person who monitors all services	Specific service monitor	Monitor	Maintenance service provider for a monitored service	System operator	System administrator
1.	About SLM	•••••			• • • • • • • • • • • • • • • • • • • •		
2.	Startup and Login			O	O		
3.	Monitoring the Services To Be Monitored and Setup Required for Monitoring	•••••	O		·····O		
4.	Performing Monitoring		• • • • • • • • • • • •	O	O		
5.	Preparations Before Starting	O <sup>#</sup>				••#	
6.	Preparations Before Starting (Cluster System)	······O <sup>#</sup> ·····				••#	
7.	Troubleshooting	O					
8.	Maintenance						
9.	Commands						0
10.	SLM Windows	•••••			O		
11.	Messages	•••••	· · · · · · · · · · · · · · · · · · ·		•••••		
А	List of Port Numbers Used by SLM	······O·····	O		O	O	O
В	Reference Material for This Manual	······O·····	O		O	O	O
С	Glossary	0	· · · · · · · · · · · · · · · · · · ·		O		

Legend:

•: See the corresponding chapter.

o: See the corresponding character or appendix as needed.

#: See either Chapter 5 or 6, as appropriate to your environment.

### Note

We recommend that a person who will serve both as the person who monitors all services and as a system operator read the chapters in this manual in the following order when SLM is deployed:

For a non-cluster system:

- 1. 1. About SLM
- 2.5. Preparations Before Starting
- 3.2. Startup and Login

4.3. Monitoring the Services to Be Monitored and Setup Required for Monitoring

5. 4. Performing Monitoring

For a cluster system:

- 1. I. About SLM
- 2. 6. Preparations Before Starting (Cluster System)
- 3.2. Startup and Login
- 4.3. Monitoring the Services to Be Monitored and Setup Required for Monitoring
- 5. 4. Performing Monitoring



# **Startup and Login**

This chapter explains how to start and terminate SLM, how to log in and log out, and provides notes about the operations subsequent to login.

Read this chapter after you have finished installing SLM. For details about installing SLM, see <u>5.</u> <u>Preparations Before Starting</u> or <u>6.</u> <u>Preparations Before Starting (Cluster System)</u>.

### 2.1 Starting and terminating SLM

SLM requires that SLM - Manager and SLM - UR be started and terminated in a specific order.

When you start SLM, you must start SLM - Manager before you start SLM - UR. When you terminate SLM, you must terminate SLM - UR before you terminate SLM - Manager.

### 2.1.1 Starting SLM - Manager

To start SLM - Manager, start the services that comprise SLM - Manager and set their service status to Start.

You can have the SLM - Manager services start automatically when the OS starts. In such a case, you must use JP1/ Base's startup control to set the order in which the services are to be started. If the services start automatically when the OS starts without setting the order, logging in to SLM or issuing JP1 events might fail. If SLM - Manager and SLM -UR are installed on the same host and you want to start the services automatically, you must use JP1/Base's startup control to set the SLM - Manager services to start first when the OS starts. For details about using JP1/Base for startup control, see the *JP1/Base User's Guide*.

If you have not set up the services to start automatically or when you are restarting SLM - Manager, you must start SLM - Manager by starting the services manually.

This subsection explains how to start SLM - Manager manually. If you run SLM - Manager in a cluster system, use the cluster software to start SLM - Manager; for details about the services to be started by the cluster software, see (3) Supplementary information.

## (1) Before you start

• Verify that JP1/Base is running.

For details about how to start JP1/Base, see the JP1/Base User's Guide.

- Verify that your user account belongs to the OS's Administrators group.
- Verify that SLM Manager has been set up.
   For details about how to set up SLM Manager, see 5.1.6 Setting up SLM Manager.
- Verify that SLM UR is not running.
- If you link your SLM with Performance Management, verify that the necessary linkage information has been defined in a system definition file. For details about how to define the necessary linkage information, see 5.4.1 Setting up the linkage between SLM and Performance Management (working with Performance Management).
- If you link your SLM with Performance Management, start each monitoring agent of the linked Performance Management and PFM Manager. It doesn't matter whether you start SLM Manager first or Performance Management first.
- If you link your SLM with JP1/IM, verify that the necessary linkage information has been defined in a system definition file. For details about how to define the necessary linkage information, see 5.5.1 Linking with JP1/IM.

# (2) Procedure

To start SLM - Manager:

- 1. From the Windows Start menu, select Administrative Tools, and then Services.
- 2. Start the SLM Manager service SLM Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0).

2. Startup and Login

- 3. Start the SLM Manager service SLM Manager Service (service name: JP1 ITSLM MGR Service).
- 4. Start the SLM Manager service SLM Manager Web Service (service name:

JP1\_ITSLM\_MGR\_Web\_Service).

### Important

When SLM - Manager is in the master/slave configuration, do not start the service "SLM - Manager Web Service" from a slave instance of SLM - Manager.

Once the status of all three services is set to Start and in the above order, SLM - Manager has started.

## (3) Supplementary information

- If you run SLM in a cluster system, use the cluster software to start the following services in the order shown below:
  - 1. Start the SLM Manager service SLM Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0).
  - 2. Start the SLM Manager service SLM Manager DB Cluster Service (service name: HiRDBClusterService\_JL0).
  - 3. Start the SLM Manager service SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service).
  - 4. Start the SLM Manager service SLM Manager Web Service (service name: JP1\_ITSLM\_MGR\_Web\_Service).
- To restart SLM Manager, perform (2) Procedure after SLM Manager has terminated.
- When you start SLM Manager and SLM UR, if you perform the following steps in this order, you might not be able to log in to SLM Manager for about two minutes because it takes time for SLM Manager to initialize:
  - 1. Terminate SLM Manager.
  - 2. Terminate SLM UR.
  - 3. Start SLM Manager.
- If you restart SLM Manager while you are logged in to SLM Manager, you must log in to SLM Manager again because the logged-in session becomes invalid.

For details about how to log in, see 2.2.1 Logging in to SLM - Manager.

- The services that comprise SLM Manager are dependent on each other. If you start SLM Manager Service before starting SLM Manager DB Service, SLM Manager DB Service starts automatically. Similarly, if you start SLM Manager Web Service before starting SLM Manager Service, SLM Manager Service starts automatically.
- If you have changed the system configuration (including when you restore the system configuration after a change) while SLM Manager is running, you must restart SLM Manager.
- If you link your SLM with Performance Management, information about the linkage with Performance Management that is defined in a system definition file takes effect when SLM Manager is started. Therefore, if you want to edit the system definition file while SLM Manager is running, first terminate SLM Manager, edit the system definition file, and then restart SLM Manager.
- If SLM Manager is terminated after service detection of monitored services has started, service detection of monitored services will remain stopped the next time SLM Manager is started.
- If SLM Manager is terminated after monitoring of monitored services has started, the following processing takes place, depending on the managerStartMode value in SLM Manager's system definition file (jplitslm.properties):

<sup>2.</sup> Startup and Login

• When the managerStartMode property is omitted or normal is specified:

Monitoring of all monitored services whose monitoring had already started at the time of the previous termination processing is stopped.

• When restart is specified for the managerStartMode property:

Monitoring of all monitored services whose monitoring had already started at the time of the previous termination processing is restarted in the normal status.

If you specify **restart** for the managerStartMode property and you restart monitoring of the monitored services, the monitoring of inactive SLM - UR's monitored services is also placed in started status, but collection of service performance information is restarted after the corresponding SLM - UR is started.

• If a firewall has been set up on the machine from which you access SLM - Manager via a browser, you need to release the ephemeral ports used for communication between the browser and SLM - Manager.

## (4) Next task

• 2.1.2 Starting SLM - UR

## (5) Related topics

• 2.1.4 Terminating SLM - Manager

### 2.1.2 Starting SLM - UR

To start SLM - UR, start the SLM - UR service and set its service status to Start.

You can have the SLM - UR service start automatically when the OS starts if you set it up in the OS to start automatically. If SLM - Manager and SLM - UR are installed on the same host and you want to start the service automatically, you must use JP1/Base's startup control to set the SLM - Manager services to start first when the OS starts. For details about using JP1/Base for startup control, see the *JP1/Base User's Guide*.

If you have not set up the service to start automatically or when you are restarting SLM - UR, you must start SLM - UR by starting the service manually.

This subsection explains how to start SLM - UR manually. If you run SLM - UR in a cluster system, use the cluster software to start SLM - UR.

## (1) Before you start

- Verify that your user account belongs to the OS's Administrators group.
- Verify that SLM UR has been set up. For details about how to set up SLM - UR, see 5.1.7 Setting up SLM - UR.
- Verify that SLM Manager is running.
   For details about how to start SLM Manager, see 2.1.1 Starting SLM Manager.

## (2) Procedure

To start SLM - UR:

1. From the Windows Start menu, select Administrative Tools, and then Services.

<sup>2.</sup> Startup and Login

2. Start the SLM - UR service SLM - User Response Service (service name: JP1\_ITSLM\_UR\_Service).

Once the status of the service is set to **Start**, SLM - UR has started.

# (3) Supplementary information

- To restart SLM UR, perform (2) Procedure after SLM UR has terminated.
- If you restart SLM UR while monitored services are being monitored, the restarted SLM UR starts monitoring automatically.

For details about starting monitoring, see 4.2.1 Starting monitoring.

• If you have changed the system configuration (including when you restore the system configuration after a change) while SLM - UR is running, you must restart SLM - UR.

# (4) Next task

• 2.2.1 Logging in to SLM - Manager

# (5) Related topics

• 2.1.3 Terminating SLM - UR

# 2.1.3 Terminating SLM - UR

To terminate SLM - UR, stop the SLM - UR service and set its service status to Stop.

To restart SLM - UR, you must first terminate SLM - UR by stopping its service manually.

This subsection explains how to terminate SLM - UR manually. If you run SLM - UR in a cluster system, use the cluster software to terminate SLM - UR.

# (1) Procedure

To terminate SLM - UR:

- 1. From the Windows Start menu, select Administrative Tools, and then Services.
- 2. Stop the SLM UR service SLM User Response Service (service name: JP1\_ITSLM\_UR\_Service).

Once the service status is set to Stop, SLM - UR has terminated.

# (2) Supplementary information

• If you use JP1/Base's startup control, the services are stopped when the OS is terminated in the reverse order from when they were started. You do not need to be concerned with the order in which services are stopped, even when SLM - Manager and SLM - UR are installed on the same host.

# (3) Related topics

• 2.1.4 Terminating SLM - Manager

<sup>2.</sup> Startup and Login

JP1/Service Level Management Description

## 2.1.4 Terminating SLM - Manager

To terminate SLM - Manager, stop the SLM - Manager services and set their service status to Stop.

If you do not use JP1/Base's startup control or if you want to restart SLM - Manager, you must first terminate SLM - Manager by stopping its services manually.

This subsection explains how to terminate SLM - Manager manually. If you run SLM - Manager in a cluster system, use the cluster software to terminate SLM - Manager. For details about the services to be stopped by using the cluster software, see (2) Supplementary information.

# (1) Procedure

To terminate SLM - Manager:

- 1. From the Windows Start menu, select Administrative Tools, and then Services.
- 2. Stop the SLM Manager service SLM Manager Web Service (service name: JP1\_ITSLM\_MGR\_Web\_Service).
- 3. Stop the SLM Manager service SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service).
- 4. Stop the SLM Manager service SLM Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO).

Once the status of all three services is set to Stop in the above order, SLM - Manager has terminated.

## (2) Supplementary information

- If you run your SLM in a cluster system, use the cluster software to stop the following services in the order shown below:
  - 1. Stop the SLM Manager service SLM Manager Web Service (service name: JP1\_ITSLM\_MGR\_Web\_Service).
  - 2. Stop the SLM Manager service SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service).
  - 3. Stop the SLM Manager service SLM Manager DB Cluster Service (service name: HiRDBClusterService\_JL0).
  - 4. Stop the SLM Manager service SLM Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0).
- Terminating SLM Manager does not terminate the SLM UR that is connected to SLM Manager. For details about how to terminate SLM - UR, see 2.1.3 Terminating SLM - UR.
- The services that comprise SLM Manager are dependent on each other. If you attempt to stop SLM Manager Service while SLM - Manager Web Service is running, the OS's Stop Other Services dialog box will be displayed. Similarly, if you attempt to stop SLM - Manager DB Service while SLM - Manager Service is running, the OS's Stop Other Services dialog box will be displayed.
- If you use JP1/Base's startup control, the services are stopped when the OS is terminated in the reverse order from when they were started. You do not need to be concerned with the order in which services are stopped, even when SLM Manager and SLM UR are installed on the same host.
- If SLM Manager is terminated after monitoring of monitored services has started, accumulation of service
  performance information during the termination processing might be interrupted for several to several dozens of
  seconds. For this reason, we recommend that you stop monitoring of monitored services before you terminate SLM
   Manager.

<sup>2.</sup> Startup and Login

- If SLM Manager is terminated after service detection of monitored services has started, service detection of monitored services remains stopped the next time SLM Manager is started.
- If you link your SLM with Performance Management, terminate each agent of Performance Management and PFM
   Manager as needed. There is no rule for the order in which SLM Manager and Performance Management must be terminated.

<sup>2.</sup> Startup and Login

### 2.2 Logging in to and out of SLM - Manager

To set up and perform monitoring, you must first start Internet Explorer (the browser) and log in to SLM - Manager.

### 2.2.1 Logging in to SLM - Manager

This subsection explains how to log in to SLM - Manager.

## (1) Before you start

• Verify that JP1/Base has been used to set JP1 user operation permissions for the user who will be logging in to SLM - Manager.

For details about setting JP1 user operation permissions, see 5.2.3 Specifying operation permissions for each JP1 user.

• Verify that the target SLM - Manager is running. For details about starting SLM - Manager, see 2.1.1 Starting SLM - Manager.

If you are performing monitoring, the SLM - UR connected to the login target SLM - Manager must also be running in addition to the above conditions. For details about starting SLM - UR, see 2.1.2 Starting SLM - UR.

## (2) Procedure

To log in to SLM - Manager:

1. Display the following access destination in the browser:

```
http://IP-address-of-SLM-Manager's-Web-server:listen-port-number-of-SLM-Manager's-
Web-server/jplitslm/jplitslm.jsp
```

### Important

- Do not specify a loopback address for the Web server IP address of JP1/SLM Manager.
- When accessing an instance of SLM Manager being operated in a master/slave configuration, specify the Web server IP address of the master instance of SLM Manager. When a slave instance of SLM Manager is accessed, the system might not function normally.

If the access destination is correct, the following window appears:

Service Level M	anagement - Manager	
Service Level M	anagement - Manager <sub>User name</sub>	
Service Level M		

2. Enter your user name and password.

```
2. Startup and Login
```

JP1/Service Level Management Description

The entered user name and password must be of a JP1 user.

3. Click the **Login** button.

If the SLM - Manager window is displayed, you have successfully logged in to SLM - Manager.

## (3) Supplementary information

- *listen-port-number-of-SLM-Manager's-Web-server* is the value of the psb\_Listen definition item in the options file that you specified when you set up SLM Manager. By default, 20900 is set.
- If the entered user name or password is invalid, an error message is displayed. In such a case, the entered password is cleared.
- The Login button becomes clickable only when the entered user name and password are valid. If no user name or password is entered or if the entered information is not valid, the Login button does not become clickable.
- Multiple users can log in using the same user name.
- If login fails a specific number of times, the user name and password fields and the **Login** button are disabled and the window is locked. If the window has been locked, you must reload it by pressing the **F5** key on the keyboard or by selecting the browser's **Refresh** button. This will reset the login errors count.

Use the loginFailedLimit property in the system definition file (jplitslm.properties) to specify the login errors count that will result in a locked window.

• Do not drag any draggable window, such as a dialog box that is displayed in the event of an error, outside the browser's window. If a draggable window is dragged outside the browser's window, buttons in the window will no longer be selectable with the mouse. If this happens, you must reload the window by pressing the F5 key on the keyboard or by selecting the browser's **Refresh** button. Note that after the window has been reloaded, the login window is displayed again. If you dragged an error dialog box outside the browser's window, check the log files for details of the error.

For details about the log files, see 7.2 Log files.

• If you are running SLM in a cluster system and failover has occurred in SLM - Manager, a message is displayed or a server's internal error is displayed; any attempt to log in to SLM - Manager will fail. In such a case, window operations are all disabled until the SLM - Manager failover has been completed. After the SLM - Manager failover has been completed, you must log in and perform necessary operations again.

If failover has occurred in SLM - UR, you can still perform window operations. However, you cannot start or stop detection of monitored services or start or stop monitoring during failover until you can use another SLM - UR. If this happens, an error occurs and the error message is displayed in the window. Re-execute the operation after SLM - UR failover has been completed.

• If a firewall has been set up on a host from which you access SLM - Manager via a browser, you need to configure the firewall to release ephemeral ports used for communication between the browser and SLM - Manager.

## (4) Related topics

- 2.2.2 Logging out of SLM Manager
- 8.6.4 Changing the listen port number of the SLM Manager embedded Web server
- A. List of Port Numbers Used by SLM

### 2.2.2 Logging out of SLM - Manager

This subsection explains how to log out of SLM - Manager.

The following window is used in this task:

	Home	Real-time Monitor	Troubleshoot	Ell Report				*	Setti
Current se	rvice group s	itatus summary	Error	📕 Warning 🛄 Normal 🛄 Stop	Caution service			Error 🕄 Warnin	Normal Ste
		Service group status (%)						Number of events in the	last 7days
Service group		0 20 41	0 60 80	Number of services	Service	Service group	Current	Error	Warning
Group03					1 Service04	Group02	0		3 0
Group 04		and the second			1 Service07	Group04	0		1 (
Group01		and the second second second			3 Service03	Group 01	1		0 11
Group02					2 Service01	Group 01	<b>S</b>		0 0
					Service02	Group 01	<b>S</b>		0 0
					Service05	Group02	0		0 0
					Service06	Group03	<b>S</b>		0 0
Events in t	he last7days								ing]):11 Normal⊘:1
	he last7days	When detected	Туре	Details	Service group	Service	Host		ing <b>) : 11 Normal ⊘ : 1</b> 16 Showing: 1 - 18 ↓ Monitor item
Status			Type OUTLIER	Details UPPER LIMIT	Service group Group81	Service Service13	Host -	< Total:	16 Showing: 1 - 16 →
Status	Level	When detected					Host 	4 Total: Monitored target	16 Showing: 1 - 16 Monitor item
Status Unread Unread	Level	When detected 2020/02/05 05:46:05	OUTLIER	UPPER LIMIT	Group01	Service03	Host - -	4 Total: Monitored target All Web Access	16 Showing: 1 - 16 Monitor item Throughput
Status Unread Unread Unread	Level	When detected 2020/02/05 05:46:05 2020/02/05 05:11:05	OUTLIER	UPPER LIMIT UPPER LIMIT	Group01 Group01	Service83 Service83	Host - - -	4 Total: Monitored target All Web Access All Web Access	16 Showing: 1 - 16 Monitor item Throughput Avg. response
Status Unread Unread	Level	When detected 2020/02/05 05:46:05 2020/02/05 05:11:05 2020/02/05 05:11:05	OUTLIER OUTLIER OUTLIER	UPPER LIMIT UPPER LIMIT UPPER LIMIT	Group01 Group01 Group01	Service03 Service03 Service03	Host - - - - -	<ul> <li>Total:</li> <li>Monitored target</li> <li>All Web Access</li> <li>All Web Access</li> <li>All Web Access</li> </ul>	16 Showing: 1 - 18 Monitor item Throughput Avg. response Avg. response+Thr***
Status Unread Unread Unread Unread	Level () () () ()	When detected 2020/02/05 05:45:05 2020/02/05 05:11:05 2020/02/05 05:11:05 2020/02/05 04:50:01	OUTLIER OUTLIER OUTLIER THRESHOLD	UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT	Group01 Group01 Group01 Group02	Service03 Service03 Service03 Service04	Host 	Total:     Monitored target     All Web Access	18 Showing: 1 - 16 Monitor item Throughput Avg. response Avg. response+Thr Avg. response
Status Unread Unread Unread Unread Unread	Level () () () () () () () () () () () () ()	When detected 2020/02/05 05:46:05 2020/02/05 05:11:05 2020/02/05 05:11:05 2020/02/05 05:48:01 2020/02/05 04:48:01	OUTLIER OUTLIER OUTLIER THRESHOLD THRESHOLD	UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT	Group01 Group01 Group01 Group02 Group02	Service03 Service03 Service03 Service04 Service04	Host - - - - - - - - - -	Total:     Monitored target     All Web Access	18 Showing: 1 - 18 Monkor item Throughput Avg. response Avg. response Avg. response Avg. response
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1. Click **Logout** in the upper right corner of the window.

In SLM, all windows except the login window have a Logout button in the upper right corner.

2. In the dialog box for confirming logout, click the **OK** button.

If the login window is displayed next, you have logged out successfully. When you click the **OK** button, window operations become disabled until logout is completed.

<sup>2.</sup> Startup and Login

## 2.3 Notes about operations after login to SLM - Manager

- If you refresh the window by pressing the F5 key on the keyboard or by selecting the browser's **Refresh** button, the login window is displayed.
- Once you log in to SLM Manager, the browser's **Back** and **Forward** buttons cannot be used to move from one window to another. Clicking the browser's **Back** button will display the Web page that was being displayed before the login window was displayed. If you click the **Forward** button after that, the login window will be displayed.
- If, while a window that follows SLM Manager's login window is being displayed, you attempt to display that window in another browser by copying the browser's URL, the login window will be displayed.
- The current login session will expire if communication with SLM Manager is interrupted for one minute. You must re-log in.

For details about how to log in, see 2.2.1 Logging in to SLM - Manager.

• Do not drag any draggable window, such as a dialog box that is displayed in the event of an error, outside the browser's window. If a draggable window is dragged outside the browser's window, buttons in the window will no longer be selectable with the mouse. If this happens, you must reload the window by pressing the F5 key on the keyboard or by selecting the browser's **Refresh** button. Note that after the window has been reloaded, the login window is displayed again. If you dragged an error dialog box outside the browser's window, check the log files for details of the error.

For details about the log files, see 7.2 Log files.

- The browser's zoom functions cannot be used to zoom the display.
- The login window is displayed automatically in the following cases:
  - When an error has occurred in the embedded database.
  - When a non-resumable error has occurred.
  - When a memory shortage has occurred.
  - When servlet initialization has failed.
  - When the session has expired.
- Do not change PFM-related permissions while you are logged in to SLM. The following explains what happens if permissions are changed while you are logged in:
  - If business group access permissions are changed while you are logged in, the change does not take effect until the next time you attempt to log in. If access permissions have been changed, log in again and then click the **Refresh configuration information** button in the **Configuration information settings** area of the Settings window.
  - If a JP1 resource group to which the JP1\_PFM\_Operator permission has been granted is added or deleted while you are logged in, the change will not take effect until the next time you log in. To effect the change, log in again when such a resource group is added or deleted.

<sup>2.</sup> Startup and Login



# Monitoring the Services to Be Monitored and Setup Required for Monitoring

This chapter explains the different types of monitoring that can be achieved by using SLM. This chapter also explains how to register the services to be monitored and how to set up the monitoring items for the monitored services.

## 3.1 Monitoring supported by SLM

SLM monitors the following three monitoring items based on actual accesses from users to the monitored services:

- Average response time
- Throughput
- Error rate

The data obtained by monitoring the monitoring items (average response time, throughput, and error rate) is characterized as the *service performance*. Service performance represents one second's worth of data, which means that service performance is measured 60 times per minute.

SLM enables you to perform out-of-range value detection and SLO monitoring on the basis of the monitoring items. The following table describes out-of-range value detection and SLO monitoring.

Table 3-1: Out-of-range value detection and SLO monitoring

No.	Monitoring (detect	ion) type	Description
1	Out-of-range value de	etection	If the performance of a monitored service varies significantly from what is typical, this monitoring method regards such a condition as an early warning sign of a potential service performance error.
2	SLO monitoring	Trend monitoring	This monitoring method determines trends in the performance of a monitored service and uses the trends to predict overages of a service performance threshold.
	Threshold value monitoring		This monitoring method detects an overage of a service performance threshold for a monitored service.

When out-of-range value detection, trend monitoring, and threshold value monitoring are all performed, a warning is displayed by out-of-range value detection and trend monitoring whenever the possibility of a service performance error in a monitored service is suspected. If you take an appropriate corrective action at this early stage, you can prevent the service performance error from occurring. Once a service performance error has occurred, it is displayed by threshold value monitoring. In such a case, immediate corrective action is assumed to be called for.

If you link SLM with Performance Management, you can monitor the hosts and middleware that provide the monitored services. The monitoring items are set in Performance Management beforehand. The performance data monitored by Performance Management is called *system performance*. Out-of-range value detection and SLO monitoring are also applicable to system performance, similarly to service performance.

In addition, by linking SLM with Performance Management, you can monitor the availability of monitored services. *Availability monitoring* detects monitored services that have stopped as a result of an error. You can obtain the following evaluation metrics (SLOs) on the basis of the availability information acquired by availability monitoring:

- Service availability
- Mean time to recovery
- Mean time between failures

### 3.1.1 SLM's monitoring methods and types of monitored targets

A *Web access* covers the period from when a request was initiated by a user being monitored by SLM until the response to that request is completed.

<sup>3.</sup> Monitoring the Services to Be Monitored and Setup Required for Monitoring

SLM enables you to use two methods to monitor Web accesses:

• Monitoring all Web accesses (All Web Access monitoring)

This method monitors Web accesses for all monitored services. In this method, the monitored target is called *All Web Access*.

• Monitoring specific Web accesses (Web transaction monitoring) This method monitors the Web accesses that are related to specific processing in the monitored services. In this method, a monitored target is called a *Web transaction*.

If you link SLM with Performance Management, you can also monitor system performance.

This subsection explains how monitoring of All Web Access, monitoring of Web transactions, and monitoring linked with Performance Management work and their respective monitoring items.

## (1) Monitoring all Web accesses (All Web Access monitoring)

This method monitors all Web accesses to monitored services. When this method is used, **All Web Access** is displayed as the monitored target in the window.

The following figure shows the monitored target range when all Web accesses are monitored.

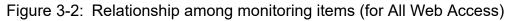
Figure 3-1: Range of monitored target when all Web accesses are monitored

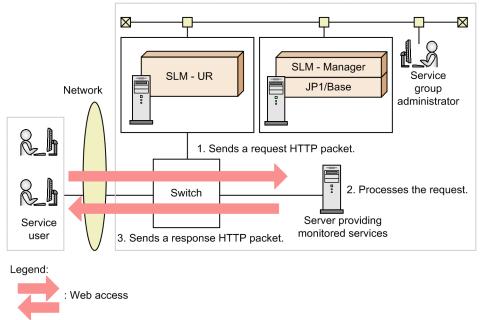
Service user	2	Server providing
	3	monitored services
Legend:		
	: Web access	

In this example, Web accesses 1 through 3 have occurred from the service user to monitored services. With this monitoring method, the averages or the totals of Web accesses 1 through 3 constitute the service performance of the monitoring items.

## (2) Monitoring items for All Web Access

The following shows the relationship among the three monitoring items when monitoring of All Web Access is performed.





• Average response time (milliseconds)

This is the average time required for 1 through 3 in the figure to be completed. Responses include error responses.#

• Throughput (per second)

This is a count of the number of times 1 through 3 in the figure occurred in one second. Responses include error responses.<sup>#</sup> Note that requests resulting in a timeout during request collection by SLM - UR are not included. Each set of the events identified as 1 through 3 is counted as one when the set is completed.

• Error rate (%)

This is the percentage of the event 1 items in the figure that end up as event 3 error responses<sup>#</sup> or as timeouts during request collection by SLM - UR.

#

These are the responses whose HTTP status is error 400 to 599.

The HTTP packets for requests and responses are collected by SLM - UR when they pass the switch.

## (3) Monitoring specific Web accesses (Web transaction monitoring)

Among all Web accesses to the monitored services, this method monitors only those Web accesses that constitute a series of processes that satisfy a specified condition. Such a series of processes that is subject to monitoring is called a Web transaction. Because this method enables you to determine the status of specific processes contained in a monitored service individually, you can promptly identify a process that might adversely affect service performance. You can set multiple Web transactions for a single monitored service. A condition for identifying the Web accesses to be treated as a Web transaction is called a *Web access condition*.

You can monitor Web transactions if your SLM - Manager and SLM - UR versions are 09-51 or later.

The following figure illustrates the range of a monitored target when specific Web accesses are monitored.

<sup>3.</sup> Monitoring the Services to Be Monitored and Setup Required for Monitoring

Figure 3-3: Range of monitored target when specific Web accesses are monitored

	<u>→</u> 2	•
Service user	<u>→</u> 3	Server providing
	4	monitored services
	5	
Legend:		
	Web access	
	Web transaction	

In this example, Web accesses 1 through 5 have occurred from the service user to the monitored service. Whenever Web accesses 1 through 3 all satisfy a pre-registered Web access condition, that series of Web accesses is monitored as a Web transaction.

In the monitoring of a Web transaction, the average or the total of the results of monitoring the transmissions of the first request (1 in the figure) through the last response (3 in the figure) of the Web transaction constitutes the monitoring item's service performance.

SLM monitors only those Web accesses that occur in an order specified for the Web access condition. A Web access whose order of occurrence is undetermined cannot be included in a Web transaction.

Whether Web accesses are included in a target Web transaction is determined as follows:

1. Each time a Web access occurs, whether that Web access satisfies a Web access condition is checked in the order of the Web access conditions.

When a Web access that satisfies the first Web access condition is detected, any subsequent Web access is checked to determine whether it satisfies the second Web access condition.

Note that once a Web access satisfies one of the Web access conditions, it is no longer checked against any subsequent Web access conditions. For example, a Web access satisfying the first Web access condition is treated as satisfying only the first Web access condition even if it would also satisfy the second Web access condition.

2. When a Web access satisfying the last Web access condition is detected, the series of Web accesses is identified as a Web transaction.

If another Web access satisfying the first Web access condition is detected in the same Web transaction before a Web access satisfying the last Web access condition is detected, the current check processing is placed in the status in which a Web access satisfying only the first Web access condition has been detected.

Examples are shown below. For these examples, the Web access conditions for a Web transaction are set in the order of Web access condition  $1 \rightarrow$  Web access condition  $2 \rightarrow$  Web access condition 3.

### Example of Web accesses that are treated as a Web transaction

• Web accesses that occurred in the order of Web access  $1 \rightarrow$  Web access  $2 \rightarrow$  Web access  $3 \rightarrow$ 

- Web accesses that occurred in the order of Web access 1 → Web access 2 → Web access 4 → Web access 3 (Web access 4 is not used in the calculation of the error rate monitoring item for the Web transaction)
- Web accesses that occurred in the order of Web access 1 → Web access 2 → Web access 2 → Web access 3 (the second Web access 2 is not used in the calculation of the error rate monitoring item for the Web transaction)

### Examples of Web accesses that are not treated as a Web transaction

- Web accesses that occurred in the order of Web access 1 → Web access 2 → Web access 1 → Web access 3
   In this case, when the second Web access 1 was detected, the existing record for the order Web access 1 → Web access 2 was discarded. The subsequent Web accesses are not treated as a Web transaction because they occurred in the order of Web access 1 → Web access 3.
- Web accesses that occurred in the order of Web access 1 → Web access 2 → Web access 3 → Web access 3
  The same Web access cannot be monitored more than once in the same Web transaction. Monitor this example as Web access 1 → Web access 2 → Web access 3. Note that the Web accesses that can be monitored are Web access 1 → Web access 2 → Web access 3 (first one). Web access 1 → Web access 3 (second one) cannot be monitored.

### (4) Components of a Web access condition for a Web transaction

A web access condition consists of the URI and cookie contained in the Web access. For a URI, only path and query information can be specified as Web access condition components.

The following examples illustrate the structure of a URI and cookie contained in a Web access.

### URI

http://host:port/path?query

- Example 1: http://hitachi.XXX:1234/YYY/ZZZ.html
- Example 2: http://hitachi.XXX?division=1&section=2

### Cookie

*key=value* 

- Example 1: year=2011
- Example 2: month=08

A Web access satisfying the specified Web access condition becomes a Web transaction. If multiple Web access conditions are specified, the set of Web accesses that satisfy all the specified Web access conditions becomes a Web transaction.

If multiple Web accesses satisfy the same Web access condition, they are treated as being the same Web transaction.

Suppose Web transaction X is defined as follows:

### **Definition of Web transaction X**

- Web accesses are to occur in the order of Web access  $1 \rightarrow$  Web access  $2 \rightarrow$  Web access 3.
- The Web access conditions are defined as follows:

Web access condition	Path	Query condition	Cookie condition
Web access condition 1	/top.html	a=1	Not specified.
Web access condition 2	/middle.html	b=.*	Not specified.
Web access condition 3	/bottom.html	c=3	Not specified.

<sup>3.</sup> Monitoring the Services to Be Monitored and Setup Required for Monitoring

### Combinations of Web accesses monitored as Web transaction X

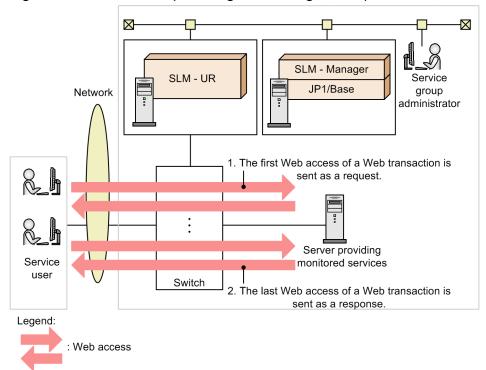
Both of the following combinations of Web accesses are monitored as Web transaction X:

- Web accesses occurring in the order of *path*:/top.html *query*:a=1, *path*:/middle.html *query*:b=2, and *path*:/bottom.html *query*:c=3
- Web accesses occurring in the order of *path*:/top.html *query*:a=1, *path*:/middle.html *query*:b=4, and *path*:/bottom.html *query*:c=3

### (5) Monitoring items for Web transactions

The following figure shows the relationship among three monitoring items when Web transactions are monitored.

Figure 3-4: Relationship among monitoring items (for Web transactions)



• Average response time (milliseconds)

This is the average time required for the last Web access (2 in the figure) of the Web transaction to be sent as a response since the first Web access (1 in the figure) was sent as a request. Responses include error responses.<sup>#</sup>

• Throughput (per second)

This is the number of times 1 through 2 occurred in one second, beginning with transmission of the first Web access (1 in the figure) of the Web transaction as a request through the last Web access (2 in the figure) as a response. Responses include error responses.<sup>#</sup> Note that requests resulting in a timeout during request collection by SLM - UR are not included. From the transmission of the first Web access (1 in the figure) of the Web transaction as a request through the transmission of the first web access (2 in the figure) of the Web transaction as a request through the transmission of the last Web access (2 in the figure) as a response is counted as one when the set is completed.

• Error rate (%)

This is the percentage of the number of Web accesses (1 to 2 in the figure) in the Web transaction sent as requests that ended up as error responses<sup>#</sup> or as timeouts during request collection by SLM - UR.

#### #

These are the responses whose HTTP status is error 400 to 599.

The HTTP packets for requests and responses are collected by SLM - UR when they pass the switch.

# (6) Monitoring system performance (by linking with Performance Management)

If you link your SLM with Performance Management, you can monitor system performance.

System performance is monitored based on performance data collected for each Performance Management monitoring agent assigned to a monitored service. Each monitoring agent that collects data is displayed in the SLM window at a separate hierarchical level and the results are reported by hierarchical level.

### (7) Monitoring items for system performance

There are two types of monitoring items for system performance:

- Default monitoring items provided by Performance Management
- Monitoring items defined by the user of Performance Management

SLM enables you to monitor both types of monitoring items together.

For details about the monitoring items for system performance, see the description of monitoring items in the *JP1/ Performance Management User's Guide*.

System performance data is collected in units called *records*. There are two types of records depending on the monitoring item:

- Single-instance records
- Multi-instance records

Single-instance records

A single-instance record consists of one row of data that is collected at a single point of data collection. The following shows an example of single-instance records:

Collection time	CPU usage	Memory usage	
10:00	10%	20%	 Single-instance record
11:00	15%	30%	

Each row (record) contains performance data for a specific time. This record stores performance data, such as the CPU usage and memory usage at the monitored host.

### Multi-instance record

A multi-instance record consists of multiple rows of data that are collected at a single point of data collection. The following shows an example of multi-instance records:

Collection time	Drive	Disk usage	
10:00	С	50	
10:00	D	70	 Multi-instance record
11:00	С	55	
11:00	D	75	

This example collects performance data for drives C and D in separate rows at each collection time. Therefore, to search for specific performance data at a particular time, you must specify both the collection time and the drive.

For details about instance records, see the description of performance data in the JP1/Performance Management Planning and Configuration Guide.

## (8) Supplementary information

- When a Web transaction is monitored, the Web accesses constituting the Web transaction must be within the monitoring range of the SLM UR that monitors the target service for which the Web transaction is defined. If you want to monitor Web accesses outside the monitoring range, you must monitor them as Web accesses of a Web transaction of a monitored service whose Web accesses fall within the desired monitoring range.
- If you monitor a Web transaction and want to identify whether each Web access is from the same user, specify a session condition for the Web transaction. For a session condition, specify a query and a cookie key. Web accesses with the specified query and cookie key values are treated as Web accesses from the same user.
- The maximum length of an HTTP packet that SLM can monitor is 1,500 bytes including the IP and TCP headers. If a packet is longer than 1,500 bytes but contains the information to be monitored in the first 1,500 bytes, SLM can monitor it successfully. Any data following byte 1,500 is discarded.

## (9) Related topics

- 3.1.2 Using out-of-range value detection for detection of unusual status in monitored services
- 3.1.3 Using trend monitoring for detection in advance of threshold overages
- 3.1.4 Using threshold value monitoring for detection of threshold overages
- 3.2.5 Setting up the Web transactions to be monitored
- 3.2.9 Setting up the monitoring items for service performance

# 3.1.2 Using out-of-range value detection for detection of unusual status in monitored services

Out-of-range value detection is performed for each monitoring item. You can also combine multiple monitoring items and monitor them as a set. For details about the monitoring items, see 3.1.1 SLM's monitoring methods and types of monitored targets.

This subsection provides an overview of out-of-range value detection and how to obtain the base line, upper-limit value, and lower-limit value.

# (1) About out-of-range value detection

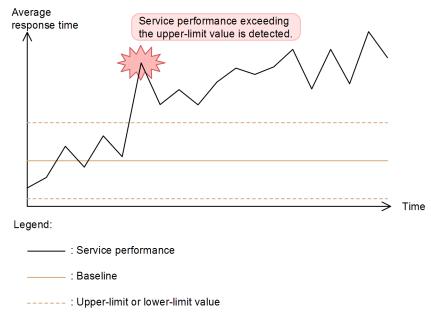
If the performance of a monitored service becomes noticeably poor, this monitoring method regards this change as an early warning sign of a potential service performance error. The method obtains an average value from accumulated past service performance data and detects any value that differs significantly from this average as constituting an *out-of-range value*. The average value obtained from accumulated past service performance data is called the *baseline*.

In out-of-range value detection, some upper margin from the baseline and some lower margin from the baseline are used as *upper-limit and lower-limit values*. This detection method checks whether the current service performance is veering significantly away from the baseline (that is, differs significantly from the usual service performance) and determines the current service performance to constitute an out-of-range value when it falls beyond the upper-limit or lower-limit value. The baseline and the upper-limit and lower-limit values are updated every 60 seconds.

Outlier detection is based on statistics using standard deviation. For the baseline, the average of the service performance data collected in the past is used. The upper and lower limits are calculated based on that average and standard deviation.

The following figure shows an example in which unusual service performance is detected by out-of-range value detection.

Figure 3-5: Example in which unusual service performance is detected by out-of-range value detection



This example monitors the average response time. The service performance value increased as time went by and an outof-range value was detected when it exceeded the upper-limit value.

The upper-limit and lower-limit values are determined by setting a *sensitivity* that determines a distance from the baseline, beyond which point the performance of a monitored service is to be detected as an out-of-range value. The sensitivity setting determines the sensitivity of detection.

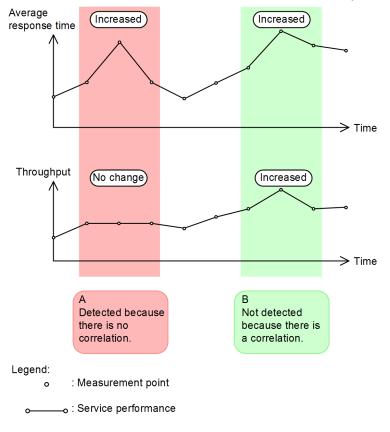
In out-of-range value detection, you can combine multiple monitoring items together as a set.

By combining multiple monitoring items, you can improve the precision of predictive error detection in service performance by taking into account a correlation among monitoring items. The two monitoring items that can be combined are average response time and throughput.

When these two monitoring items are correlated, one of them might seem abnormal, but it might not appear to be abnormal when the correlation is taken into account. For example, if the average response time is increasing but this is the result of an increase in throughput due to an increase in the number of users using the monitored service, this increase in average response time might be treated as a normal change in service performance due to the increased system load. In out-of-range value detection using a combination of multiple monitoring items, you can improve detection precision by treating a change in service performance caused by such a correlation as normal and not detecting it.

The following provides an example in which unusual service performance is detected by out-of-range value detection with a combination of multiple monitoring items.

Figure 3-6: Example in which unusual service performance is detected by out-of-range value detection with a combination of multiple monitoring items



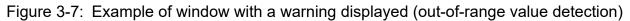
In *A* in the figure, an unusual increase either in average response time or in throughput in the same period would be detected as a warning sign of a service performance error. However, in *B* in the figure, the increases in both response time and throughput in the same period are treated as being normal due to their correlation and they are not detected.

In out-of-range value detection with a combination of multiple monitoring items, the correlation of the two service performance items is taken into account in determining the baseline. When service performance falls beyond the upper-limit or lower-limit value that has been determined based on this baseline, the correlation is treated as not being the cause and a warning sign is detected.

In out-of-range value detection with a combination of multiple monitoring items, the baseline and the upper-limit and lower-limit values are updated every hour.

A detected out-of-range value is displayed in the window as a warning.

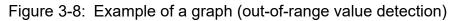
The following shows an example of a window in which a warning is displayed.



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The information displayed in the window for a warning includes a warning icon, the detection date and time, the name of the service group detected for the warning, and the service name. If service performance continues to exceed the upper-limit value or continues to be lower than the lower-limit value, only the first warning detected is displayed. You can view the service performance leading up to and following the point of the warning as a graph.

The following shows an example of a graph.





In the graph, a warning icon indicates the time the service performance exceeded the upper-limit value or dropped below the lower-limit value and a colored belt indicates the time period during which the event resulting in the out-of-range value is suspected to have occurred.

To perform out-of-range value detection, you must specify the following items in the Settings window:

• Days till start

- Days in baseline calculation
- Period of analysis
- Sensitivity

### Days till start

Specifies the number of days for which service performance data is to be accumulated before out-of-range value detection is to be started. Out-of-range value detection requires that service performance data be accumulated from the monitored service running in the actual operating environment before a baseline can be calculated. If service performance data is accumulated for at least one day, out-of-range value detection can be performed. However, if the number of days specified for accumulation of service performance data is less than the number of days to be used in the baseline calculation, the obtained baseline might be unrealistic because there is not enough data to calculate it. For **Days till start**, we recommend that you specify a value that is at least equal to the number of days to be used in the baseline calculation.

### Days in baseline calculation

Specifies the number of days' worth of accumulated past service performance data that are to be used for calculation of the baseline.

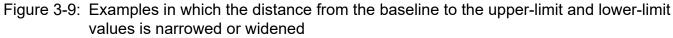
### Period of analysis

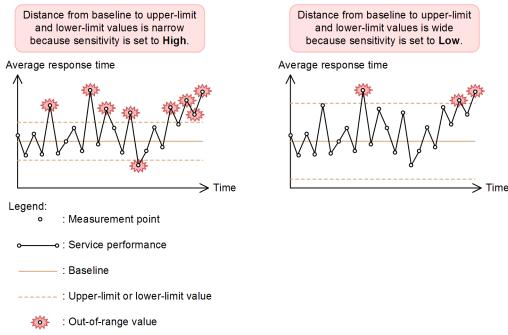
Select either Short range (past 60 days) or Long range (past 5 years) for the period of service performance to use with out-of-range value detection. By specifying Long range (past 5 years), the current service performance can be compared against the busy periods that occur in units of years.

### Sensitivity

Specifies a sensitivity setting for out-of-range value detection that is to be used to determine the distance from the baseline to the upper-limit and lower-limit values. You can select **High**, **Middle**, or **Low** for the sensitivity setting. High sensitivity reduces the distance from the baseline to the upper-limit and lower-limit values, making service performance anomalies more likely to be detected. Low sensitivity increases the distance from the baseline to the upper-limit and lower-limit values, making service performance anomalies less likely to be detected. For **High**, the distance is half of the distance for **Middle**; for **Low**, the distance is 1.5 times the distance for **Middle**.

The following shows examples in which the distance from the baseline to the upper-limit and lower-limit values is narrowed or widened depending on the sensitivity.





This example monitors the average response time. The service performance is the same in both graphs. However, when the distance from the baseline to the upper-limit and lower-limit values is narrow, as in the graph on the left, more out-of-range values in service performance are detected than when the distance from the baseline to the upper-limit and lower-limit values is wide, as in the graph on the right.

### Setting the upper-limit and lower-limit values for out-of-range value detection

Use the serviceBaselineExclusion property in SLM - Manager's system definition file

(jplitslm.properties) to set upper-limit and lower-limit values for out-of-range value detection.

When this property is set to true: SLM detects only values that exceed the upper-limit value from the baseline.

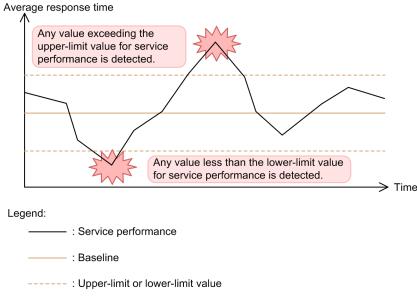
### Figure 3-10: Example of detecting only values that exceed the upper-limit value

Average response time
Any value exceeding the
upper-limit value for service
performance is detected.
A value less than the lower-limit value
for service performance is not detected.
Time
Legend:
Service performance
Baseline

----- : Upper-limit or lower-limit value

When this property is set to false: SLM detects any value exceeding the upper-limit value or dropping below the lower-limit value from the baseline.

# Figure 3-11: Example of detecting any value exceeding the upper-limit value or dropping below the lower-limit value



For details about how to edit system definition files, see 5.6.1 Editing the system definition files.

<sup>3.</sup> Monitoring the Services to Be Monitored and Setup Required for Monitoring

### When linking with Performance Management

If you link SLM with Performance Management, you can also perform out-of-range value detection in system performance. However, when system performance is monitored, out-of-range value detection using a combination of multiple monitoring items is not supported.

Use the systemBaselineExclusion property in SLM - Manager's system definition file (jplitslm.properties) to set upper-limit and lower-limit values for out-of-range value detection for system performance. For details about how to edit system definition files, see 5.6.1 Editing the system definition files.

### (2) How to obtain the baseline and upper-limit and lower-limit values

The baseline used as the criterion for determining out-of-range values is obtained as follows:

### For a service monitoring configuration

- 1. The average throughput service performance (average processing count) for the monitored service over the past one hour is determined.
- 2. From the accumulated service performance, the service performance of a day where the average number of incidents processed in the same time frame as the current time frame is close to the current average number of incidents processed will be selected.
- 3. From the service performance of the selected day, the average value (baseline) from the current time to one hour ahead will be calculated for each minute for every monitoring item.

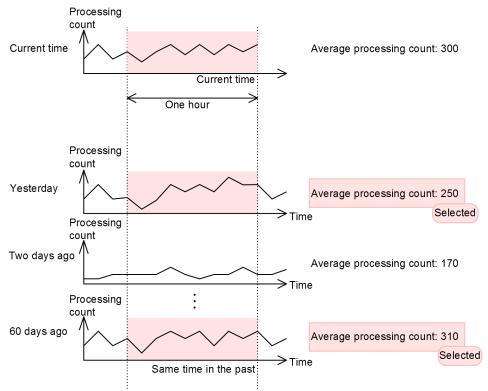
### For a system monitoring configuration

- 1. The average of the system values measured during the past hour for the selected monitored target is calculated.
- 2. From the accumulated system performance data (over a maximum of 60 days), the dates whose average system performance for the same period is the closest to the current average value are selected.
- 3. For each monitoring item, based on the system performance data for the selected dates, the average of the values from the present time to an hour later (the baseline) is calculated every minute.

For example, if service performance for the same time period differs greatly depending on the day of the week, such as a monitored service whose processing counts for regular business days differ considerably from the processing counts for weekends and holidays, a realistic baseline can be obtained by calculating it based on past service performance that takes into account regular business days and weekends and holidays.

The following example selects the past service performance for baseline calculation from the service performance data accumulated for the past 60 days and using the days whose average processing counts are closest to the past hour's average processing count.

Figure 3-12: Example of selecting the past service performance for baseline calculation from the service performance data accumulated for the past 60 days and using the days whose average processing counts are closest to the past hour's average processing count



The service performances for the days whose average processing counts are the closest to the average processing count for the past hour are selected from the accumulated past service performance data. In this example, the past hour's average processing count is 300. Therefore, the service performance from yesterday and from 60 days ago, which have the closest average processing counts, are selected from all the service performance over the past 60 days. The service performance from two days ago is not selected because its average processing count is quite different from the past hour's average processing count. As many service performance values are selected from the past service performance data as the number of days specified for **Days in baseline calculation** in the Settings window.

The following rules apply to selection of past service performance:

- If there are multiple days with the same average processing count, the day that is closest to the current date is selected.
- When a day whose service performance will be used is selected, the number of times service performance was collected that day is not considered. However, a day when no service performance data was collected will not be selected.
- In cases such as immediately after monitoring is stopped and then restarted, there might not be an average processing count for the past hour. In such cases, the first day that qualifies is selected by checking days in reverse order starting from the previous day.

According to these rules, past service performance over as many days as specified for **Days in baseline calculation** under **Error Predict. settings** is used (or past service performance over the number of days for which data has been accumulated is used). This selection of past service performance occurs once an hour on the hour.

The baseline is calculated after selection of the days to be used, in order of priority, from the oldest data that is entered.

You can start out-of-range value detection if one day's worth of service performance data has been accumulated. However, the baseline might not be realistic until as many days' worth of service performance data as needed for baseline

3. Monitoring the Services to Be Monitored and Setup Required for Monitoring

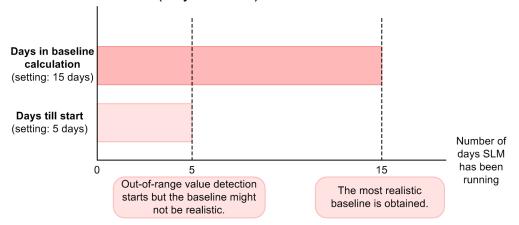
JP1/Service Level Management Description

calculation has accumulated. To obtain a realistic baseline, we recommend that you do not start out-of-range value detection until enough service performance data for the baseline calculation has accumulated.

For **Days till start** in the Settings window, specify the number of days service performance data is to be accumulated before out-of-range value detection is started.

The following figure shows the relationship between the number of days used for baseline calculation (**Days in baseline** calculation) and the number of days before out-of-range value detection is started (**Days till start**).

# Figure 3-13: Relationship between the number of days used for baseline calculation (Days in baseline calculation) and the number of days before out-of-range value detection is started (Days till start)



#### This example specifies 15 days for Days in baseline calculation and 5 days for Days till start.

In this example, out-of-range value detection starts five days after SLM operation began. The baseline is calculated from the past five days' worth of service performance. Because this value is less than the number of days set for baseline calculation, the resulting baseline might not be realistic. The most realistic baseline is obtained on the 15th day of SLM operation, because as many days' worth of service performance data as needed for baseline calculation has been accumulated.

When multiple monitoring items are combined, there are some differences in the baseline calculation method.

When out-of-range value detection is performed with multiple monitoring items combined, past service performance is based on average throughput (average processing count), and then the average correlation between average response time and throughput is obtained for the selected days, and finally the baseline is calculated.

Because the baseline used for detection is different, an out-of-range value in out-of-range value detection with multiple monitoring items combined differs as indicated below from the out-of-range value in normal out-of-range value detection:

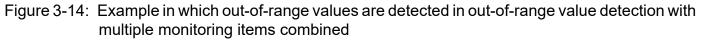
• Out-of-range value in normal out-of-range value detection

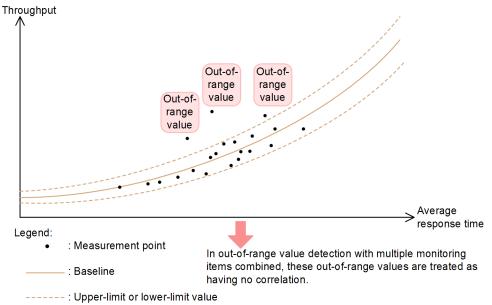
Indicates that the current service performance differs significantly from the usual service performance.

• Out-of-range value in out-of-range value detection with multiple monitoring items combined Indicates that in the current service performance, there is no correlation at this time between the multiple monitoring items.

Therefore, an out-of-range value exceeding the upper-limit value in normal out-of-range value detection might be less than the lower-limit value in out-of-range value detection with multiple monitoring items combined. Conversely, an out-of-range value that is less than the lower-limit value in normal out-of-range value detection might exceed the upper-limit value in out-of-range value detection with multiple monitoring items combined.

The following figure shows an example in which out-of-range values are detected in out-of-range value detection with multiple monitoring items combined.





This example monitors average response time and throughput. The baseline is calculated on a graph containing both monitoring items. Any value exceeding the upper-limit value or less than the lower-limit value is detected as an out-of-range value, and the monitoring items are treated as having no correlation.

The upper-limit and lower-limit values for out-of-range value detection or for out-of-range value detection with multiple monitoring items combined are determined by irregularity from the past service performance selected for the baseline calculation and the sensitivity that has been set for tuning detectability.

#### When linking with Performance Management

The baseline used for monitoring system performance is calculated from system performance data that is selected using the same criteria as for monitoring service performance. If a day has the highest priority in one monitoring item but no system performance was collected, that day is not selected; the day with the next highest priority is selected. Therefore, the days used for baseline calculation might depend on the monitoring items.

When you monitor system performance, you can specify separately for each monitoring item the number of days to be used for baseline calculation.

## (3) Detection criteria

In out-of-range value detection, out-of-range values are detected only when they occur consecutively so as to avoid detecting transient out-of-range values.

This subsection explains the criteria for detecting out-of-range values when service performance is monitored and when system performance is monitored.

#### When service performance is monitored

The detection criteria depend on the service performance measurement count per 60 seconds and the outlierRate property value specified in SLM - Manager's system definition file (jplitslm.properties). The outlierRate property value is applied to out-of-range value detection for all monitored services. For details about editing the system definition file, see 5.6.1 Editing the system definition files.

The following table describes the relationship between the outlierRate property value and the behavior of outof-range value detection.

No.	outlierRate property value (n)	Behavior of out-of-range value detection
1	1	An out-of-range value is detected when service performance exceeds the upper-limit value or drops below the lower-limit value even once.
		When service performance does not exceed the upper-limit value or drop below the lower-limit value over the next 60 seconds, it is determined to have returned to normal.
2	2 to 98	An out-of-range value is detected when service performance exceeds the upper-limit value or drops below the lower-limit value $S \times n \div 100$ times (rounded up) in 60 seconds.
		When the number of times service performance exceeds the upper-limit value or drops below the lower-limit value is less than $S \times n \div 100$ times (rounded up) for 60 seconds, the service performance is determined to have returned to normal.
3	99 to 100	An out-of-range value is detected when service performance continues to exceed the upper-limit value or be below the lower-limit value for 60 seconds.
		When service performance falls within the upper-limit and lower-limit values even once, it is determined to have returned to normal.

Table 3-2: Relationship between outlierRate property value and the behave	/ior of out-of-range
value detection	-

Legend:

S: Number of times service performance is measured in 60 seconds

n: outlierRate property value specified in SLM - Manager's system definition file

(jplitslm.properties)

Note that consecutive out-of-range values are checked for those exceeding the upper-limit value separately from those dropping below lower-limit value. This means that an out-of-range value exceeding the upper-limit value followed consecutively by one dropping below the lower-limit value are not detected as consecutive out-of-range values.

The following service performances are not processed as out-of-range value even if they exceed an upper-limit value or drop below a lower-limit value:

- Average response time when average response time and throughput are both 0 (throughput is detected as an outof-range value)
- Error rate when error rate and throughput are both 0 (throughput is detected as an out-of-range value)

This is because a throughput value of 0 indicates that there is no data. However, for throughput itself, this 0 value indicates the service performance has a processing count of 0. Therefore, the throughput is still detected as an out-of-range value if its value of 0 is above the upper-limit value or below the lower-limit value.

These average response time and error rate are still used as past service performance for baseline calculation because they can be in a normal status even though they were not processed as out-of-range values.

#### When system performance is monitored

The detection criterion is the number of the most recent measurements that exceed a specified value that generates an event. The number of times exceeded and the number of times measured are specified in **Occurrence frequency** under **Error Predict. settings** in the **Monitor settings** area of the Settings window. The following table describes the correspondence between the settings and the criterion for detecting an out-of-range value.

No.	Occurrence frequency settings	Criterion for detecting an out-of-range value
1	1 is specified for both times exceeded and times measured	An out-of-range value is detected if performance data for the current time falls beyond the lower or upper limit for predictive error detection.

No.	Occurrence frequency settings	Criterion for detecting an out-of-range value
2	A value other than 1 is specified for either times exceeded or times measured or both	<ul> <li>An out-of-range value is detected if the following conditions are both satisfied:</li> <li>Performance data for the current time falls beyond the lower or upper limit for predictive error detection.</li> <li>The number of the most recent measurements that fell beyond the lower or upper limit for predictive error detection exceeded the specified value. If the measurement acquisition count is less than the specified measurement count, the performance data has already fallen beyond the lower or upper limit for predictive error detection more times than specified.</li> </ul>

The following notes apply to evaluating out-of-range value detection:

- Once a notification is sent, no more notifications are sent until the status returns to normal even if the conditions are satisfied again.
- When monitoring is stopped, the measurement acquisition count and the number of times an excess beyond the upper-limit and lower-limit values occurred are initialized to 0. When monitoring is restarted, no previous measurement values obtained before monitoring was stopped are used for new detection.
- If no measurement value was obtained at a given time due to an error, that time is ignored and as many available most recent measurement values as needed for the specified detection are used.
- If no past data for baseline calculation is available at the time detection is checked, that time is treated as normal (neither the upper nor the lower limit has been exceeded).

## (4) Criteria for determining that performance has returned to normal

This subsection explains for service performance and for system performance the criteria for determining that performance has returned to normal since it exceeded the upper-limit value or dropped below the lower-limit value.

#### When service performance is monitored

Performance is determined to have returned to normal when service performance did not exceed the upper-limit value or drop below the lower-limit value more than  $S \times n \div 100$  times (rounded up) for the past 60 seconds.

S indicates the number of times service performance was measured in 60 seconds. *n* indicates the outlierRate property value specified in SLM - Manager's system definition file (jplitslm.properties).

For details about editing the system definition file, see 5.6.1 Editing the system definition files.

For example, if S is 60 and n is 10, performance is determined to have returned to normal when the number of times service performance exceeded the upper-limit value or dropped below the lower-limit value is less than 6. The upper-limit value and lower-limit value are checked separately. When both return to normal, performance is determined to have returned to normal. Recovery of performance is not detected from transient values that approach the baseline.

#### When system performance is monitored

The criterion for determining that performance has returned to normal depends on the value specified in **Occurrence frequency** for the monitored service under **Error Predict. settings** in the **Monitor settings** area of the Settings window.

For details about setting **Occurrence frequency** under **Error Predict. settings**, see 3.2.10 Setting up the monitoring items for system performance (working with Performance Management).

The following table explains the correspondence between the specifiable values and the criterion for determining that performance has recovered.

 Table 3-4: Criterion for determining that performance has returned to normal since it exceeded the upper-limit value or dropped below the lower-limit value

No.	Occurrence frequency values under Error Predict. settings	Criterion for determining recovery
1	1 is specified for both $M$ and $N$	Performance is determined to have returned to normal when the performance data for the current time is not above the upper-limit value or below the lower-limit value.
2	A value other than 1 is specified for either $M$ or $N$ or for both	Performance is determined to have returned to normal when the number of times the most recent $M$ measurement values exceeded the upper-limit value for predictive error detection is less than $N$ and the number of times they dropped below the lower-limit value is less than $N$ .
		When the measurement acquisition count is less than $M$ , performance is determined to have returned to normal when the number of times all the measurement values obtained so far exceeded the upper-limit value for predictive error detection is less than $N$ and the number of times they dropped below the lower-limit value is less than $N$ .

Legend:

*M*: Number of measurements taken as specified for **Occurrence frequency** (measured) under Error Predict. settings

*N*: Number of times a measured value is allowed to exceed the limit as specified for **Occurrence frequency** (Times exceeded) under Error Predict. settings

Recovery is determined when the values of the reported monitoring items are updated. Therefore, determination of recovery takes place in the interval during which information about the corresponding monitoring items is acquired.

You can check the recovery status in the Home or Real-time Monitor window. For details about how to check the Home window, see 4.3.1 Checking the status of the monitored services of all service groups. For details about how to check the Real-time Monitor window, see 4.3.2 Checking the status of the monitored services in a specific service group.

## (5) Supplementary information

- With respect to accumulation of service performance data for baseline calculation, a day when there was no measurement of service performance over some time period but there was at least one measurement of service performance during that day is counted as a day for which service performance has been accumulated. Therefore, the baseline might not be displayed for certain time periods because there is not enough service performance data available for baseline calculation.
- The data used to determine the timing at which out-of-range value detection starts will differ depending on the period of analysis. Performance data will be used for determination when the period of analysis is Short range, and the number of days for which report data has been obtained will be used when the period of analysis is Long range.
- When out-of-range value detection is started for service performance depends on whether the number of days' worth of data specified in the Settings window has been accumulated. The following explains when out-of-range value detection is started.
  - When the number of days service performance has been accumulated for excluding the current date is greater than the number of days for starting in the predictive error detection settings, the process will start from a time after at least 60 seconds (a maximum of five minutes when the period of analysis is Long range)from the time of the service performance obtained by JP1/SLM UR for the first time after monitoring has been started.
  - If the number of days, excluding the current day, for which service performance has been accumulated is less than the value specified for **Days till start** under **Error Predict. settings**, out-of-range value detection begins at or after 00:00:00 on the day the number of days, excluding the current day, for which service performance has been accumulated reaches the value specified for **Days till start**.

- When out-of-range value detection is started for system performance depends on whether the number of days' worth of data specified in the Settings window has been accumulated. The following explains when out-of-range value detection is started.
  - If the number of days, excluding the current day, for which system performance has been accumulated is equal to or greater than the value specified for **Days till start** under **Error Predict. settings**, out-of-range value detection begins at the time PFM Agent or PFM RM acquires system performance for the first time since monitoring started.
  - If the number of days, excluding the current day, for which system performance has been accumulated is less than the value specified for **Days till start** under **Error Predict. settings**, out-of-range value detection begins at or after 00:00:00 on the day the number of days, excluding the current day, for which system performance has been accumulated reaches the value specified for **Days till start**.
- In the case of a monitoring item whose system performance collection interval is long, the accuracy of the baseline, the upper-limit value, and the lower-limit value might be low because the amount of data for the past hour is small. To improve accuracy, reduce the collection interval in Performance Management or increase the number of days used for baseline calculation so as to increase the amount of past data available to be used.
- If predictive error detection is performed using a monitoring item whose collection interval is 24 hours or more, the data acquired immediately before the most recent data is not used for baseline calculation. Therefore, set the collection interval for monitoring items used for predictive error detection to less than 24 hours in Performance Management.
- If monitoring is stopped and not restarted until more than 24 hours later, the data obtained in the last minute before the stoppage might not be used for baseline calculation. You can correct this situation by performing monitoring for one hour or more continuously or stop monitoring once and then start it again.

## (6) Related topics

- 3.2.9 Setting up the monitoring items for service performance
- 3.2.10 Setting up the monitoring items for system performance (working with Performance Management)
- 4.3.1 Checking the status of the monitored services of all service groups

## 3.1.3 Using trend monitoring for detection in advance of threshold overages

Trend monitoring monitors each monitoring item. For details about the monitoring items, see 3.1.1 SLM's monitoring methods and types of monitored targets. Note that trend monitoring is not applicable to error rate.

This subsection explains trend monitoring.

## (1) About trend monitoring

Trend monitoring calculates trends in the performance trends of monitored services and detects in advance possible overages of a service performance threshold.

A *trend* is an approximated straight line obtained from current service performance. An approximated straight line is calculated on the basis of the past N hours of service performance. If this approximated straight line exceeds the threshold within N hours from the present time, this event is detected as a warning sign of a potential service performance error. The value of N is specified in the Settings window.

For details about how to specify numeric values in the Settings window, see 3.2.9 Setting up the monitoring items for service performance.

<sup>3.</sup> Monitoring the Services to Be Monitored and Setup Required for Monitoring

The following shows an example in which an overage of a threshold is detected ahead of time by trend monitoring.

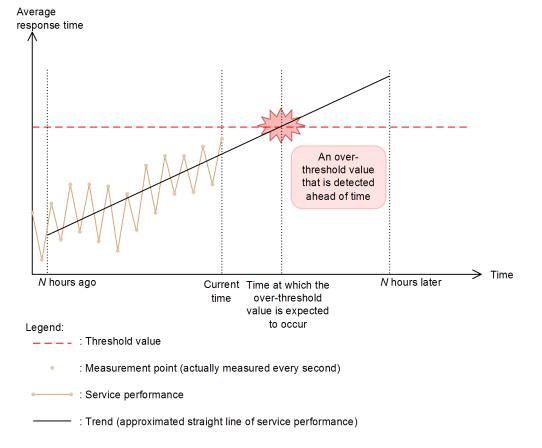


Figure 3-15: Example in which an overage of a threshold is detected ahead of time

This example monitors average response time. The trend is calculated from the past *N* hours of service performance. A warning sign is detected if the service performance is predicted to exceed the threshold within the next *N* hours.

To obtain a trend for predicting an overage of a threshold within N hours, N hours' worth of service performance is required. This reduces the error associated with a long period of trend monitoring. To predict an overage of a threshold during the next hour, one hour's worth of service performance is required.

The approximated straight line is updated every 60 seconds and each time this occurs a check is performed to see if an overage of the threshold might occur. If an overage of the threshold is predicted, a warning is displayed in the window.

The following shows an example of a warning displayed in the window.



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The information displayed in the window includes a warning icon, the detection date and time, the time at which service performance is predicted to exceed the threshold, the name of the service group subject to the warning, and the service name. If the trend keeps exceeding the threshold, a warning is displayed only the first time the trend is detected. You can view the service performance leading up to and following the point of the warning as a graph.

The following shows an example of a graph that is displayed.

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In the graph, a warning icon is displayed indicating the time when a value that exceeded the trend threshold was detected. Also, a yellow band is displayed indicating the time when service performance is predicted to exceed the threshold and the time when a value that exceeded the trend threshold was detected.

To run trend monitoring, you must specify the following items in the Settings window:

• Threshold

• Reference time for calculating trends

#### Threshold

Specifies the reference threshold that is to be used to determine the status of the monitored service.

Reference time for calculating trends

Specifies N hours as the reference time for calculating trends. N hours are used as follows:

- A trend is calculated on the basis of the past N hours of service performance.
- A warning sign is detected if an overage of a threshold is predicted to occur within *N* hours from the present time.

#### When linking with Performance Management

If you link SLM with Performance Management, you can also run trend monitoring for system performance. In trend monitoring for system performance, there are two types of monitoring items:

- Monitoring item to be reported when it exceeds the threshold
- Monitoring item to be reported when it drops below the threshold

You can determine which type applies to a monitoring item by checking the **Monitor settings** area in the Settings window. If the icon in the **Threshold** column is  $\mathbf{T}$ , the monitoring item is reported when it exceeds the threshold. If the icon in the **Threshold** column is  $\mathbf{I}$ , the monitoring item is reported when it drops below the threshold.

## (2) Detection criteria

In trend monitoring, a warning is detected if the calculated trend is flat or uptrending and satisfies one of the following conditions:

• The trend is currently already above the threshold

The time that is displayed in **Details** for the reported warning event is the current time.

• The trend indicates that the threshold will be reached or exceeded within *N* hours The time that is displayed in **Details** for the reported warning event is the time the overage of the threshold is predicted to occur.

The value of N is specified in the Settings window.

For details about how to specify numeric values in the Settings window, see 3.2.9 Setting up the monitoring items for service performance.

In the case of a downward trend, no warning is detected even if the current trend exceeds the threshold because such a trend might be indicative of recovery.

To maintain accuracy, a trend is calculated only when a condition is satisfied. The criteria for calculating a trend when service performance is being monitored differs from when system performance is being monitored. The following explains both cases.

#### When service performance is monitored

A trend is calculated when the following condition is satisfied:

• Total amount of time over the past N hours during which service performance was collected (seconds)  $\ge N \times 3,600 \times 30 \div 100$  (seconds)

For example, if the value of N is 5,  $5 \times 3,600 \times 30 \div 100 = 5,400$  (seconds), which is 90 minutes. If at least 90 minutes' worth of service performance has been collected, a trend is calculated and trend monitoring is run.

<sup>3.</sup> Monitoring the Services to Be Monitored and Setup Required for Monitoring

#### When system performance is monitored

A trend is calculated when the following criteria are both satisfied:

- Total amount of time over the past N hours during which service performance was collected (seconds)  $\ge N \times 3,600 \times 30 \div 100$  (seconds)
- At least two performance data items have been collected during the past N hours.

For example, if the value of N is 5,  $5 \times 3,600 \times 30 \div 100 = 5,400$  (seconds), which is 90 minutes. If at least 90 minutes' worth of service performance has been collected and at least two performance data items have been collected, a trend is calculated and trend monitoring is run.

## (3) Criteria for determining that performance has returned to normal

This subsection explains the criteria for determining that performance has returned to normal.

Monitoring items for upper-limit threshold value

If any of the following conditions is true, the trend monitoring status returns to normal.

- The trend will no longer exceed the threshold N hours from now.
- The trend is downtrending.
- The trend is currently below the threshold and will no longer exceed the threshold in the next N hours.

Monitoring items for lower-limit threshold value

If any of the following conditions is true, the trend monitoring status returns to normal.

- The trend will no longer exceed the threshold N hours from now.
- The trend is uptrending.
- The trend is currently above the threshold and will no longer be below the threshold in the next N hours.

The value of N is specified in the Settings window.

For details about how to specify numeric values in the Settings window, see 3.2.9 Setting up the monitoring items for service performance.

Note that a monitored service is placed in warning status when a warning is reported for it in SLM's Home or Real-time Monitor window, and such a monitored service will remain in warning status until it recovers to normal status. A trend monitoring notification for the same monitoring item for the same monitored service is suppressed. Therefore, when an overage of a threshold is detected by trend monitoring, the warning status remains displayed for at least 60 seconds after the notification.

## (4) Supplementary information

- If an overage of a threshold is currently already detected by threshold value monitoring, it will not be detected by trend monitoring.
- The following service performance is not used for calculation of a trend:
  - If monitoring was stopped once and restarted within *N* hours, the service performance existing before monitoring was restarted
  - Service performance when throughput was 0, for the average response time displayed in trend monitoring

The value of N is specified in the Monitor settings area of the Settings window.

For details about how to specify numeric values in the Settings window, see 3.2.9 Setting up the monitoring items for service performance.

<sup>3.</sup> Monitoring the Services to Be Monitored and Setup Required for Monitoring

- If service performance data that is not used for trend monitoring continues to exist after a warning was detected, such as when a condition where throughput and average response time are both 0 continues after an overage of a threshold was detected by trend monitoring for average response time, it might take time for the monitored service resulting in the warning to return to its normal status because there is no additional data to change the trend.
- If the value of *N* specified in the Monitor settings window is less than the collection interval for that monitoring item, the required number of performance data items (minimum of two) cannot be acquired within the trend monitoring time even if trend monitoring is set to be run. In such a case, trend monitoring is not run because an approximated straight line cannot be created.

## (5) Related topics

- 3.2.9 Setting up the monitoring items for service performance
- 4.3.1 Checking the status of the monitored services of all service groups

## 3.1.4 Using threshold value monitoring for detection of threshold overages

Threshold value monitoring monitors each monitoring item. For details about the monitoring items, see 3.1.1 SLM's monitoring methods and types of monitored targets.

This subsection explains threshold value monitoring.

## (1) About threshold value monitoring

Threshold value monitoring detects an overage of the threshold set for the performance of a monitored service.

If an SLO has been defined, you can detect an overage of the SLO value by specifying the SLO value as the threshold. If no SLOs have been defined, you can detect an overage of some criterion assumed for service performance by specifying for the threshold a value representing the criterion.

The following shows an example in which an overage of a threshold is detected by threshold value monitoring.

Figure 3-18: Example in which an overage of a threshold is detected

Average response time	
	An over-threshold value that is detected when the threshold is exceeded
Legend:	> Time
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: Service performance	ce de la constante de la consta

This example monitors average response time. As time passed, the service performance value increased until an overage of the threshold was detected.

When an overage of a threshold is detected, an error is displayed in the window.

<sup>3.</sup> Monitoring the Services to Be Monitored and Setup Required for Monitoring

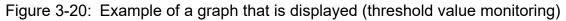
The following shows an example in which an error is displayed in the window.

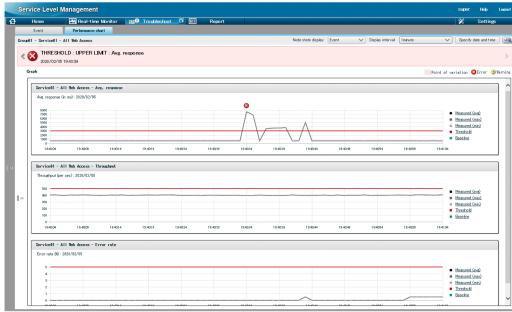
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Figure 3-19: Example in which an error is displayed in the window (threshold value monitoring)

The information displayed in the window includes an error icon, the detection date and time, the name of the service group subject to the error, and the service name. If service performance keeps exceeding the threshold, an error is displayed only the first time overage of the threshold is detected. You can view the service performance leading up to and following the displayed error in a graph.

The following shows an example of a graph that is displayed.





In the graph, an error icon indicates the time the threshold was exceeded and a colored bar indicates the time period during which the event resulting in the overage of the threshold is assumed to have occurred.

To run threshold value monitoring, you must specify the following item in the Settings window:

<sup>3.</sup> Monitoring the Services to Be Monitored and Setup Required for Monitoring

Threshold

Specifies the reference threshold that is to be used to determine the status of the monitored service.

#### When linking with Performance Management

If you link SLM with Performance Management, you can also run threshold value monitoring for system performance. In threshold value monitoring for system performance, there are two types of monitoring items:

- Monitoring item to be reported when it exceeds the threshold
- Monitoring item to be reported when it drops below the threshold

You can determine which type applies to a monitoring item by checking the **Monitor settings** area in the Settings window. If the icon in the **Threshold** column is  $\mathbf{T}$ , the monitoring item is reported when it exceeds the threshold. If the icon in the **Threshold** column is  $\mathbf{I}$ , the monitoring item is reported when it drops below the threshold.

## (2) Detection criteria

In threshold value monitoring, an overage of the threshold is detected if the overage persists, so as to avoid detecting a transient overage of the threshold. This subsection explains the criteria for detecting an overage of the threshold when service performance is monitored and when system performance is monitored.

#### When service performance is monitored

The detection criteria depend on the service performance measurement count per 60 seconds and the sloThresholdRate property value specified in SLM - Manager's system definition file

(jplitslm.properties). The sloThresholdRate property value is applied to threshold value monitoring for all monitored services.

For details about editing the system definition file, see 5.6.1 Editing the system definition files.

The following table describes the relationship between the sloThresholdRate property value and the behavior of threshold value monitoring

Table 3-5: Relationship between	sloThresholdRate property value and the behavior of
threshold value monite	oring

No.	sloThresholdRate property value (n)	Behavior of threshold value monitoring
1	1	An overage of the threshold is detected when service performance exceeds the threshold even once. When service performance no longer exceeds the threshold, it is determined to have returned to normal.
2	2 to 98	An overage of the threshold is detected when service performance exceeds the threshold $S \times n \div 100$ times (rounded up) in 60 seconds. When the number of times service performance exceeds the threshold is less than $S \times n \div 100$ times (rounded up) in 60 seconds, service performance is determined to have returned to normal.
3	99 to 100	An overage of the threshold is detected when service performance continues to exceed the threshold for 60 seconds. When service performance falls below the threshold even once, it is determined to have returned to normal.

Legend:

S: Number of times service performance is measured in 60 seconds

*n*: sloThresholdRate property value specified in SLM - Manager's system definition file (jplitslm.properties)

<sup>3.</sup> Monitoring the Services to Be Monitored and Setup Required for Monitoring

#### When system performance is monitored

The detection criterion is the number of the most recent measurements that exceed a specified value that generates an event. The number of times exceeded and the number of times measured are specified in **Occurrence frequency** under **SLO monitor settings** in the **Monitor settings** area of the Settings window. The following table describes the correspondence between the settings and the criterion for detecting an overage beyond the threshold.

No.	Occurrence frequency settings	Criterion for detecting an excess beyond the threshold
1	1 is specified for both times exceeded and times measured	An overage of the threshold is detected when performance data for the current time exceeds the threshold.
2	A value other than 1 is specified for either times exceeded or times measured or both	<ul> <li>An overage of the threshold is detected when the following conditions are both satisfied:</li> <li>Performance data for the current time exceeds the threshold.</li> <li>The specified number of measurements exceed the threshold more times than specified. If the measurement acquisition count is less than the specified measurement count, the performance data has already exceeded the threshold more times than specified.</li> </ul>

Table 3-6: Criterion for detecting an overage of the threshold

The following notes apply to evaluating detection of overages of the threshold:

- Once a notification is sent, no more notifications are sent until the status returns to normal even if the conditions are satisfied again.
- When monitoring is stopped, the measurement acquisition count and the number of times an overage of the threshold occurred are initialized to 0. When monitoring is restarted, no previous measurement values obtained before monitoring was stopped are used for new detection.
- If no measurement value was obtained at a given time due to an error, that time is ignored and as many available most recent measurement values as needed for the specified detection are used.

### (3) Criteria for determining that performance has returned to normal

This subsection explains for service performance and for system performance the criteria for determining that performance has returned to normal since it exceeded the threshold.

#### When service performance is monitored

Performance is determined to have returned to normal when service performance did not exceed the threshold more than  $S \times n \div 100$  times (rounded up) for the past 60 seconds.

*S* indicates the number of times service performance was measured in 60 seconds. *n* indicates the sloThresholdRate property value specified in SLM - Manager's system definition file (jplitslm.properties).

For details about editing the system definition file, see 5.6.1 Editing the system definition files.

For example, if S is 60 and n is 10, performance is determined to have returned to normal when the number of times service performance exceeded the threshold is less than 6. Recovery of performance is not detected from transient values that are smaller than the threshold.

#### When system performance is monitored

The criterion for determining that performance has returned to normal after exceeding the threshold depends on the value specified in **Occurrence frequency** for the monitored service under **SLO monitor settings** in the **Monitor settings** area of the Settings window.

For details about setting **Occurrence frequency** under **SLO monitor settings**, see 3.2.10 Setting up the monitoring items for system performance (working with Performance Management).

The following table explains the correspondence between the specifiable values and the criterion for determining that performance has recovered.

## Table 3-7: Criterion for determining that performance has returned to normal after it exceeded<br/>the threshold

No.	Occurrence frequency values	Criterion for determining recovery
1	1 is specified for both $M$ and $N$	Performance is determined to have returned to normal when the performance data for the current time does not exceed the threshold.
2	A value other than 1 is specified for either $M$ or $N$ or for both	Performance is determined to have returned to normal when the number of times the most recent $M$ measurement values exceeded the threshold is less than $N$ .
		When the measurement acquisition count is less than $M$ , performance is determined to have returned to normal if the number of times all the measurement values obtained so far exceeded the threshold is less than $N$ .

Legend:

*M*: Number of measurements taken as specified for **Occurrence frequency** (measured) under **SLO monitor** settings

*N*: Number of times a measured value is allowed to exceed the limit as specified for **Occurrence frequency** (Times exceeded) under SLO monitor settings

Recovery is determined when the values of the reported monitoring items are updated. Therefore, determination of recovery takes place in the interval during which information about the corresponding monitoring item is acquired.

You can check the recovery status in the Home or Real-time Monitor window. For details about how to check the Home window, see 4.3.1 Checking the status of the monitored services of all service groups. For details about how to check the Real-time Monitor window, see 4.3.2 Checking the status of the monitored services in a specific service group.

## (4) Supplementary information

- Threshold value monitoring for service performance begins 60 seconds after SLM UR collects the first service performance data after monitoring starts.
- Threshold value monitoring for system performance begins immediately after PFM Agent or PFM RM collects the first system performance data after monitoring starts.

## (5) Related topics

- 3.2.9 Setting up the monitoring items for service performance
- 3.2.10 Setting up the monitoring items for system performance (working with Performance Management)
- 4.3.1 Checking the status of the monitored services of all service groups

## 3.1.5 Using availability monitoring for checking the availability of services (working with Performance Management)

Availability monitoring is supported when SLM is linked with Performance Management.

This subsection explains availability monitoring.

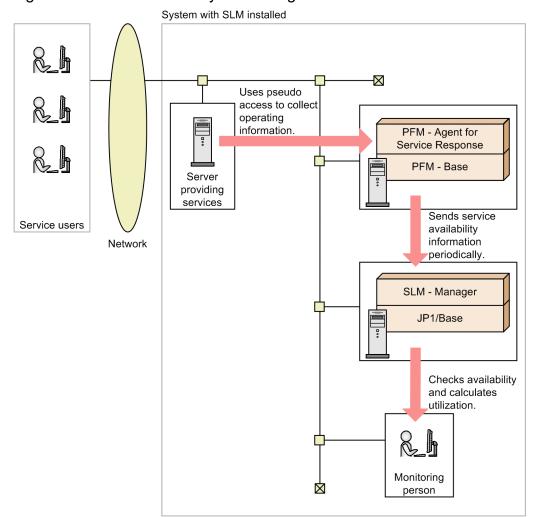
## (1) About availability monitoring

Availability monitoring is a method for checking whether monitored services are running smoothly.

PFM - Agent for Service Response is used for monitoring the availability of monitored services. You can monitor the availability of monitored services even when no users are accessing them.

<sup>3.</sup> Monitoring the Services to Be Monitored and Setup Required for Monitoring

The following figure shows how availability monitoring works.



#### Figure 3-21: How availability monitoring works

You can check the current availability of services in the Home window or the Real-time Monitor window. If a monitored service has stopped, an error is displayed in these windows. The following shows an example in which an error is displayed in a window.



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## (2) Availability items that can be output to reports

For the monitored services whose availability is being monitored, you can output *availability items* to reports. The availability items are metrics used to evaluate availability. Availability monitoring enables you to output the following availability items to reports:

- Service availability
- MTTR (mean time to recovery)
- MTBF (mean time between failures)

The following table provides details about the availability items that can be output to reports by availability monitoring.

Table 3-8: Definition of availability if	items a	and fo	rmulas
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No.	Evaluation metric (SLO)	Definition	Formula
1	Service availability	Percentage of the time during the report interval that the service was running	Service availability (%) = $A \div (A + B) \times 100$ A = Total operational period during the report interval (minutes) B = Total error period during the report interval (minutes)
2	MTTR (mean time to recovery)	Average time required from the occurrence of an error to recovery from the error during the report interval	Mean time to recovery (minutes) = $B/C$ B = Total error period during the report interval (minutes) C = Number of times errors occurred during the report interval
3	MTBF (mean time between failures)	Average time from one error recovery to the occurrence of the next error during the report interval	Mean time between failures (minutes) = $A/C$ A = Total operational period during the report interval (minutes) C = Number of times errors occurred during the report interval

#### Legend:

Report interval: Total length of time subject to reporting that is obtained from the start time and period entered by the user in the **Report** area of the Report window.

Operational period: Period from the time normal operation of the monitored service was verified to the time a stoppage of the monitored service was detected or monitoring was stopped.

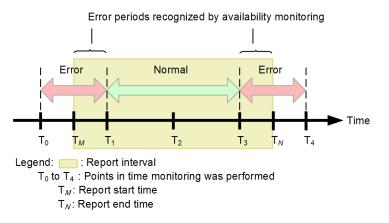
Error period: Period from the time a stoppage of the monitored service was detected to the time normal operation of the monitored service was verified or monitoring was stopped

The following explains for three cases how availability items are calculated by availability monitoring.

• Case where the monitored service is stopped at the time reporting begins or at the time reporting ends If the time the monitored service stopped due to an error was before the report start time, the report start time is used as the time the monitored service stopped for purpose of calculating the availability items.

If a stopped monitored service is still stopped at the report end time, the report end time is used as the time the monitored service stopped for purpose of calculating the availability items.

The following figure shows an example in which the monitored service is already stopped at the report start time and is stopped at the report end time.



The availability items for this example are calculated as follows:

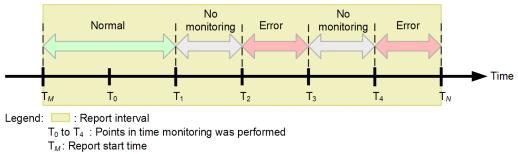
Service availability =  $(T_3 - T_1)/\{(T_3 - T_1) + (T_1 - T_M) + (T_N - T_3)\}$ =  $(T_3 - T_1)/(T_N - T_M)$ Mean time to recovery =  $\{(T_1 - T_M) + (T_N - T_3)\}/2$ Mean time between failures =  $(T_3 - T_1)/2$ 

Case where the report interval contains periods of time during which monitoring is not performed

If the report creation interval contains within it periods of time during which monitoring is not performed, those periods are not included in the calculation of availability items because availability is not checked during those periods.

If an error period contains within it a period of time during which monitoring is not being performed, that error period is treated as two error periods separated by the interval when monitoring was not being performed.

The following figure shows an example in which the report interval contains periods of time during which monitoring is not performed.



T<sub>N</sub>: Report end time

The availability items for this example are calculated as follows: Service availability =  $(T_1 - T_M)/\{(T_1 - T_M) + (T_3 - T_2) + (T_N - T_4)\}$ 

<sup>3.</sup> Monitoring the Services to Be Monitored and Setup Required for Monitoring

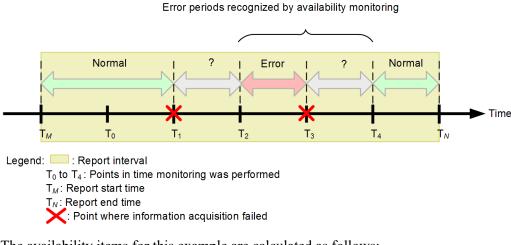
Mean time to recovery =  $\{(T_3 - T_2) + (T_N - T_4)\}/2$ 

Mean time between failures =  $(T_1 - T_M)/2$ 

• Case where the report interval contains periods of time during which information acquisition failed

If availability information cannot be acquired for a period of time during monitoring because a communication error occurred or because PFM - Agent for Service Response was not running, the availability acquired from PFM - Agent for Service Response immediately before the interval for which there is no availability information is assumed to continue.

The following figure shows an example in which the report interval contains periods of time during which information acquisition failed:



The availability items for this example are calculated as follows:

Service availability =  $\{(T_2 - T_M) + (T_N - T_4)\}/\{(T_2 - T_M) + (T_N - T_4) + (T_4 - T_2)\}$ Mean time to recovery =  $(T_4 - T_2)/1$ 

Mean time between failures =  $\{(T_2 - T_M) + (T_N - T_4)\}/1$ 

## (3) Reporting criteria

When a monitored service that is subject to availability monitoring is stopped, an error is reported. If either of the following criteria is satisfied, the monitored service is treated as being stopped:

- An error was in effect at the time of the first measurement result obtained after monitoring started.
- The previous measurement result was normal and an error had occurred by the time of the measurement result for the current time.

If monitoring is stopped, the measurement results that have been obtained so far are reset. Therefore, if monitoring stops while the monitored service is stopped and an error occurs in the measurement result obtained after monitoring is restated, the error notification indicates that another monitored service has stopped.

## (4) Criteria for determining that performance has returned to normal

If both the following criteria are satisfied, the monitored service is determined to have recovered from the stoppage and returned to normal:

- An error had occurred at the time of the previous measurement result.
- The measurement result for the current time is normal.

If monitoring is stopped, the measurement results that have been obtained so far are reset. Therefore, if monitoring stops while the monitored service is stopped, recovery is not reported even if the measurement result obtained after monitoring is restarted is normal.

## (5) Supplementary information

• When PFM - Agent for Service Response is used for monitoring, a stoppage of a monitored service is reported whether it was caused by an error or by planned termination, because the difference between these two causes cannot be distinguished.

Therefore, stop the monitoring before you perform planned termination on a monitored service that is being monitored for availability.

• Availability monitoring starts immediately after availability information is received from PFM - Agent for Service Response. If monitoring of a target service is stopped before availability information is received for the first time after monitoring started, availability monitoring is treated as not having started during that period. In such a case, information about the start and stop of the monitored service is not output to the service availability overview in the report.

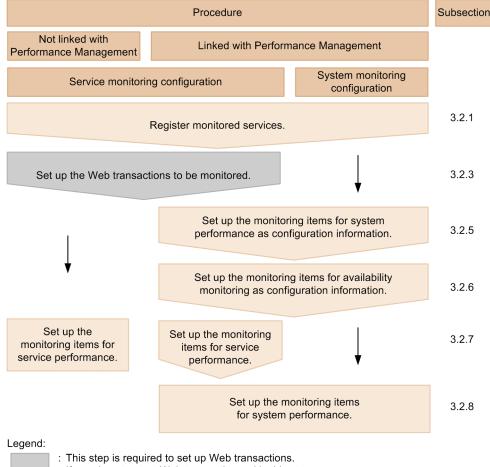
## (6) Related topics

- 3.2.7 Setting up the monitoring items for system performance as configuration information (working with Performance Management)
- 4.3.1 Checking the status of the monitored services of all service groups
- 4.3.2 Checking the status of the monitored services in a specific service group

## 3.2 How to register monitored services and set up monitoring items

The setup procedure required for monitoring Web transactions differs when monitoring is linked with Performance Management. The following figure provides an overview of the procedure.

Figure 3-23: Procedure for registering monitored services and setting up monitoring items



If you do not set up Web transactions, skip this step.

## 3.2.1 Registration destination of monitored services

The registration destinations of monitored services differ depending on the configuration of SLM - Manager and the system configuration.

For the single-manager configuration

The monitored services are registered to SLM - Manager.

For the master/slave configuration combined with a service monitoring configuration

The monitored services are registered to the instance of SLM - Manager to link with the instance of SLM - UR used by the monitored services being registered.

For a master/slave configuration combined with a system monitoring configuration

The monitored services are registered to the slave instances of SLM - Manager for which the following number is the smallest:

• (Number of monitored services) + (Number of Web transactions  $\times$  20) + (Number of monitor items)

When the number of monitored services registered with the slave instances of SLM - Manager has reached the upper limit on all devices, the monitored services are registered to the master instance of SLM - Manager.

For details on registering a service upon specifying an instance of SLM - Manager, see 9.6 jslmmgrconfig (setting a monitored service) in 9. Commands.

### Important

- The system definitions of monitored targets are defined per instance of SLM Manager. In addition, the monitored services will operate based on the system definitions of the instance of SLM Manager to which they are registered. For this reason, if there is a problem with the system definitions, change the system definitions or change the instance of SLM Manager to which the monitored services are registered. For the procedures for changing the system definitions, see 5.6.1 Editing the system definition files. For the procedures for changing the registration destination of a monitored service, see 3.2.3 Changing the registration destination of a monitored service.
- When registering a monitored service of a service monitoring configuration by using a master/slave configuration, registration of the monitored service will fail if the instance of SLM UR that will be monitoring the monitored service being registered has not been started. For details on registering a monitored service of a service monitoring configuration while an instance of SLM UR is stopped, see 9. Commands, 9.6 jslmmgrconfig (setting a monitored service).

## 3.2.2 Registering monitored services

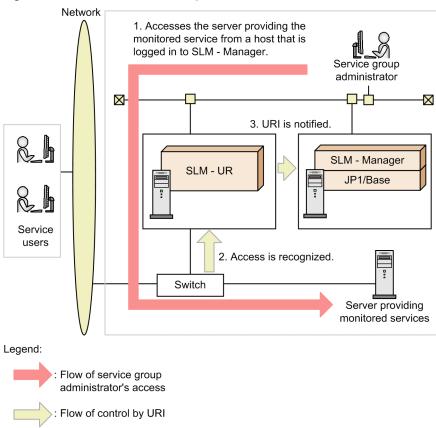
To add a monitoring-target service, register the URI of the service Web page in SLM - Manager. This URI is detected automatically when you access the monitored service's Web page from a host that is logged in to SLM - Manager. The detection results are displayed in the SLM - Manager window.

A maximum of 50 monitored services can be registered into SLM - Manager, including All Web Access and Web transactions.

Note that you cannot combine services monitored by multiple SLM - URs and monitor them as a single service.

The following figure shows the procedure for detecting URIs.

#### Figure 3-24: URI detection procedure



- 1. Access the Web page that you want to detect as a monitored service from a host that is logged in to SLM Manager.
- 2. Access to the monitored service is recognized by SLM UR.
- 3. The detected URI is reported to SLM Manager.

#### Note

In the master/slave configuration, monitored services will be detected from all instances of SLM - UR that are linked with master or slave instances of SLM - Manager.

## (1) Before you start

- Verify that you have the service group administrator permissions.
- Log in to SLM Manager.

For details about how to log in, see 2.2.1 Logging in to SLM - Manager.

• Verify that you can access the Web page of the monitored service that you want to register from a host that is accessing SLM - Manager.

## (2) Procedure

The following shows the Settings window used in this procedure.

<sup>3.</sup> Monitoring the Services to Be Monitored and Setup Required for Monitoring

Servic Level Man		평 <sup>9</sup> Troubleshoot E	II Report		💥 Settings	
Setting menu	Add/Delete monitor				No Octango	
Add/Delete monitor Web transaction setting	New service Source IP 10.196.157.18	Start detection Status Stopped	d   Add line		Monitor configuration Service V	_ s
Configuration information settings Monitor settings	Service group	Service	URI	Web server IP	SLM - UR IP	
Start/Stop monitor	Group01	Service05	172.17.2.234/	172.17.2.234	172.17.2.234	
Services	Group03	✓ Service06	172.17.2.234/	172.17.2,234	172.17.2.234	
Show all						- ( :
- Group01						
+ Service01						
- Group02 + Service02	Registered services				Registration	- ( 5
+ Service04	Service group	Service	UFI	Web server IP	SLM - UR IP	
= Group 03	Group01	Service01	172.17.2.234/	172.17.2.234	172.17.2.234	
+ Service03 Group 04	Group02	Service02	172.17.2.234/	172.17.2.234	172.17.2.234	-(;
Choppe	Group02	Service04	172.17.2.234/	172.17.2.234	172.17.2.234	
	Group03	Service03	172.17.2.234/	172.17.2.234	172.17.2.234	
						-( :
					Delete	
						- 5

To register a monitored service:

- 1. Click the **Settings** button.
- 2. In the Setting menu area, select Add/Delete monitor.

The Add/Delete monitor area is displayed. In the Add/Delete monitor area, Source IP displays the IP address of the current computer (which is accessing SLM via its browser).

If there are already any registered monitored services, the display in **Registered services** shows for each one its service group name, the name of the monitored service, its URI, its Web server's IP address, and the IP address of SLM - UR.

3. Select Monitor configuration.

Select one of the following as the new service's monitoring configuration:

Service: Monitors both service performance and system performance.

System: Monitors system performance only.

4. Click the Add line button.

A blank line is added to New service.

5. Enter information about the monitored target.

To add a line for a service whose monitoring configuration is **Service**, enter the URI in **URI**, the IP address of the Web server running the monitored service in **Web server IP**, and the IP address of SLM - UR in **SLM - UR IP**.

6. Enter a name for the monitored service.

Click the Service text box and enter any desired name.

If an input rule is violated, an error message is displayed. Although no error message is displayed when platformdependent characters or control characters are used, do not use these characters because they might cause an erroneous display of log files.

7. Select the service group to which the monitored service belongs.

Clicking the **Service group** pull-down menu displays the names of service groups (JP1 resource group names registered in JP1/Base) that the login user is responsible for monitoring. Select the service group to which the monitored service belongs.

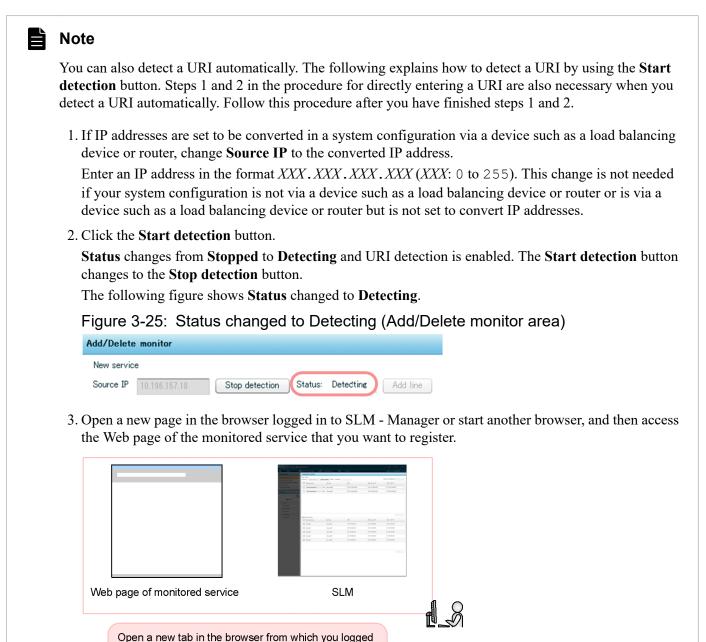
8. Select the monitored service that you want to register.

If the entered values are correct and **Status** shows **Stopped**, selecting the check box for a monitored service enables the **Registration** button. Note that if no service group was selected in step 7, an error message is displayed.

#### 9. Click the **Registration** button.

If registration is successful, a dialog box reporting that the monitored service has been registered successfully is displayed.

When you click the OK button in the dialog box, the service is added to Registered services.



In this case, make sure that you leave the browser that is logged in to SLM - Manager as is and open a new page or start another browser.

The monitored service detected by accessing its Web page is added to **New service** and the monitored service name, URI, IP address of the Web server running the monitored service, and the IP address of SLM - UR that performed this detection are displayed in **Service**, URI, Web server IP, and SLM - UR IP.

3. Monitoring the Services to Be Monitored and Setup Required for Monitoring

in to SLM - Manager, or start another browser.

During detection, the URI is displayed as the monitored service name in **Service**. If the URI consists of more than 65 characters, only the first 65 characters are displayed and the remainder is discarded. Each time a different Web page is accessed, a new monitored service is added. A URI that has already been detected is not added.

Note that any URIs for which a loopback address was specified, or for which localhost was specified as the host name, will not be displayed as monitored services.

4. Once the service you want to register has been detected, click the **Stop detection** button.

Status changes from Detecting to Stopped once detection is complete.

The following figure shows **Status** that has changed to **Stopped**.

Figure 3-26: Status changed to Stopped (Add/Delete monitor area)

Add/Delete	monitor	
New servic	e	
Source IP	10.196.140.43	Start detection Status: Stopped Add line

- 5. If you want to edit the URI displayed in **URI**, the IP address of the Web server running the monitored service that is displayed in **Web server IP**, or the IP address of SLM UR that is displayed in **SLM UR IP**, select the corresponding text box and then edit the information.
- 6. Enter a name for the monitored service.

Click the **Service** text box and enter any desired name.

If an input rule is violated, an error message is displayed. Although no error message is displayed when platform-dependent characters or control characters are used, do not use these characters because they might cause an erroneous display of log files.

7. Select the service group to which the monitored service belongs.

Clicking the **Service group** pull-down menu displays the names of service groups (JP1 resource group names registered in JP1/Base) that the login user is responsible for monitoring. Select the service group to which the monitored service belongs.

8. Select the monitored service that you want to register.

If the entered values are correct and **Status** shows **Stopped**, selecting the check box for a monitored service enables the **Registration** button. Note that if no service group was selected in step 7, an error message is displayed.

9. Click the **Registration** button.

If registration is successful, a dialog box reporting that the monitored service has been registered successfully is displayed.

When you click the **OK** button in the dialog box, the service is added to **Registered services**.

### (3) Next task

- 3.2.5 Setting up the Web transactions to be monitored (when monitoring Web transactions)
- 3.2.7 Setting up the monitoring items for system performance as configuration information (working with Performance Management) (working with Performance Management)
- 3.2.9 Setting up the monitoring items for service performance (when Web transactions are not monitored or when not working with Performance Management)

## (4) Related topics

- 3.2.3 Changing the registration destination of a monitored service
- 3.2.4 Deleting monitored services
- 4.3.1 Checking the status of the monitored services of all service groups
- 4.3.2 Checking the status of the monitored services in a specific service group
- 4.4.1 Checking the timing of an event causing an error or warning
- 5.2 User settings in SLM
- (3) Services area in 10.1.2 Common items on all windows
- 10.6.1 Configuration of the Settings window
- 10.6.3 Setting menu area
- 10.6.4 Add/Delete monitor area

## 3.2.3 Changing the registration destination of a monitored service

This section explains how to re-register an already registered monitored service to a different instance of SLM - Manager.

## (1) Procedure

- Execute the jslmmgrls command from the master instance of SLM Manager and confirm that the instance of SLM - Manager to which the monitored service, for which the registration destination will be changed, is registered. For details about the jslmmgrls command, see 9.11 jslmmgrls (confirming the system management status of SLM - Manager) in 9. Commands.
- Execute the jslmmgrexport command with the instance of SLM Manager that was confirmed in step 1, and export the monitored service for which the registration destination is to be changed.
   For details about the jslmmgrexport command, see 9.9 jslmmgrexport (exports service monitor information) in 9. Commands.
- 3. Use the dashboard to delete the monitored service whose registration destination you want to change.
- 4. Execute the jslmmgrimport command with the instance of SLM Manager at the new registration destination and register the monitored service exported in step 2 in SLM Manager. For details about the jslmmgrimport command, see 9.10 jslmmgrimport (imports service monitor information)
  - in 9. Commands.

## 3.2.4 Deleting monitored services

## (1) Before you start

- Verify that you have the service group administrator permissions.
- Log in to SLM Manager.
   For details about how to log in, see 2.2.1 Logging in to SLM Manager.
- Verify that monitoring of the monitored service to be deleted has stopped. For details about how to stop monitoring, 4.2.2 Stopping monitoring.

## (2) Procedure

The following shows the Settings window used in this procedure:

Setting menu       Add/Delete monitor         Hold bransaction witting Configuration information setting Services       New service Service       Monitor configuration [Status]         Services       URI       Web server IP       SLM - URIP         Services       URI       Web server IP       SLM - URIP		Management				user Help
Add/Delate monitor       New service       Monitor configuration         Oringeration information setting:       Surve IP       IO.1990.157.18       Start detection         Start/Stop monitor       Service       URI       Web server IP       SLM - URIP         Services       Service       URI       Web server IP       SLM - URIP         Services       Service       URI       Web server IP       SLM - URIP         Services       Service       URI       Web server IP       SLM - URIP         Services       Service       URI       Web server IP       SLM - URIP         Services       Services       URI       Web server IP       SLM - URIP         Services       Services       URI       Web server IP       SLM - URIP         Services       Services       URI       Web server IP       SLM - URIP         Group01       Service01       172.172.284/       172.172.284       172.172.284         Group02       Service04       172.172.284/       172.172.284       172.172.284			9 Troubleshoot 🛛 🗐	Report		💥 Settin
Surve II       Group01       Service or cop       Service       URI       Web server IP       SLM - URI P         Bitref discription and the Group01       Service or cop       Service       URI       Web server IP       SLM - URI P         Bitref discription and the Group01       Service or cop       Service       URI       Web server IP       SLM - URI P         Bitref discription and the Group01       Service or cop       Service       URI       Web server IP       SLM - URI P         Bitref discription and the Group01       Service or cop       Service       URI       Web server IP       SLM - URI P         Croup01       Service or cop         Croup01       Service or cop       Service 01       172:17:224/       172:17:224/       172:17:224/         Croup02       Service 04       172:17:224/       172:17:224/       172:17:224/       172:17:224/	Setting menu					
Monifor setting:         Data         Data         Data         Data           Start/Stop monitor         Services         Services			Start detection Status Stopped	Add line		Monitor configuration Ser
Start/Stop monitor           Services           Oncod1           - Group01           - Service10           - Group02           * Service10           - Group02           * Service10           - Group01           * Service10           - Group02           Service or cop         Service         URI         Web server 1P         SLM - UR1P           - Group01         Service or cop         Service11         172.172.224/         172.172.224         172.172.224           - Group02         Service04         172.172.234/         172.172.234         172.172.234		Service group	Service	URI	Web server IP	SLM - UR IP
Services           - Group[1]           - Group[2]           + Service[3]           - Group[2]           + Service[3]           - Group[2]           + Service[3]           - Group[2]           + Service[3]           - Group[2]						
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Group04         Orcupit2         Service02         172.17.2284/         172.17.2284         172.17.2284           Orcupit2         Service04         172.17.2284/         172.17.2284/         172.17.2284         172.17.2284	and a second		ServiceUI	172.17.2.284/	172.17.2.284	172.17.2.284
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Group03 Service03 172.172.294/ 172.172.294 172.172.294		Group02	Service04	172.17.2.234/	172.17.2.234	172.17.2.234
		Group03	Service03	172.17.2.234/	172.17.2.234	172.17.2.234

To delete a monitored service:

- 1. Click the **Settings** button.
- 2. In the Setting menu area, select Add/Delete monitor.

The Add/Delete monitor area is displayed. The following items are displayed in **Registered services** for each monitored service: the name of its service group, the name of the monitored service, its URI, the IP address of its Web server, and the IP address of SLM - UR.

3. Select the check box for the monitored service that you want to delete from Registered services.

When you select the check box for a monitored service, the **Delete** button becomes enabled.

4. Click the **Delete** button.

The selected monitored service is deleted from **Registered services**.

## (3) Related topics

- 3.2.2 Registering monitored services
- 3.2.9 Setting up the monitoring items for service performance
- 4.3.1 Checking the status of the monitored services of all service groups
- 4.3.2 Checking the status of the monitored services in a specific service group
- 4.4.1 Checking the timing of an event causing an error or warning
- 5.2 User settings in SLM
- 9.8 jslmmgrdbcleanup (cleans up database)

3. Monitoring the Services to Be Monitored and Setup Required for Monitoring

JP1/Service Level Management Description

- (3) Services area in 10.1.2 Common items on all windows
- 10.6.1 Configuration of the Settings window
- 10.6.3 Setting menu area
- 10.6.4 Add/Delete monitor area

### 3.2.5 Setting up the Web transactions to be monitored

This subsection explains how to set up Web transactions to be monitored. Specify the following three items for a Web transaction:

- Web access conditions (path, query, and cookie conditions)
- Order of Web access conditions
- Session conditions

Web access conditions are used to determine whether the URI and cookie contained in a Web access, which occurs when the user accesses the monitored service, indicate a process that is to be monitored as a Web transaction. Of all the Web accesses to the monitored service, only those that satisfy the Web access conditions are monitored as Web transactions. Session conditions are used to determine whether Web accesses are from the same user.

The service group administrator can set Web access conditions by detecting the URI and cookie from the monitored service or by directly entering the URI and cookie.

If IP addresses are set to be converted in a system configuration via a device such as a load balancing device or router, you must specify the IP address that was converted to the source IP when the URI was detected from the monitored service.

You can register a maximum of 10 Web transactions per monitored service. The maximum number of Web transactions that can be registered for one SLM - Manager is 50 including All Web Access and Web transactions.

## (1) Before you start

- Verify that you have the service group administrator permissions.
- Verify that the monitored service has been registered. For details about how to register monitored services, see 3.2.2 Registering monitored services.
- Verify that monitoring of the monitored service for which Web transactions are to be set up has been stopped. For details about how to stop monitoring, see 4.2.2 Stopping monitoring.

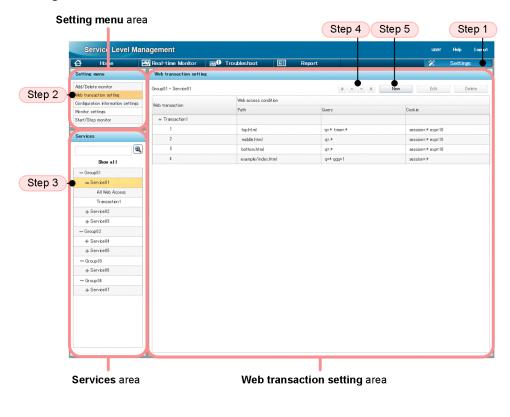
## (2) Procedure

The following shows the procedure:

Task	Step
Specify a Web transaction name.	1 to 6
Add Web access conditions. Select one of these three methods: (1) Load from a URI that was detected automatically. (2) Load from a URI that was entered directly. (3) Enter directly.	For (1) For (2) For (3)
Specify the order of Web access conditions.	18
Specify session conditions.	19
Register.	20

Shown below are the Settings window, Register Web transaction window, Add Web access condition window, Edit cookie window, and Edit query window that are used in this task.

• Settings window



• Register Web transaction window (displayed in a new window when the New button is clicked (step 5))

	Regis	ter	Neb transaction					
			ction name Transaction1				Add condition	Edit condition Delete condition
		#	Path		Query		Cookie	
ep 18		1	top.html		q=.* time=.*		session	n=.* exp=10
	¢	2	middle ht ml		q=.*		session	n=.* exp=10
	\$	3	bottomhtml		q=.*		session	n=.* exp=10
	\$	4	example/index.html		q=.* qqq=1		session	*.=!*
	Sessic Availa		ndition Jerry condition	Query cor	ndition	Available cookie co	ndition	Cookie condition session
				Query cor	ndition	Available cookie co		

• Add Web access condition window (displayed in a new window when the **Add condition** button is clicked (step 7))

Step 8	
Step 10 Step 11	Step 12
Add Web access condition	
Source IP 10.196.140.43 Start detection StatusStopped Add line Delete all available URIs Available URI (in http://xxx.111.hitachi.co.jp/)	Edit cookie
http://xxx.111.hitachi.co.jp/jp1itsim/	
http://xxx.111.hitachi.co.jp/jp1itslm/jp1itslm.jsp	
http://xxx.111.hitachi.co.jp/top.html?q=1&time=2	
Define Web access condition Import Available URI Apply web access Condition Delete all	
Path top.html	
Query q=1 time=2	
Cookie	
	Add condition Close
Step 13 Step 14	Step 15 Step 17

• Edit cookie window (displayed in a new window when the **Edit cookie** button is clicked (step 12) or the **Cookie** text box is clicked (step 14))

Edit cookie	
	Add line Delete
Key	Value
✓ index	0
area	00
	OK Cancel

• Edit query window (displayed in a new window when the Query text box is clicked (step 14))

<sup>3.</sup> Monitoring the Services to Be Monitored and Setup Required for Monitoring

Edit query	
	Add line Delete
Кеу	Value
<b></b> q	1
999	1
	OK Cancel

To set up the Web transactions to be monitored:

- 1. Click the **Settings** button.
- In the Setting menu area, select Web transaction setting. The Web transaction setting area is displayed.
- 3. From the **Services** area, select the monitored service.

When you select a monitored service, the service group name and monitored service name are displayed in the **Web transaction setting** area. Any Web transaction name that has already been set for the monitored service and the Web access conditions for that Web transaction are displayed under **Web transaction** and **Web access condition** in the **Web transaction setting** area. Immediately after the monitored service has been registered, nothing is displayed under **Web transaction** and **Web access condition**.

4. Rearrange the order of the displayed transactions and conditions by using the 🔅 🔺 👻 😻 buttons.

Select the row of the Web transaction that you want to move, and then move the row by clicking the applicable button.

5. Click the New button.

The Register Web transaction window is displayed.

6. Enter a name for a Web transaction.

Enter a name in the Web transaction name text box.

If an input rule is violated, an error message is displayed. Although no error message is displayed when platformdependent characters or control characters are used, these characters might cause erroneous display of log files.

Note that the same transaction name cannot be registered more than once for the same monitored service.

7. Click the **Add condition** button.

The Add Web access condition window is displayed. The **Source IP** text box displays the IP address of the current computer (that is accessing SLM via a browser).

The procedure for adding Web access conditions depends on the addition method:

- To import Web access conditions from a URI that was detected automatically by accessing the monitored service Go to step 8.
- To import Web access conditions from the URI of a monitored service that you entered directly Go to step 11.
- To directly enter Web access conditions Go to step 14.

Specify for the Web access conditions the case-sensitive path, query, and cookie used for actual Web access. SLM monitors the Web accesses that match the specified character string.

Some browsers might convert the case during actual Web access. If the case does not match between the specified Web access conditions and the actual Web access, the Web transaction cannot be monitored.

8. Click the **Start detection** button.

**Status** changes from **Stopped** to **Detecting** and URI detection is enabled. The **Start detection** button changes to the **Stop detection** button.

The following figure shows Status changed to Detecting.

Figure 3-27: Status changed to Detecting (Add Web access condition window)



9. Open a new page in the browser logged in to SLM - Manager or start another browser, and then access the monitored service's Web page.

In this case, make sure that you do not change or close the browser logged in to SLM - Manager and that you open a new page or start another browser.

The URI detected by the access is added to **Available URI**. Each time a different Web page is accessed, a new URI is added. A URI that has already been detected is not added.

10. After the URI has been detected, click the **Stop detection** button.

Status changes from **Detecting** to **Stopped** and detection is complete.

The following figure shows Status that has changed to Stopped.

Figure 3-28: Status changed to Stopped (Add Web access condition window)

Edit Web access condition				
Source IP 10.196.140.43	Start detection	Status:Stopped	Add line	Delete all available URIs

11. To edit a URI displayed under Available URI, select a desired URI and then edit it. You can also add a new URI by adding a blank line.

You can edit any of the URIs displayed under **Available URI** by clicking the URI. You can also add a blank line under **Available URI** and then directly enter a desired URI. To directly enter a URI, click the **Add line** button and then enter the URI on the added line.

12. To check or edit the cookie of a URI displayed under Available URI, select the URI, and then click the Edit cookie button.

The Edit cookie window is displayed. In the Edit cookie window, you can check, add, change, or delete the cookie to be imported to the Web access conditions. Edit the cookie, if necessary, and then click the **OK** button.

13. Select a URI from Available URI and then click the Import Available URI button.

In **Define Web access condition**, you can enter the path, query, and cookie values of the URI selected from **Available** URI all at once.

14. To directly enter or edit Web access conditions, enter or edit the path condition, query condition, and cookie condition in **Define Web access condition**.

If you click the **Apply Web Access Condition** button after you have entered or edited the conditions, there is further refinement of the URIs displayed under **Available URI** and only the URIs that perfectly match the conditions are displayed.

Directly enter the path condition in the text box. Enter query and cookie conditions in the Edit query window and Edit cookie window, respectively, that are opened when you click the corresponding text box.

You can specify multiple query and cookie conditions, but the maximum number of conditions that you can specify is 20 including both query and cookie conditions. When you specify multiple conditions, they are separated by a space and displayed in a random order.

Use the path, query, and cookie conditions to refine URIs so that you can obtain only the URIs of those processes that you want to monitor.

15. While the conditions are showing in **Define Web access condition**, click the **Add condition** button in the Add Web access condition window.

<sup>3.</sup> Monitoring the Services to Be Monitored and Setup Required for Monitoring

The values entered in **Define Web access condition** in the Add Web access condition window are displayed in **Web** access condition in the Register Web transaction window.

16. Repeat the procedure for adding Web access conditions until all the conditions necessary for the Web transactions to be monitored are displayed in **Web access condition**.

The same Web access condition cannot be registered more than once. A maximum of five Web access conditions can be specified for one Web transaction.

17. When you have finished adding Web access conditions, click the Close button.

The Add Web access condition window closes and the Register Web transaction window is displayed again.

18. If necessary, rearrange the order of the Web access conditions by vertically dragging the condisplayed in Web access condition in the Register Web transaction window.

SLM checks the Web accesses against the Web access conditions displayed in **Web access condition** in this order to determine whether they are for the specified Web transactions.

19. If you want to check whether Web accesses are from the same user, specify session conditions.

You can specify session conditions by selecting query and cookie conditions displayed in **Available query condition** and **Available cookie condition**, respectively. Select a candidate to be used as a session condition and then click the > button.

Available query condition and Available cookie condition display the keys of query and cookie conditions that match multiple Web access conditions displayed in Web access condition.

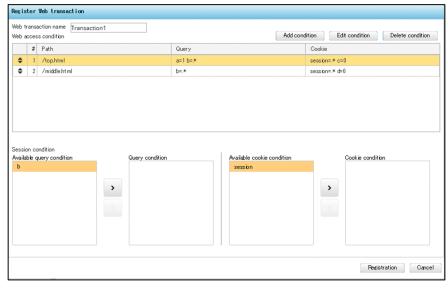
The following shows an example in which the keys of query and cookie conditions that match multiple Web access conditions are displayed.

This example assumes that the following Web access conditions are displayed in Web access condition:

No.	Path	Query condition	Cookie condition
1	/top.html	a=1 b=.*	session=.* c=0
2	/middle.html	b=.*	session=.*d=0

b (the key of b=.\*) is displayed in Available query condition and session (the key of session=.\*) is displayed in Available cookie condition. The following figure shows an example in which Available query condition and Available cookie condition are displayed.

Figure 3-29: Example in which Available query condition and Available cookie condition are displayed



<sup>3.</sup> Monitoring the Services to Be Monitored and Setup Required for Monitoring

To delete query conditions and cookie conditions from **Query condition** and **Cookie condition**, respectively, select a desired query condition or cookie condition in **Query condition** or **Cookie condition**, respectively, and then click the < button to move the query condition or cookie condition back to **Available query condition** or **Available cookie condition**, respectively. The maximum number of conditions you can specify in **Query condition** and **Cookie condition** is 10 including both query and cookie conditions.

#### 20. Click the Registration button.

If any entries have been added in Web access condition, the Registration button is enabled.

Clicking the **Registration** button closes the Register Web transaction window, and the **Web transaction setting** area is displayed again. The settings in the Register Web transaction window are added as a Web transaction to the **Web transaction setting** area.

## (3) Next task

- 3.2.7 Setting up the monitoring items for system performance as configuration information (working with Performance Management) (working with Performance Management)
- 3.2.9 Setting up the monitoring items for service performance (when not working with Performance Management)

## (4) Related topics

- 3.1.1 SLM's monitoring methods and types of monitored targets
- 3.2.6 Deleting Web transactions to be monitored
- 5.2 User settings in SLM
- (3) Services area in 10.1.2 Common items on all windows
- 10.6.1 Configuration of the Settings window
- 10.6.3 Setting menu area
- 10.6.5 Web transaction setting area
- 10.6.6 Register Web transaction window
- 10.6.7 Add Web access condition window
- 10.6.8 Edit Web access condition window
- 10.6.9 Edit cookie window
- 10.6.10 Edit query window
- 10.6.11 Edit Web transaction window

## 3.2.6 Deleting Web transactions to be monitored

## (1) Before you start

- Verify that you have the service group administrator permissions.
- Verify that monitoring of the monitored service for which Web transactions are to be deleted has stopped. For details about how to stop monitoring, 4.2.2 Stopping monitoring.

<sup>3.</sup> Monitoring the Services to Be Monitored and Setup Required for Monitoring

## (2) Procedure

The following shows the Settings window used in this procedure.

Service Level Ma		Troubleshoot 🗐 Re		😤 🔿 Settings
	Web transaction setting	Troubleshoot Ell Re	port	💥 🌔 Settings
Setting menu	web transaction setting			
Add/Delete monitor	Group01 - Service01		* ^ ¥ ¥	New Edit Delet
Web transaction setting Configuration information settings	Web transaction	Web access condition		
Monitor settings	web transaction	Path	Query	Cookie
Start/Stop monitor		•		
	1	tophtml	time=.* q=.*	session=.* exp=10
Services	2	middle.html	q=.*	session=.* exp=10
	3	bottomhtml	q=.*	session=.* exp=10
Show all	4	example/index.html	q=* qqq=1	session=.*
- Group01	1			
Service01				
All Web Access				
All Web Access Transaction 1		]		
All Web Access Transaction 1 + Service02				
All Web Access Transaction 1 + Service 02 + Service 03				
All Web Access Transaction 1 + Service02 + Service03 - Group02	-			
All Web Access Transaction 1 + Service02 + Service03 - Group02 + Service04				
All Web Access Transaction 1 + Service02 + Service03 - Group02 + Service04 + Service05				
All Web Access Transaction 1 + Service02 + Service03 - Group02 + Service04 + Service05 - Group03				
All Web Access           Transaction1           + Service02           + Service03           - Grap02           + Service04           + Service05           - Grap02           + Service05           + Grap03           + Service05				
All Web Access           Transaction1           + Service02           + Service03           - Group02           + Service04           + Service05           - Group03           + Service06           - Group04				
All Web Access Transaction1 + Service02 + Service03 - Group02 + Service04 + Service05 - Group08 + Service05				
All Web Access Transaction 1 + Service12 + Service13 - Grace03 + Service14 - Grace03 - Grace03 - Grace03 - Grace04 - Grace04				
All Web Access Transaction 1 + Service12 + Service13 - Group13 + Service14 - Group13 - Group13 - Group13 - Group13 - Group14				
All Web Access Transaction 1 + Service12 + Service13 - Group12 + Service14 + Service15 - Group13 + Service16 - Group14				
All Web Access Transaction1 + Service82 + Service83 - Group83 + Service84 + Service85 - Group83 + Service86 - Group83 + Service86 - Group84				
All Web Access Transaction1 + Service82 + Service83 - Group83 + Service84 + Service85 - Group83 + Service86 - Group83 + Service86 - Group84				

To delete Web transactions to be monitored:

- 1. Click the Settings button.
- 2. In the Setting menu area, select Web transaction setting.

The Web transaction setting area is displayed.

3. From the **Services** area, select the monitored service.

When you select a monitored service, the service group name and monitored service name are displayed in the **Web transaction setting** area. Also, the name of any Web transaction that has already been set for the monitored service is displayed under **Web transaction** and the Web access condition for the Web transaction is displayed under **Web access condition**. Immediately after the monitored service has been registered, nothing is displayed under **Web transaction** and **Web access condition**.

- 4. From **Web transaction** or **Web access condition**, select the Web transaction that you want to delete. When a Web transaction is selected from **Web transaction** or **Web access condition**, the **Delete** button is enabled.
- 5. Click the **Delete** button.

The selected Web transaction is deleted from Web transaction and Web access condition.

## (3) Related topics

- 3.2.5 Setting up the Web transactions to be monitored
- 3.2.9 Setting up the monitoring items for service performance
- 5.2 User settings in SLM
- (3) Services area in 10.1.2 Common items on all windows
- 10.6.1 Configuration of the Settings window

- 10.6.3 Setting menu area
- 10.6.5 Web transaction setting area

# 3.2.7 Setting up the monitoring items for system performance as configuration information (working with Performance Management)

Setting up monitoring items for system performance is required when SLM is linked with Performance Management.

If you link SLM with Performance Management, set up the monitoring items for system performance as configuration information.

Setting up monitoring items for system performance associates information about a business group defined in Performance Management (including information about hosts and monitoring agents) with a monitored service. By performing this setup, you can monitor in SLM the system performance of the items that you have associated in this setup.

Monitoring items that have been set up for system performance must be set up again in the following situations:

- Monitored services have been added, changed, or deleted
- Hosts in the business group have been changed
- Monitoring agents have been added or deleted

If you perform monitoring item setup for multi-instance records, verify the values that can be specified as keys beforehand.

### (1) Before you start

- Verify that you have the service group administrator permissions.
- Verify that the monitored service has been registered. For details about how to register monitored services, see 3.2.2 Registering monitored services.
- If you monitor Web transactions, verify that the Web transactions have been registered. For details about how to register Web transactions, see 3.2.5 Setting up the Web transactions to be monitored.
- Verify that monitoring of the monitored service for which monitoring items are to be set up has stopped. For details about how to stop monitoring, 4.2.2 Stopping monitoring.
- Verify that PFM Manager is running.

For details about how to start PFM - Manager, see the description of the PFM - Manager setup procedure in the *JP1/Performance Management Planning and Configuration Guide*.

# (2) Procedure

The following shows the **Configuration information settings** area, the Confirmation of refreshing configuration information window, the Add Items to be Monitored window, and the Key field information settings window that are used in this task.

• Configuration information settings area (business group settings displayed with the System performance monitor tab selected)

<sup>3.</sup> Monitoring the Services to Be Monitored and Setup Required for Monitoring

Service Level Ma	inagement	user Help Lopout
🔂 ны е	👬 Real-time Monitor 🖼 Troubleshoot 💷 Report	🗶 Settings 💽 Ste
Setting menu	Configuration information settings	
Add/Delete monitor	Service group Group01 Service Service01	Refresh configuration information - Ste
2 Web transaction setting Configuration information settings	System performance monitor Availability nonitor	
Monitor settings	Business group settings => Monitor item settings	
Start/Stop monitor	From the Business group list, select business groups to associate with the service.	
Services	Business groups	
	Business group Host Monitored target	
Show all		
- Group01		
3 + Service01	C BGroup02	
+ Service02	Agent03	
+ Service03 - Group02	Host04 @ Agent04	
+ Service04		
+ Service05		
— Group 03		
+ Service06		
- Group 04 + Service07		
5		
3		
	To Monitor item settings	St

• Configuration information settings area (monitoring item settings displayed with the System performance monitor tab selected)

	ic Level Manag	yement																		super	Help	Log
₩	Hb e 🏼 🕬	Real-time Monitor		Trout	leshoot		R	Report												×	Settin	gs
Setting me	nu	Configuration infor	mation set	tings																		
Add/Delete r		Service group Grou	up 01					Service	Service0													
Web transact	ion setting	System performan	sce monitor		Availabi	lity monito	or															
Monitor setti		Business group settin	xc ⇒	Monitor	item sett in	65																
Start/Stop m		Maritan Jama	Add	Delete																		
2	4	Monitored target	Key field	11	Key field	2	Key field S	8	Key field		Key field	d 5	Key fie	H 6	Key fie	Hd 7	Key fiel	8 6	Key field	19	Key fiel	d 10
Services			Name	Value	Name	Value	Name	Value	Name	Value	Name	Value	Name	Value	Name	Value	Name	Value	Name	Value	Name	Value
		w Host01																				
	Show all	Apent01																				
- Groupil		CPORDAW	"Drive na"	c	-	- r	Ē					-	T	1	1	T.	-	-	-		-	F
+ Serv																						
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— Serv	rice12 rice13 Il Web Access																					
- Serv A - Group13	rice12 rice13 II Web Access 2																					
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- Serv A - Group1: + Serv + Serv - Group1:	ice12 iice13 II Web Access 2 iice04 iice05 8																					
- Serv A - Group1: + Serv + Serv - Group1: + Serv	ice12 ice10 II Web Access 2 ice14 ice15 8 8 ice16																					
- Serv A - Group1: + Serv - Group1: + Serv - Group1:	ice12 ice13 II Web Access 2 ice15 8 1 ice16 4																					
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- Serv A - Group1: + Serv - Group1: + Serv - Group1:	ice12 ice13 II Web Access 2 ice15 8 1 ice16 4	To Bairsa grou	op settings	D																	S	vē

• Confirmation of refreshing configuration information window (displayed in a new window when the **Refresh** configuration information button is clicked (step 4))

3. Monitoring the Services to Be Monitored and Setup Required for Monitoring

on rinker for o	f refreshing configura	croit millioniacio				
efresh configura	tion information?					
The following ma Monitor items to	nitor items will be deleted. be deleted					
Host	Monitored tar	rget M	lonitor item			
			CPLKDrive name>= <c></c>			
Host01	AgentID01		CPU <drive name="">=<c></c></drive>			
	AgentID01	e disassociated.	CPU <drive name="">=<c> Measurement con***</c></drive>			

• Add Items to be Monitored window (displayed in a new window when the Add button is clicked (step 7))

Add Ite	ms to be Monitored
Select it	ems to be added as monitored items.
Select	Monitor item
0	Available Memory
0	CPU Usage
0	Disk Busy %
0	Logical Disk Free Size
0	Network Bytes
	OK Cancel

• Key field information settings window (displayed in a new window when the monitoring item consists of multiple instances and the **OK** button is clicked (step 7))

rmation settings n to be monitored is a	- 18	alternet item. Faster								
n to be monitored is a Busy N	multi-metric ma	Select key field 1		Select key	field 2	$\sim$	Add line	1		
r item name	Key field 1	Key field 2	Key field 3	Key field 4	Key field 5	Key field 6	Key field 7	Key field 8	Key field 9	Key field 1
ritem name	% Disk Time									
NKN Disk Tim… 10	•									
item name		Key field 2	Key field 3	Key field 4	Key field 5	Key field b	Key field /	Key field 8	Key field 9	Key field 1
	%Disk Time									
Nc% Disk Tim… 10									-	-
item name	Key field 1 NiDisk Time	Key field 2	Key field 3	Key field 4	Key field 5	Key field 6	Key field 7	Key field 8	Key field 9	

To set up the monitoring items for system performance as configuration information:

- 1. Click the **Settings** button.
- 2. In the Setting menu area, select Configuration information settings. The Configuration information settings area is displayed.

3. From the Services area, select a monitored service whose system performance is to be monitored.

Business groups are displayed for the selected monitored service.

If a Web transaction was selected, a setup window for the monitored service to which this transaction belongs is displayed.

4. Click the **Refresh configuration information** button.

Clicking the **Refresh configuration information** button displays the most recent configuration information acquired by Performance Management in the list of business groups.

If you refresh the configuration information, the Confirmation of refreshing configuration information window is displayed. Check the displayed information and then click the **OK** button.

5. Select the business group to be associated with the monitored service.

In the list of business groups, select the business group that you want to associate with the monitored service. If a business group has already been associated with the monitored service, the associated group is displayed as being selected.

6. Click the **To Monitor item settings** button.

A list of monitoring items is displayed.

The hosts and monitoring agents under the business group selected from the list of business groups are displayed. The monitoring agents for which monitoring items have already been set up in Performance Management are displayed here. A monitoring agent for which monitoring items have not been set up is not displayed.

7. Select a monitoring agent and then click the Add button.

The Add Items to be Monitored window is displayed. Select the monitoring items to be added and then click the **OK** button.

If the added monitoring items are single-instance ones, they are displayed under **Monitored target** in the **Configuration information settings** area. Go to step 11.

If the added monitoring items are multi-instance ones, the Key field information settings window is displayed.

For the monitoring items in the key field information, those monitoring items selected in the Add Items to be Monitored window are displayed. This information cannot be edited by SLM.

# 🛛 Тір

There is a limit to the number of monitoring items that can be monitored concurrently for a single monitoring agent. For details about the number of monitoring items that can be monitored concurrently, see the applicable PFM - Agent or PFM - RM manual.

You can associate a maximum of 100 monitoring items with a single monitored service that is monitored by SLM - Manager. If you want to set more than 100 monitoring items, create multiple monitored services and then assign monitoring items to each of them.

Use the value obtained from the following formula as a guideline for the number of monitoring items that can be specified in the entire SLM - Manager:

(number of All Web Accesses + number of Web transactions)  $\times$  20 + (number of monitoring items)  $\leq$  1,200

8. Enter the value to be specified for the key field in the text box.

Define key field information for the monitoring items.

For the values to be specified, check the values for monitoring items in Performance Management. For details about checking the values of monitoring items in Performance Management, see the applicable PFM - Agent or PFM - RM manual.

<sup>3.</sup> Monitoring the Services to Be Monitored and Setup Required for Monitoring

Note that a monitoring item can be added when its key field value is empty only if the value for the monitoring item in Performance Management is also empty. Therefore, for the key field value, enter the correct value set for the monitoring item in Performance Management.

9. In Select key field 1, select a key field and then select the key field information to be displayed as the monitoring item name.

Entry of Select key field 2 is optional.

10. Select the check box for the monitoring item to be added, and then click the **OK** button.

The Key field information settings window closes and the **Configuration information settings** area is displayed. The settings specified for key field information are applied and the added monitoring item is displayed under **Monitored target** in the **Configuration information settings** area.

If you want to add another monitoring item, click the **Add line** button in the Key field information settings window to add a new monitoring item line. For the added line, repeat steps 8 through 10.

11. Click the Save button.

The settings for system performance monitoring are applied.

If you want to delete a monitoring item that has already been set up, select it, and then click the **Delete** button.

If you change business group names, host names, or monitoring agent names in Performance Management, SLM displays the applicable monitoring items with the new names.

# (3) Next task

• 3.2.8 Setting up the monitoring items for availability monitoring as configuration information (working with Performance Management)

# (4) Related topics

- (3) Services area in 10.1.2 Common items on all windows
- 10.6.1 Configuration of the Settings window
- 10.6.3 Setting menu area
- 10.6.12 Configuration information settings area (Business group settings with the System performance monitor tab selected)
- 10.6.13 Configuration information settings area (Monitoring item settings with the System performance monitor tab selected)
- 10.6.15 Add Items to be Monitored window
- 10.6.16 Key field information settings window
- 10.6.17 Confirmation of refreshing configuration information window

# 3.2.8 Setting up the monitoring items for availability monitoring as configuration information (working with Performance Management)

Monitoring item setup for availability monitoring is required when SLM is linked with Performance Management.

If you link SLM with Performance Management, set up the monitoring items as configuration information.

Monitoring item setup for availability monitoring associates measurement conditions set in Performance Management with monitored services. When you perform this setup, you can check the availability of monitored services in SLM.

<sup>3.</sup> Monitoring the Services to Be Monitored and Setup Required for Monitoring

Configuration information for monitored services that has already been set up must be set up again in the following situations:

- Monitored services have been added, changed, or deleted
- · Hosts in the business group have been changed
- · Monitoring agents have been added or deleted

When you set up monitoring items for availability monitoring, you must first use PFM - Agent for Service Response to define IE scenarios or Web transactions. For details about the definitions in PFM - Agent for Service Response, see the applicable PFM - Agent for Service Response manual.

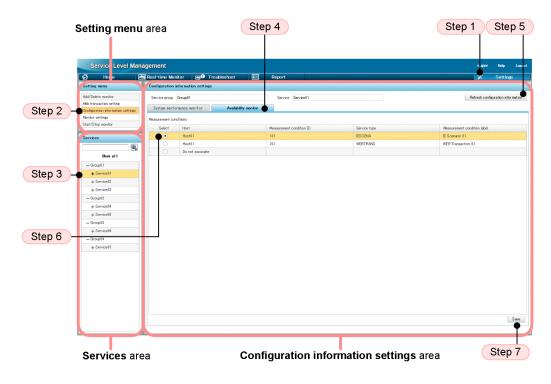
## (1) Before you start

- Verify that you have the service group administrator permissions.
- Verify that the monitored service has been registered.
   For details about how to register monitored services, see 3.2.2 Registering monitored services.
- If you monitor Web transactions, verify that the Web transactions have been registered. For details about how to register Web transactions, see 3.2.5 Setting up the Web transactions to be monitored.
- Verify that monitoring of the monitored service for which monitoring items are to be set up has stopped. For details about how to stop monitoring, 4.2.2 Stopping monitoring.
- Verify that PFM Manager is running.

For details about how to start PFM - Manager, see the description of the PFM - Manager setup procedure in the *JP1/Performance Management Planning and Configuration Guide*.

## (2) Procedure

The following shows the **Configuration information settings** area (with the **Availability monitor** tab selected) that is used in this task:



To set up monitoring items for availability monitoring as configuration information:

- 1. Click the **Settings** button.
- 2. In the **Setting menu** area, select **Configuration information settings**. The **Configuration information settings** area is displayed.
- 3. From the Services area, select a monitored service for which availability monitoring is to be set up.

Business groups are displayed for the selected monitored service.

If a Web transaction was selected, a setup window for the monitored service to which this transaction belongs is displayed.

4. Click the Availability monitor tab.

A list of measurement conditions is displayed.

5. Click **Refresh configuration information** button.

Clicking the **Refresh configuration information** button displays the most recent configuration information acquired by Performance Management in the list of measurement conditions.

If you refresh the configuration information, the Confirmation of refreshing configuration information window is displayed. Check the displayed information and then click the **OK** button.

6. Select the measurement condition to be associated with the monitored service. If you do not wish to associate a measurement condition with the monitored service, select **Do not associate**.

Select the measurement condition to be associated with the monitored service.

7. Click the Save button.

The availability monitoring settings are applied and the monitored service in SLM is associated with the measurement condition in PFM - Agent for Service Response.

## (3) Next task

• 3.2.9 Setting up the monitoring items for service performance

# (4) Related topics

- (3) Services area in 10.1.2 Common items on all windows
- 10.6.1 Configuration of the Settings window
- 10.6.3 Setting menu area
- 10.6.14 Configuration information settings area (with the Availability monitor tab selected)

# 3.2.9 Setting up the monitoring items for service performance

You must set up monitoring items for each monitored service.

# (1) Before you start

- Verify that you have the service group administrator permissions.
- Verify that the monitored service has been registered. For details about how to register monitored services, see 3.2.2 Registering monitored services.
- If you monitor Web transactions, verify that the Web transactions have been registered. For details about how to register Web transactions, see 3.2.5 Setting up the Web transactions to be monitored.

3. Monitoring the Services to Be Monitored and Setup Required for Monitoring

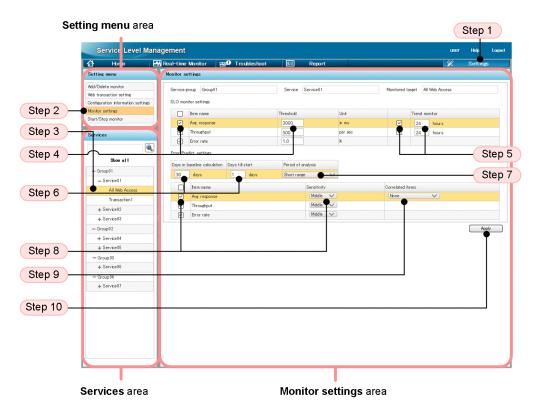
JP1/Service Level Management Description

- When setting the following monitor items, check that monitoring of the monitored service to set the monitor item for is stopped.
  - Whether SLO monitoring has been implemented
  - Whether to monitor trends
  - Whether predictive error detection has been implemented
  - Period of analysis of predictive error detection

For details about how to stop monitoring, see 4.2.2 Stopping monitoring.

# (2) Procedure

The following shows the Settings window used in this task:



To set up monitoring items for service performance:

- 1. Click the **Settings** button.
- 2. In the Setting menu area, select Monitor settings.
  - The Monitor settings area is displayed.
- 3. From the **Services** area, select a monitored target of a monitored service.

When you select a monitored target of a monitored service, the service group name, monitored service name, and monitored target are displayed in the **Monitor settings** area. The current values are displayed under **SLO monitor settings** and **Error Predict. settings**. Immediately after a monitored service has been registered, the default values are set.

4. If you will be running threshold value monitoring or trend monitoring, select the **Item name** check boxes under **SLO monitor settings** for the items that you want to monitor, and then enter values in **Threshold**.

An error message is displayed if an **Item name** check box is selected but no value is specified for that item or an invalid value is entered in the text box.

<sup>3.</sup> Monitoring the Services to Be Monitored and Setup Required for Monitoring

5. If you will be running trend monitoring, select the **Trend monitor** check boxes for the items that you want to monitor under **SLO monitor settings**, and then enter the reference time for trend calculation.

The **Trend monitor** check boxes are enabled only when **Item name** check boxes are selected. In the **Trend monitor** text box, enter the time to be subject to trend monitoring.

An error message is displayed if a **Trend monitor** check box is selected but no value is specified for that item or an invalid value is entered in the text box. Note that there is no check box for **Error rate**, because trend monitoring is not applicable to error rate.

6. Under Error Predict. settings, enter appropriate values in Days in baseline calculation and Days till start.

An error message is displayed if an invalid value or nothing is entered in a text box. If you will not be performing out-of-range value detection, leave the default values in **Days in baseline calculation** and **Days till start**.

7. Select Period of analysis in Error Predict. Settings.

Select the period of analysis for out-of-range value detection from the following items in the pull-down menu. Short range: Past 60 days

Long range: Past 5 years

8. If you will be performing out-of-range value detection, select the **Item name** check boxes for the items that you want to monitor under **Error Predict. settings** and then select their **Sensitivity** settings.

Select an item that you want to monitor, and then select **High**, **Middle**, or **Low** as its sensitivity. As the sensitivity becomes higher, it becomes easier to detect the item. As the sensitivity becomes lower, it becomes harder to detect the item. Initially, set the sensitivity to **Middle**, and then you can adjust it later as needed after checking the number of items detected.

- 9. If you perform out-of-range value detection with multiple monitoring items combined, select **Throughput** from the **Correlated items** pull-down menu on the **Avg. response** row under **Error Predict. settings**.
- 10. Click the Apply button.

If the monitoring items have been set up successfully, a dialog box to that effect is displayed.

When you click the **OK** button in the dialog box, the settings are applied.

### (3) Supplementary information

• As setting the **Period of analysis** in **Error Predict. settings** to Long range will lower the accuracy of predictive error detection, we recommend changing the outlierRate property in the system definition file

(jplitslm.properties) to adjust how often warning events occur. However, as changing the outlierRate property will affect the entire system, the change of the degree of occurrences of warning events will be constantly applied. For example, when the forms of the graph greatly differ between busy periods and normal times other than the busy periods, changing the outlierRate property to suppress warning events during the busy periods might cause warning events to be suppressed during normal times. For this reason, to avoid affecting operation during normal times, it is necessary to take measures such as ending SLM - Manager before the busy periods, and restarting SLM - Manager after changing the outlierRate property.

For details about the system definition file (jplitslm.properties), see 5.6 Editing the system definition files to change settings.

• In the case of a Web transaction, the **Period of analysis** in **Error Predict. settings** cannot be specified. Follow the specification of All Web Access.

# (4) Next task

- 3.2.10 Setting up the monitoring items for system performance (working with Performance Management)
- 4.2.1 Starting monitoring (when not working with Performance Management)

<sup>3.</sup> Monitoring the Services to Be Monitored and Setup Required for Monitoring

# (5) Related topics

- 3.1.2 Using out-of-range value detection for detection of unusual status in monitored services
- 3.1.3 Using trend monitoring for detection in advance of threshold overages
- 3.1.4 Using threshold value monitoring for detection of threshold overages
- 5.2 User settings in SLM
- (3) Services area in 10.1.2 Common items on all windows
- 10.6.1 Configuration of the Settings window
- 10.6.3 Setting menu area
- 10.6.18 Monitor settings area (monitored target within the monitored service selected in the Services area)

# 3.2.10 Setting up the monitoring items for system performance (working with Performance Management)

You must set up monitoring items for each monitored service.

# (1) Before you start

- Verify that you have the service group administrator permissions.
- Verify that the monitored service has been registered. For details about how to register monitored services, see 3.2.2 Registering monitored services.
- When setting the following monitor items, check that monitoring of the monitored service to set the monitor item for is stopped.
  - Whether SLO monitoring has been implemented
  - Whether to monitor trends
  - Whether predictive error detection has been implemented
  - Period of analysis of predictive error detection

For details about how to stop monitoring, 4.2.2 Stopping monitoring.

• Verify that configuration information for the monitored service has been specified. For details about specifying configuration information for monitored services, see 3.2.7 Setting up the monitoring items for system performance as configuration information (working with Performance Management).

# (2) Procedure

The following shows the Settings window used in this procedure:

<sup>3.</sup> Monitoring the Services to Be Monitored and Setup Required for Monitoring

Se	etting menu a	area					Step	8	(	Step 1		
	Service Level Man	agement							supe	r Help Lord		
	🔂 Ht ne 🖻	Neal-time Monit	or 🖂 Troublesh	oot 💵 Report					*	Settings		
	Setting menu	Monitor settings										
	Add/Delete monitor Web transaction setting	Service group	Group 83	Service Service05	Service Service05 Period of analysis Short range 🗸				Clear			
	Configuration information settings		SLO monitor settings			Error Predict. settings				Base monitor item		
Step 2 )-	Monitor settings Start/Stop monitor	Monitor item	Monitor Threshold	Occurrence frequency (Times exceeded/measured)	Trend monitor	Monitor Days in baseline calculation	Days till start	Sensitivity	Occurrence frequency (Times exceeded/measured)	Select		
	Services	- Agent01 CPUKDr-	- 🗸 🕇 30.0 ×	1/1		✓ 30 days	1 days	Middle V	6 / 60	۲		
	Shor all	Heep			24 hours		1	Middle	6 / 60	0		
Step 4 –	Groupil		L	T T		T	T	T		T		
otop i	+ Service01											
Step 5 –	+ Service02											
	+ Service03 - Group12											
Step 6 🔵	+ Service04											
	- Group13											
Step 3 🔵	Service05 Group14											
	Group14											
Stop 7												
Step 7												
Step 9 _												
tep 10 _												
Step 11												
										Apply		
										T		
	Services are			Monitor					(	Step 1		

To set up monitoring items for system performance:

- 1. Click the **Settings** button.
- 2. In the **Setting menu** area, select **Monitor settings**. The **Monitor settings** area is displayed.
- 3. From the Services area, select a monitored service.

When you select a monitored service, the service group name, service name, and monitoring items subject to setup are displayed in the **Monitor settings** area. The current values are displayed under **SLO monitor settings** and **Error Predict. settings**. Immediately after a monitored service has been registered, the default values are set.

4. If you will be running threshold value monitoring or trend monitoring, select the **Monitor** check boxes for the items that you want to monitor under **SLO monitor settings**, and then enter values in **Threshold**.

If **T** (upper-limit threshold value) is displayed, specify an upper-limit threshold. If  $\downarrow$  (lower-limit threshold value) is displayed, specify a lower-limit threshold.

An error message is displayed if a **Monitor** check box is selected but no value is specified for that item or an invalid value is entered in the text box.

### 5. Under SLO monitor settings, specify Occurrence frequency.

Specify a most recent measurement count for the denominator, and specify an excess count for the numerator. An error will be displayed when the specified excess count is exceeded.

6. If you will be running trend monitoring, select the **Trend monitor** check boxes for the items that you want to monitor under **SLO monitor settings**, and then enter the reference time for trend calculation.

The **Trend monitor** check boxes are enabled only when the **Monitor** check boxes are selected. In a **Trend monitor** text box, enter the time to be subject to trend monitoring.

An error message is displayed if a check box is selected but no value is specified for that item or an invalid value is entered in the text box.

7. Under Error Predict. settings, enter appropriate values in Days in baseline calculation and Days till start.

An error message is displayed if an invalid value or nothing is entered in the text box. If you will not be performing an out-of-range value detection, clear the **Monitor** check box for **Error Predict. settings**.

### 8. Select **Period of analysis** in the **Monitor settings** area.

Select the period of analysis for out-of-range value detection from the following items.

Short range: Past 60 days Long range: Past 5 years

9. If you will be performing out-of-range value detection, select the **Monitor** check boxes for the items that you want to monitor under **Error Predict. settings**, and then select their **Sensitivity** settings.

Select an item that you want to monitor, and then select **High**, **Middle**, or **Low** as its sensitivity. As the sensitivity becomes higher, it becomes easier to detect the item. As the sensitivity becomes lower, it becomes harder to detect the item. Initially, set the sensitivity to **Middle**, and then you can adjust it later as needed after checking the number of items detected.

### 10. Under Error Predict. settings, specify Occurrence frequency.

Specify a most recent measurement count for the denominator, and an excess count for the numerator. An error will be displayed when the specified excess count is exceeded.

### 11. Select Base monitor item.

If the service's monitoring configuration is **System**, the **Base monitor item** radio buttons and the **Clear base monitor item** button are displayed.

Select the **Base monitor item** radio button corresponding to the monitoring item to be used as the base for determining the dates used for obtaining the baseline for out-of-range value detection.

If no monitoring item is selected, the service's throughput will be used as the base.

### 12. Click the **Apply** button.

If the monitoring items have been set up successfully, a dialog box to that effect is displayed.

When you click the **OK** button in the dialog box, the settings are applied.

# (3) Supplementary information

- As setting the **Period of analysis** in the **Monitor settings** area to Long range will lower the accuracy of predictive error detection, we recommend that the settings for occurrence frequency of Error Predict. are changed to adjust how often warning events occur.
- In the case of a Web transaction, the **Period of analysis** in the **Monitor settings** area cannot be specified. Follow the specification of All Web Access.
- With monitor items for system performance, the **Period of analysis** cannot in the **Monitor settings** area cannot be specified for every item. The **Period of analysis** is specified for the entirety of monitor items under the service.

# (4) Next task

• 4.2.1 Starting monitoring

# (5) Related topics

- 3.1.2 Using out-of-range value detection for detection of unusual status in monitored services
- 3.1.3 Using trend monitoring for detection in advance of threshold overages
- 3.1.4 Using threshold value monitoring for detection of threshold overages
- 5.2 User settings in SLM
- (3) Services area in 10.1.2 Common items on all windows
- 10.6.1 Configuration of the Settings window
- 10.6.3 Setting menu area
- 10.6.19 Monitor settings area (monitored service selected in the Services area)

3. Monitoring the Services to Be Monitored and Setup Required for Monitoring

JP1/Service Level Management Description

# 3.2.11 Notes about setting up monitoring items

# (1) Timing of updating the number of registered monitored targets

If a service group administrator adds or deletes a monitored target while multiple users are logged in to SLM - Manager, the change will be applied to the other monitoring persons' windows when the number of registered monitored targets is updated. The number of registered monitored targets is updated, excluding during re-login, when a monitoring person accesses a monitored target that was deleted by the service group administrator or when the window is refreshed automatically. Until the number of registered monitored targets is updated, the status in effect before the service group administrator added or deleted monitored targets is maintained.

The following table describes the timing of updating the registered monitored targets.

No.	Window accessed by a monitoring person other than the service group administrator	Update timing
1	IT Service Level Management window	• When a monitoring person re-logs in.
2	Home window	<ul> <li>When Details for a deleted monitored target is clicked in the Events in the last 7 days area.</li> <li>When Unread is clicked in the Events in the last 7 days area while Status for a deleted monitored target's event is Unread.</li> <li>When the window is refreshed automatically after a monitoring target was deleted.</li> </ul>
3	Real-time Monitor window	• When an already deleted monitored target is selected in the <b>Services</b> area (if a deleted monitored target was already selected, another service was selected, and then the deleted monitored target is selected again).
		<ul> <li>When an already deleted monitored target is selected in the Service performance information area.</li> </ul>
		• When the value for <b>Display interval</b> is changed while a chart for an already deleted monitored target is being displayed on the <b>Performance chart</b> tab.
		• When the <b>Troubleshoot</b> button on the <b>Performance chart</b> tab is clicked while a chart for an already deleted monitored target is being displayed on the <b>Performance chart</b> tab.
		• When <b>Details</b> is clicked while an already deleted monitored target is being displayed on the <b>Event</b> tab.
		• When <b>Unread</b> is clicked while <b>Status</b> of a deleted monitored target's event is <b>Unread</b> on the <b>Event</b> tab.
		• When the window is refreshed automatically after a monitoring target was deleted.
4	Troubleshoot window	• When an already deleted monitored target is selected in the <b>Services</b> area (if a deleted monitored target was already selected, another monitored target was
		selected, and then the deleted monitored target is selected again, or the 💽
		(reload) button is clicked).
		• When the <b>Details</b> button for an already deleted monitored target on the <b>Event</b> tab is clicked.
		• When <b>Unread</b> on the <b>Event</b> tab is clicked while <b>Status</b> of a deleted monitored target's event is <b>Unread</b> .
		• When the <b>(reload)</b> button is clicked while an event of a deleted
		monitored target is being displayed on the <b>Event</b> tab.
		• When the logging range is changed by dragging a chart when the chart displays a deleted monitored target on the <b>Performance chart</b> tab.

 Table 3-9:
 Timing of updating the registered monitored targets

No.	Window accessed by a monitoring person other than the service group administrator	Update timing
4	Troubleshoot window	• When the value for <b>Display interval</b> is changed while a chart for a deleted monitored target is being displayed on the <b>Performance chart</b> tab.
5	Report window	• When an attempt is made to display a report for a deleted monitored target.
6	Settings window	<ul> <li>When the Add/Delete monitor area is displayed.</li> <li>When a monitored service is added or deleted in the Add/Delete monitor area (if the Start/Stop monitor area is already displayed, it is displayed again).</li> <li>When an already deleted monitored target is selected in the Services area with the Monitor settings area displayed (if a deleted monitored target was already selected, another monitored target was selected, and then the deleted monitored target is selected again).</li> <li>When an attempt is made to add monitor settings for a deleted monitored target in the Monitor settings area.</li> <li>When a Web transaction is added or deleted in the Web transaction setting area.</li> <li>When an already deleted monitored target is selected in the Web transaction setting area.</li> <li>When an already deleted monitored target is selected in the Web transaction setting area.</li> <li>When an already deleted monitored target is selected in the Web transaction setting area.</li> <li>When an already deleted monitored target is selected in the Set transaction setting area.</li> <li>When an already deleted monitored target is selected in the Web transaction setting area.</li> <li>When an already deleted monitored target is selected in the Set transaction setting area.</li> <li>When an already deleted monitored target is selected in the Set transaction setting area and then the Edit or Delete button is clicked.</li> <li>In the Web transaction setting area, a Web transaction of a deleted monitored target was selected, and then the Edit or Delete button was clicked.</li> <li>When the Start/Stop monitor area is displayed (if the Start/Stop monitor area was already displayed, the Start/Stop monitor area is displayed again).</li> <li>When an attempt is made to start or stop monitoring of an already deleted monitored service in the Start/Stop monitor area.</li> </ul>

When any of the above operations is performed, an error message is displayed and the current window is refreshed. The refreshed window is in newly opened status. Any data, such as numeric values, that was entered in the window before the window was refreshed is not retained.

# (2) Character strings displayed as monitoring item names (working with Performance Management)

When the language setting of the OS on which SLM - Manager is installed is Japanese and **Monitor item name displayed on SLM (Japanese)** is specified in Performance Management, the values as specified are displayed for monitoring item names. Check if the language setting of the OS on which SLM - Manager is installed is Japanese.

When **Monitor item name displayed on SLM (Japanese)** is not specified in Performance Management, the values for **Monitor item name displayed on SLM (English)** are displayed. For details about the monitoring items, see the applicable PFM - Agent or PFM - RM manual.

# (3) Notes about units used in SLM windows (working with Performance Management)

When the language setting of the OS on which SLM - Manager is installed is Japanese and **Monitor item name displayed on SLM (Japanese)** is specified in Performance Management, the values as specified are displayed as the units for monitoring items for system performance that are displayed in SLM. Check if the language setting of the OS on which SLM - Manager is installed is Japanese.

When **Monitor item name displayed on SLM (Japanese)** is not specified in Performance Management, the values for **Monitor item name displayed on SLM (English)** or the units specified in the custom monitoring item definition are displayed. For details about the monitoring items, see the applicable PFM - Agent or PFM - RM manual.

# (4) Notes about configuration information that differs between SLM and Performance Management (working with Performance Management)

If a business group's reference permissions have been changed or the configuration has been changed, SLM - Manager can still use the previous reference permissions to start and stop monitoring until the business group is updated in SLM - Manager. The following table explains SLM's behavior when monitoring of a business group is started or stopped while changes to the business group's configuration information have not yet been applied by SLM - Manager.

No.	Configuration information whose change has not been applied	Processing	SLM's behavior
1	Addition of business group permissions	Start monitoring.	Monitoring is started successfully.
2		Stop monitoring.	Monitoring is stopped successfully.
3	Deletion of business group permissions	Start monitoring.	Monitoring is started successfully.
4		Stop monitoring.	Monitoring is stopped successfully.
5	Addition of a host	Start monitoring.	Monitoring is started successfully for the monitoring items in the configuration information that has already been applied to SLM. The monitoring items for an added host that has not been applied are not processed.
6		Stop monitoring.	Monitoring is stopped successfully.
7	Deletion of a host	Start monitoring.	A message indicating that the configuration information does not match is output to a log file and the monitoring start processing on monitoring items for the deleted host fails.
8		Stop monitoring.	A message indicating that the configuration information does not match is output to a log file and monitoring is stopped successfully.
9	Addition of a monitoring agent	Start monitoring.	Monitoring is started successfully for the monitoring items in the configuration information that has already been applied to SLM. The monitoring items for an added monitoring agent that has not been applied are not processed.
10		Stop monitoring.	Monitoring is stopped successfully.
11	Deletion of a monitoring agent	Start monitoring.	A message indicating that the configuration information does not match is output to a log file and the monitoring start processing on monitoring items for the deleted monitoring agent fails.
12		Stop monitoring.	A message indicating that the configuration information does not match is output to a log file and monitoring is stopped successfully.

Table 3-10: SLM's behavior when configuration	information does not match between SLM and
Performance Management	

No.	Configuration information whose change has not been applied	Processing	SLM's behavior
13	Change to the data model of a monitoring agent	Start monitoring.	A message indicating that the configuration information does not match is output to a log file and the monitoring start processing for the monitoring agent whose data model has changed fails.
14		Stop monitoring.	Monitoring is stopped successfully.

# (5) Notes about monitoring items with the same display names (working with Performance Management)

If more than one monitoring item has the same display name in the Performance Management settings, the duplicatelynamed monitoring items cannot be distinguished in the SLM windows. To change the display names of monitoring items, change the definition values for custom monitoring items in PFM - Manager. For details about the monitoring items, see the applicable PFM - Agent or PFM - RM manual.

# (6) About monitoring items with multi-instance records (working with Performance Management)

Monitoring items with multi-instance records depend on the monitoring agent. For details about the monitoring items for each monitoring agent, see the applicable PFM - Agent or PFM - RM manual.

## (7) Notes about collecting performance data by linking with Performance Management (working with Performance Management)

To be able to reference data related to system performance by connecting to PFM - Web Console, the **Log** property must be set to **Yes** in Performance Management. For details, see 5.4.2 Specifying settings for saving Performance Management's performance data from SLM (working with Performance Management).

# 3.3 Examples of setup of the monitoring items

This section explains setup of monitoring items for the following examples discussed in Chapter 1:

- Predictive error detection in the performance of monitored services and the corrective action support methodology
- Predictive error detection in the performance of processes in monitored services and the corrective action support methodology
- Predictive system error detection in the performance of systems running monitored services and the corrective action support methodology
- Periodic evaluation of the status of monitored services

### 3.3.1 Example of setup for predictive error detection in the performance of monitored services and the corrective action support methodology

This subsection explains an example of predictive error detection in the performance of monitored services and the corrective action support methodology, as discussed in 1.1.2 Monitoring service status.

This subsection explains by way of example how to perform evaluation and setup based on given conditions to support predictive error detection in the performance of monitored services and the corrective actions to take.

# (1) Prerequisites

The following are the conditions for this setup example:

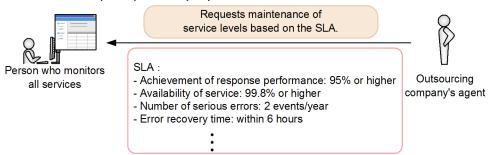
- There is a service level agreement (SLA) regarding the service quality (service level) between the service's outsourcing company (service provider) and an outsourced contractor (data center). The data center is required to maintain the service level based on the SLA.
- The outsourced services are registered as monitored services as shown below, and monitoring of the monitored services has stopped.
  - Service group: Group01 Services belonging to service group Group01: Service01 to Service03
  - Service group: Group02 Services belonging to service group Group02: Service04 and Service05
  - Service group: Group03 Service belonging to service group Group03: Service06
  - Service group: Group04

Service belonging to service group Group04: Service07

• The following figure shows the relationship among the personnel involved in this task.

<sup>3.</sup> Monitoring the Services to Be Monitored and Setup Required for Monitoring

Figure 3-30: Relationship among personnel involved in predictive error detection in the performance of monitored services and the corrective action support methodology (setup example)



### · Person who monitors all services

Determines the SLO for each monitoring item based on the SLA, and then sets up the monitoring items in the Settings window.

• Outsourcing company's agent

This person is in charge of providing the services outsourced in the agreement. The person who monitors all services is responsible for managing the service level for the outsourced services.

# (2) Defining SLOs from the SLA

### Tasks required for setting up monitoring items in SLM

The person who monitors all services checks the SLA and evaluates the SLOs for thresholds.

Because the SLA contains requirements, including that achievement of response performance be 95% or higher and availability of service be 99.8% or higher, the person who monitors all services defines the SLOs as follows:

- Average response time: 3,000 milliseconds
- Throughput: 800 count/second
- Error rate: 1.0%

The person who monitors all services also decides to perform out-of-range value detection in addition to monitoring based on thresholds as SLOs because warning signs of service performance errors must be detected and handled.

### **Results of the tasks**

Because SLOs have been defined, the person who monitors all services decides to set up monitoring items for each monitored service.

### (3) Setting up monitoring items

### Tasks in SLM

The person who monitors all services decides to log in to SLM - Manager to display the Settings window and set up monitoring items for the monitored services based on the defined SLOs.

The following shows a setup example of monitoring items for the monitored services based on the SLOs.

Figure 3-31: Setup example of monitoring items for the monitored services based on the SLOs

Setting menu         Monitor settings           Add/Dather monitor         Service group (Group01) Service Service01 Monitored target All Web Access           Add/Dather monitor         Service group (Group01) Service Service01 Monitored target All Web Access           Start/Stop monitor         Sito montor settings           Start/Stop monitor         Sito montor settings           Services         Immanne           Start/Stop monitor         Monitor settings           Start/Stop monitor         More response           Start/Stop monitor         Immanne           Start/Stop monitor         More response           Start/Stop monitor         More response           Carcup01         Start           - Service01         Days in baseline calculation Days til start           Period of analysis         Throudput           O days         S days           All Web Access         Monitor response           Transaction1         Period of analysis           Service03         Immanne           Service03         For rate           Service03         For rate           Service05         Service06           - Group04         Heft           + Service06         Service06           - Group04         Service06 </th <th>🔂 Home</th> <th>MM F</th> <th>Rea⊢time</th> <th>Monitor</th> <th>Bangel Tra</th> <th>oubleshoot</th> <th>21</th> <th>Report</th> <th>1</th> <th></th> <th></th> <th></th> <th>*</th> <th>Settings</th> <th></th>	🔂 Home	MM F	Rea⊢time	Monitor	Bangel Tra	oubleshoot	21	Report	1				*	Settings	
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											Throughp	ut	~		
				Throughput				High	$\sim$						
- Group12     Apply       + Service04     -       + Service05     -       - Group08     -       - Service06     -				Error rate				High	$\mathbf{\vee}$						
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- Grap03 + Service08 - Grap04		_													
+ Service06 - Group04															
- Group04															
+ Selareot															
	- Serviceor														

This example sets up monitoring items for service Service01 of service group Group01. The following shows the settings for the monitoring items.

### **SLO monitor settings**

Table 3-11: Example settings under SLO monitor settings

Check box	Item name	Threshold	Check box	Trend monitoring
Selected	Avg. response	3000	Selected	5
Selected	Throughput	800	Selected	5
Selected	Error rate	1.0		

### Legend:

--: Cannot be set

Under **SLO monitor settings**, the SLO definition items are specified as thresholds, and then trend monitoring is set up for average response time and throughput so as to promptly detect any error in the performance of a monitored service.

A potential service performance error must be detected at least five hours in advance because other personnel must be contacted to take corrective action in the event of a service performance error. For this reason, trend monitoring is set to 5 hours.

### **Error Predict. settings**

Table 3-12: Example settings under Error Predict. settings

Days in baseline calculation	Days till start	Check box	Item name	Sensitivity	Correlated item
20	5	Selected	Avg. response	High	Throughput
		Selected	Throughput	High	
		Selected	Error rate	High	

Legend:

--: Cannot be set

Under **Error Predict. settings**, 20 days' worth of service performance is to be used to calculate the baseline for performing monitoring based on typical service performance. **Days till start** is set to 5 because it was requested that monitoring be started five days later.

Out-of-range value detection is to be performed for all monitoring items. The sensitivity is set to high so that any service performance that veers from the baseline will be detected quickly. Out-of-range value detection with multiple monitoring items combined is also to be performed to improve the precision of out-of-range value detection.

### **Results of the tasks**

Once setup has been completed for service Service01 of service group Group01, the person who monitors all services proceeds to set up monitoring items for the remaining monitored services in the same manner.

After setup has been completed for all monitored services, the person who monitors all services decides to perform monitoring. For an example of execution of monitoring, see 4.6.1 Example of execution for predictive error detection in the performance of monitored services and the corrective action support methodology.

# 3.3.2 Example of setup for predictive error detection in the performance of processes in monitored services and the corrective action support methodology

This subsection explains an example of predictive error detection in the performance of processes in a monitored service and the corrective action support methodology, as discussed in 1.1.2 Monitoring service status.

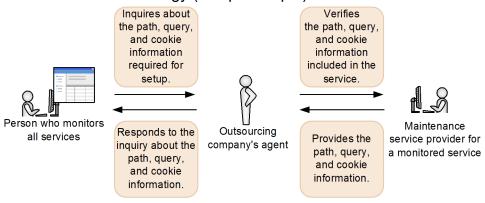
This subsection explains by way of example how to perform evaluation and setup based on given conditions to support predictive error detection in the performance of processes in a monitored service and the corrective actions to take.

# (1) Prerequisites

The following are the conditions for this setup example:

- The service group and monitored services have been registered in the same manner as in 3.3.1 Example of setup for predictive error detection in the performance of monitored services and the corrective action support methodology.
- New processes are scheduled to be added to service Service01 of server group Group01 and those processes to be added are not running yet. For the processes that will be added, the average response time, throughput, and error rate values have been determined as system requirements by the service's outsourcing company.
- Monitoring of service Service01 of server group Group01 is stopped.
- The following figure shows the relationship among the personnel involved in this task.

Figure 3-32: Relationship among personnel involved in predictive error detection in the performance of processes in a monitored service and the corrective action support methodology (setup example)



· Person who monitors all services

Sets up Web transactions in the Settings window on the basis of the paths, queries, and cookie information obtained from maintenance service engineers for the services via the outsourcing company's agent. This person also evaluates the thresholds for the monitoring items based on the system requirements, and then sets up the monitoring items in the Settings window.

· Outsourcing company's agent

This person is in charge of providing the services outsourced in the agreement. The person who monitors all services is responsible for managing the service level for the outsourced services. If contacted by the person who monitors all services regarding internal information about a monitored service, such as path, query, and cookie information, this person verifies the information with the maintenance personnel in charge of the monitored service.

· Maintenance service provider for a monitored service

This is a service engineer who participated in development of the service and who is stationed at the service users' location to provide support. If there are questions about the monitored service from the outsourcing company's agent, this person provides the necessary information.

# (2) Defining Web access conditions based on the paths, queries, and cookie information and defining thresholds based on the system requirements

### Tasks required for setting up Web transactions in SLM

The person who monitors all services obtains the paths, queries, and cookie information for the processes to be monitored from the maintenance service engineers for the services via the outsourcing company's agent. This person also evaluates the thresholds for monitoring items based on the system requirements for the monitored processes. The following table shows the Web access conditions, session conditions, and thresholds for the monitoring items that are defined on the basis of the obtained paths, queries, and cookie information and the system requirements.

- Web access condition Path Query Cookie Web access condition 1 /top.html q=.\* session=.\* time=.\* exp=10 Web access condition 2 /middle.html q=.\* session=.\* exp=10 Web access condition 3 /bottom.html q=.\* session=.\*
- Web access conditions

Web access condition	Path	Query	Cookie
Web access condition 3	/bottom.html	q=.*	exp=10
Web access condition 4	example/index.html	q=.* qqq=1	session=.*

Session conditions

Query condition: q Cookie condition: session

• Thresholds for monitoring items

Average response time: 3,000 milliseconds

Throughput: 800 count/second

Error rate: 1.0%

The person who monitors all services also decides to perform out-of-range value detection in addition to monitoring based on thresholds because warning signs of service performance errors must be detected and handled.

### **Results of the tasks**

The person who monitors all services decides to name the Web transaction Transaction1 and sets up the defined Web access conditions. This person also decides to set up monitoring items after setting up the Web access conditions for Transaction1.

# (3) Setting up the Web transaction

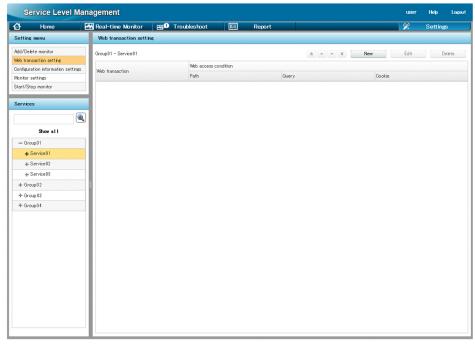
### Tasks in SLM

The person who monitors all services decides to set up the Web transaction based on the information obtained from the maintenance service engineer for the service. The Web access conditions for the Web transaction are imported from the automatically detected URI. The following procedure is performed for this setup:

1. Log in to SLM - Manager, and then display the Web transaction setting area in the Settings window.

The following shows the **Web transaction setting** area in the Settings window.

Figure 3-33: Web transaction setting area in the Settings window (setup example)



This example sets up a Web transaction for service Service01 of service group Group01.

2. Select Service01 of Group01 in Services, then click the New button to display the Register Web transaction window to set up each item of the Web transaction.

The following shows the Register Web transaction window.

Register Web transaction	
Web transaction name Transaction1 Web access condition	Add condition Edit condition Delete condition
# Path	Query Cookie
Session condition Available query condition	Available cookie condition
	Registration Cancel

### Figure 3-34: Register Web transaction window (setup example)

In this example, Transaction1 is entered as the Web transaction name.

- 3. Click the Add condition button to display the Add Web access condition window to set up Web access conditions for Web transaction Transaction1.
- 4. Click the **Start detection** button to import Web access conditions from automatically detected URIs. The following shows an example of the detection results.

Figure 3-35: Example of detected URIs

Available URI (in http://xxx.111.hitachi.co.jp/)	Edit cookie
http://xxx.111.hitachi.co.jp/jp1itsIm/	
http://xxx.111.hitachi.co.jp/jp1its1m/jp1its1m.jsp	
http://xxx.111.hitachi.co.jp/top.html?q=1&time=2	

In this example, the URI on the third line is edited and Web access conditions are imported. The path is top.html and query is q=1 and time=2. The example retains the path as is and changes the query to q=.\* and time=.\* to match Web access condition 1.

5. While the URI on the third line is selected, click the Edit cookie button to edit the cookie to match Web access condition 1.

The following shows the Edit cookie window.

### Figure 3-36: Edit cookie window (setup example)

dit cookie	Add line Delete
Key	Value
✓ index	0
area	00
	OK Cancel

In this figure, a cookie is set to index=0 and area=00. The example edits the text box and changes the cookie to session=.\* and exp=10 so that it matches Web access condition 1.

6. Verify that **Available URI** matches Web access condition 1, and then click the **Import Available URI** button while the URI on the third line is selected.

The same path, query, and cookie information as for the URI on the third line are displayed in **Define Web access** condition.

The following shows an example of the Add Web access condition window that displays the path, query, and cookie information.

Figure 3-37: Example of Add Web access condition window that displays the path, query, and cookie information

Add Web access condition
Source IP 10.196.140.43 Start detection Status:Stopped Add line Delete all available URIs
Available URI (in http://xxx.111.hitachi.co.jp/) Edit cookie
http://xxx.111.hitachi.co.jp/jp1itslm/
http://xxx.111.hitachi.co.jp/jp1itslm/jp1itslm.jsp
http://xxx.111.hitachi.co.jp/top.html?q=.*&time=.*
Define Web access condition Import Available URI Apply web access Condition Delete all
Path top.html
Query q=.* time=.*
Cookie session=.* exp=10
Add condition Cbse

By clicking the **Apply Web Access Condition** button in this status, you can verify whether the entered **Define Web** access condition matches the target Web access.

- 7. Once the Web access condition definition has been entered, click the Add condition button. Web access condition 1 is added to Transaction1.
- 8. After Web access condition 1 has been added, add the remaining Web access conditions in the same manner. When all four Web access conditions have been added, click the **Close** button to display the Register Web transaction window again.

The following shows the Register Web transaction window in which the Web access conditions have been added.

<sup>3.</sup> Monitoring the Services to Be Monitored and Setup Required for Monitoring

# Figure 3-38: Register Web transaction window in which Web access conditions have been added (setup example)

		action name Transacti s condition	on1				Add condition	Edit condition	Delete condition
	#	Path			Query		Cookie	:	
\$	1	top.html			q=.* time=.*		sessio	n=.* exp=10	
\$	2	middle ht ml			q=.*		sessio	n=.* exp=10	
\$	3	bottomhtml			q=.*		sessio	n=.* exp=10	
\$	4	example/index.html			q=.* qqq=1		sessio	n=.*	
/ailab		ndition uery condition	Quer	y condition		Available cookie o	condition	Cookie condition	
/ailab			Quer	y condition			condition	Cookie condition	
			Quer	y condition		Available cookie o	condition	Cookie condition	
ailab			Quer	y condition			condition	Cookie condition	
ailab			Quer	y condition			condition	Cookie condition	
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ailab			Quer	y condition			condition	Cookie condition	
ailab			Quer	y condition			condition	Cookie condition	
ailab			Quer	y condition			condition	Cookie condition	

9. After you have added the Web access conditions, specify session conditions to identify Web access users. From Available query condition, select q to move to Query condition, and then from Available cookie condition, select session to move to Cookie condition.

After you have finished specifying the session conditions, click the **Registration** button to register Transaction1.

### **Results of the tasks**

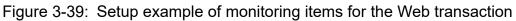
Once Transaction1 has been registered, the person who monitors all services decides to set up monitoring items for Transaction1.

### (4) Setting up monitoring items

### Tasks in SLM

The person who monitors all services decides to display the **Monitor settings** area in the Settings window and set up monitoring items for the Web transaction.

The following shows a setup example of the monitoring items for the Web transaction.



dd/Debter monitor  dd/Debter monitor  dd/Debter monitor  deb transaction strine  biford settines  Service group @roup01	dd/Debter monifor dd/Debter monifor dd/Debter monifor deb transaction settine configuration settine configuration settine configuration settine configuration settine configuration settine configuration configurat	Home	- MM	Real-time	Monitor	Ban D Tr	oubleshoot	31	Report					%	Setting	5
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Sore all       - Group01       - Service13       All Web Access       Transaction1       + Service13       - Group02       + Service13       - Group02       + Service13       - Group02       + Service13       - Group03       + Service163       - Group03       + Service163	Sore all         I.0         K           - Group01         - Group02         - Group02         - Group02         - Group03         - Group03         - Group04         Hefn <	larvicas			Throughput			800			per sec		5	hours		
Store all       - Group01       - Service01       All Web Access       I Web Access       - Service03       - Service03       - Service03       - Group02       + Service03       - Service03       - Service03       - Service03       - Service03       - Service03       - Service03	Scor all       - Group01       - Service11       All Web Access       All Web Access       + Service13       + Service14       + Service14       + Service14       + Service13       - Group14	56171668			Error rate			1.0			%					
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- Group01       - Group01       - Group01       All Web Access       Transactori       • Service03       - Group02       • Service05       - Group03       • Service05       - Group03       • Service06	- Group01       - Serv0601       All Web Access       Transactor1       + Serv0603       - Group02       + Serv0604       + Serv0604       + Serv0605       - Group03       + Serv0605       - Group03       + Serv0605       - Group03       - Group03       - Group04	Show all		Days in t	baseline calculat	on Davs til	Istart	Period of	analysis							
- Service01       All Web Access       Transactoral       + Service02       + Service03       - Group02       + Service04       + Service05       - Service06       - Group02       + Service06       + Service06	- Service01       All Web Access       Transactor1	— Group01								~						
Interdancess     Immoduless       Transaction1     ✓       + Service03     ✓       - Group02     From rate       + Service03     Hefr       - Group02     From rate	Transctori     ✓     Arg. response     Hdh ✓     Throughput       + Service03       - Group02       + Service05       - Group03       + Service06	- Service01		20	uays	5	uaya	GHOICIAN		~						
Innectori         Innocation                • Service03             • Service04             • Service03             • Service04	Invractori         Image: Construction of the temperature         Image: Construction of temperature         Image: Constru	All Web Access			Item name											
		Transaction 1										Throughp	ut	~		
4-Service13         Acol           - Graup12         Acol           + Service13         Acol           - Graup13         Acol           + Service16         Acol	+ Service33 - Graup02 + Service04 - Graup03 - Graup03 + Service06 - Graup04	+ Service02			Throughput											
Service84     Service85     Group 03     Service06	+ Service84 + Service85 - Group18 + Service86 - Group84	+ Service03			Error rate				High	~						
+ Service05 - Group103 + Service06		- Group02													App	ly l
- Group 03 + Service06	- Group 83 + Service 88 - Group 84	+ Service04														
+ Service06	+ Service06 - Group04	+ Service05														
+ Service06	+ Service06 - Group04	- Group 03														
- Group 04																
		- Group 84														
+ Service07																

This example sets up monitoring items for Transaction1 of service Service01 of server group Group01. The following shows the settings for the monitoring items.

### **SLO monitor settings**

Table 3-13: Example settings under SLO monitor settings

Check box	Item name	Threshold	Check box	Trend monitoring
Selected	Avg. response	3000	Selected	5
Selected	Throughput	800	Selected	5
Selected	Error rate	1.0		

Legend:

--: Cannot be set

Under **SLO monitor settings**, the SLO definition items are specified as thresholds, and then trend monitoring is set up for average response time and throughput so as to promptly detect any error in the performance of the monitored service.

A potential service performance error must be detected at least five hours in advance because other personnel must be contacted to take corrective action in the event of a service performance error. For this reason, trend monitoring is set to 5 hours.

### **Error Predict. settings**

Table 3-14: Example settings under Error Predict. settings

Days in baseline calculation	Days till start	Check box	Item name	Sensitivity	Correlated item
20	5	Selected	Avg. response	High	Throughput
		Selected	Throughput	High	
		Selected	Error rate	High	

Legend:

--: Cannot be set

Under Error Predict. settings, 20 days' worth of service performance is to be used to calculate the baseline for performing monitoring based on typical service performance. Days till start is set to 5 because it was requested that monitoring be started five days later.

Out-of-range value detection is to be performed for all monitoring items. The sensitivity is set to high so that any service performance that veers from the baseline will be detected quickly. Out-of-range value detection with multiple monitoring items combined is also to be performed to improve the precision of out-of-range value detection.

### **Results of the tasks**

After setup of Web transaction Transaction1 and of the monitoring items for Service01 has been completed, the person who monitors all services decides to perform monitoring of Service01 and Transaction1. For an example of execution of monitoring, see 4.6.2 Example of execution for predictive error detection in the performance of processes in monitored services and the corrective action support methodology.

### 3.3.3 Example of setup for predictive error detection in the performance of systems running monitored services and the corrective action support methodology (working with Performance Management)

This subsection explains an example of predictive error detection in the performance of systems running monitored services, as discussed in 1.2 Linking with Performance Management to monitor service status (working with Performance Management).

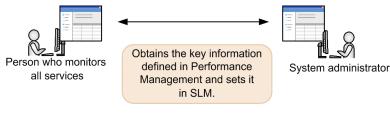
This subsection explains by way of example how to perform evaluation and setup based on given conditions to support predictive error detection in the system performance of hosts and middleware that provide monitored services and the corrective actions to take.

# (1) Prerequisites

The following are the conditions for this setup example:

- There is a service level agreement (SLA) regarding the service quality (service level) between the service's outsourcing company (service provider) and an outsourced contractor (data center). The data center is required to maintain the service level based on the SLA. SLOs defined on the basis of the SLA are specified in the same manner as in 3.3.1 Example of setup for predictive error detection in the performance of monitored services and the corrective action support methodology.
- The service group and monitored services have been registered in the same manner as in 3.3.1 Example of setup for predictive error detection in the performance of monitored services and the corrective action support methodology. Monitoring of the monitored services has stopped.
- The following figure shows the relationship among the personnel involved in this task.

Figure 3-40: Relationship among personnel involved in predictive error detection in the performance of systems running monitored services and the corrective action support methodology (setup example)



• Person who monitors all services

Adds the monitoring items for system performance for the services for which SLOs are defined.

To monitor the monitoring items for system performance in SLM, this person verifies the settings in Performance Management with the system administrator.

System administrator

The system administrator defines the monitoring items for system performance in Performance Management. This person provides the information needed for monitoring system performance in SLM to the person who monitors all services.

# (2) Collecting key field information for monitoring items

This subsection explains an example of multi-instance monitoring items. For single-instance monitoring items, there is no need to define key field information.

### Tasks required for setting up monitoring items in SLM

The person who monitors all services asks the system administrator to provide the information needed to monitor system performance in SLM. The system administrator checks the key field information (multi-instance records) collected by Performance Management and provides the information to the person who monitors all services. For an example of multi-instance records collected by Performance Management, see (7) Monitoring items for system performance.

### **Results of the tasks**

Because the key field information has been verified, the person who monitors all services decides to set up monitoring items for the system providing each monitored service.

## (3) Setting up monitoring items

### Tasks in SLM

The two types of monitoring item setup tasks are configuration information setup and monitoring setup. These types are explained below.

• Configuration information setup

The person who monitors all services decides to log in to SLM - Manager, display the Settings window, and then set up the configuration information.

To monitor system performance, you first set up configuration information for the monitored service. Setting up configuration information involves associating the business group with the monitored service and then setting up the monitored target. Monitoring items (such as CPU, HDD, and HEAP) are also set up for the monitored target.

The following shows an example of the setup.

Figure 3-41: Setup example of configuration information (business group setup)

Service Leve	el Manag	ement				user Help Lo	.ogout
🔂 Home	MM I	Real-time Monitor 🛛 🜆 🖲	Troubleshoot	EI Report		💥 Settings	
Setting menu		Configuration information settin	gs				
Add/Delete monitor		Service group Group01		Service Service01		Refresh configuration informa	ation
Web transaction setting		System performance monitor	Availability	monitor			
Configuration information se Monitor settings	ettings						
Monitor settings Start/Stop monitor			Monitor item settings				
		From the Business group list, select	business groups to associ	ate with the service.			
Services		Business groups	_				
		Business group	Host	Monitored target			
Show all		BGroup01	Host01				
— Group01		<b>D</b>	0 11	Agent02			
+ Service01		BGroup02	Host03				
+ Service02				Agent03			
+ Service03		BGroup03	Host04				
- Group02							
+ Service04							
+ Service05							
— Group 03							
+ Service06							
— Group 04							
+ Service07							
	- 11						
	- 11						
	- 11						
	- 11						
	- 11						
		L		To Maula	r item settings		
				To Monito	/ item settings		

In this figure, the business group to be associated with service Service01 of service group01 is selected.

Business group BGroup2 is associated with host Host03. Because Agent02 and Agent03 are running on host Host03, data collected by Agent02 and Agent03 will be monitored by SLM.

After selecting the business group, click the **To Monitor item settings** button to set up monitoring items for the monitored target.

The following shows an example of the setup.

	Home 🛃	Real-time Monitor	ESPO 1	Troubles	hoot		Repor	t												*	Settir	185
Setting m	nenu	Configuration informa	tion setting	ts							1.000					0.000	1000		101001111			
Add/Delete	e monitor	Service group Group(	1					Service Se	ervice01													
Web transa	action setting	System performance		- An	vailability	e monitor																
	ion information settings		and the second second			Bonneon																
Monitor se		Business group settings		fonitor iter	n settings																	
Start/Stop	monitor	Monitor items		elete																		
Services		Monitored target	Key field 1		Key field		Key field		Key field 4		Key field 5		Key field		Key field		Key field		Key field		Key field	
			Name	Value	Name	Value	Name	Value I	Name	Value	Name	Value	Name	Value								
	Show all	+ Host03																				
		Agent02																				
- Group		CP UKKey Firm	Van Ein Maar V	<u>_</u>	KeyField…		KeyField		eyField…		eyField***		KeyField***		KeyField***		KeyField***		KeyField…		KeyField…	
	ervice01	CFUCKeyPP	Keyrield	<i>.</i>	Keyrield		Keyheid	Ke	eyr leid	м	eyr leid		KeyField***		KeyField***		Keye leid		Keyr eidm		Keyr eld	
+ Se	ervice02																					
	ervice03																					
- Group	502																					
- Group + Se	o02 ervice04																					
- Group + Se + Se	o02 rvice04 rvice05	B																				
- Group + Se + Se - Group	o02 rvice04 rvice05 o03																					
- Group + Se + Se - Group + Se	002 ervice04 ervice05 003 ervice06																					
- Group + Se + Se - Group + Se - Group	02 mice04 mice05 003 mice05 004																					
- Group + Se + Se - Group + Se - Group	002 ervice04 ervice05 003 ervice06																					
- Group + Se + Se - Group + Se - Group	02 mice04 mice05 003 mice05 004																					
- Group + Se + Se - Group + Se - Group	02 mice04 mice05 003 mice05 004																					
- Group + Se - Group + Se - Group	02 mice04 mice05 003 mice05 004																					
- Group + Se + Se - Group + Se - Group	02 mice04 mice05 003 mice05 004																					
- Group + Se + Se - Group + Se - Group	02 mice04 mice05 003 mice05 004	1																				
- Group + Se + Se - Group + Se - Group	02 mice04 mice05 003 mice05 004																					
- Group + Se + Se - Group + Se - Group	02 mice04 mice05 003 mice05 004	0																				
- Group + Se + Se - Group + Se - Group	02 mice04 mice05 003 mice05 004	8																				

Figure 3-42: Setup example of configuration information (monitoring item setup)

Monitoring items can be set up for monitored target Agent03. Specify in monitoring item setup whether system information measured by Performance Management is to be associated with the monitored service for which the business group has been set.

In this figure, monitoring item CPU is set up for Agent03. For the value of Key field 1, C specified in Performance Management is specified.

<sup>3.</sup> Monitoring the Services to Be Monitored and Setup Required for Monitoring

• Monitoring setup

Once the configuration information has been set up, the person who monitors all services decides to specify the details of monitoring.

Based on the SLOs, monitoring items for the system that provides the monitored service are set up.

The following shows an example of the setup.

# Figure 3-43: Setup example of monitoring items for the system that provides the monitored service based on SLOs

Home 🛃	Real-time Monit	or	E Des	Troubleshoot		Report							×	Settin	g5
ietting menu	Monitor settings														
dd/Delete monitor	Service group	Group0	1		Service	Service01			Perio	d of analysis Short range 🚿	/				
eb transaction setting		SIO #	onitor set	tion						Predict. settings					
onfiguration information settings ionitor settings	Monitor item		r Thresho		Occurrenc	e frequency	-					a	Occurrence frequency (Times exceeded/measured)		
art/Stop monitor		Monitor	r Thresho	d	(Times ex	e frequency ceeded/measured)	Trend moni	tor	Monto	or Days in baseline calculation	Days till start	Sensitwity	(Times ex	ceeded/me	asured
	- Host03														
ervices	⇒ Agent03														
	CPUKK		±	30.0 %	1	2	✓ 5	hours		20 days	5 days	High V	1	/ 5	
Show all															
- Group01															
+ Service01															
+ Service02															
+ Service02 + Service03															
+ Service03															
+ Service03															
+ Service03 - Group02															
+ Service03 - Group02 + Service04 + Service05	I														
+ Service03 - Group02 + Service04 + Service05															
+ Service03 - Group02 + Service04 + Service05 - Group03															
+ Service03     - Group02     + Service04     + Service05     - Group03     + Service06															
+ Service03 = Group02 + Service04 + Service05 = Group03 + Service06 = Group04	I														
+ Service03     - Group02     + Service04     + Service05     - Group03     + Service06     - Group04															
+ Service03 = Group02 + Service04 + Service05 = Group03 + Service06 = Group04															
+ Service03 = Group02 + Service04 + Service05 = Group03 + Service06 = Group04															
+ Service03     - Group02     + Service04     + Service05     - Group03     + Service06     - Group04															
+ Service03 = Group02 + Service04 + Service05 = Group03 + Service06 = Group04															

This example sets up a monitoring item for Agent03 that was associated with service Service01 of service group Group01. The following shows the monitoring item settings.

### **SLO monitor settings**

### Table 3-15: Example settings under SLO monitor settings

Monitoring item	Monitoring	Threshold	Occurrence frequency (Times exceeded/measured)	Trend monitoring
СРИ	Select	30%	1/2	5

Under **SLO monitor settings**, the SLO definition items are specified as thresholds, and then trend monitoring is set up to promptly detect any error in the performance of the system running the monitored service.

A warning is set to be issued if the probability of exceeding the threshold is 1/2 or higher during the measurement period.

Any potential system performance error must be detected at least five hours in advance because other personnel must be contacted to take corrective action in the event of a system performance error. For this reason, trend monitoring is set to 5 hours.

### **Error Predict. settings**

### Table 3-16: Example settings under Error Predict. settings

Monitoring item	Monitoring	Days in baseline calculation	Days till start	Sensitivity	Occurrence frequency (Times exceeded/measured)
СРИ	Select	20 days	5 days	High	1/5

<sup>3.</sup> Monitoring the Services to Be Monitored and Setup Required for Monitoring

Under **Error Predict. settings**, 20 days' worth of service performance is to be used to calculate the baseline for performing monitoring based on typical system performance. **Days till start** is set to 5 because it was requested that monitoring be started five days later.

A warning is set to be issued if the probability of exceeding the threshold is 1/5 or higher during the measurement period.

Out-of-range value detection is to be performed for all monitoring items. The sensitivity is set to high so that any service performance the veers from the baseline will be detected quickly.

### **Results of the tasks**

Once setup has been completed for service Service01 of service group Group01, the person who monitors all services proceeds to set up monitoring items for the remaining monitored services in the same manner.

After setup has been completed for all monitored services, the person who monitors all services decides to perform monitoring. For an example of execution of monitoring, see 4.6.3 Example of execution for predictive error detection in the performance of systems running monitored services and the corrective action support methodology (working with Performance Management).

# 3.3.4 Example of setup for periodic evaluation of the status of monitored services

This subsection explains an example of periodic evaluation of the status of monitored services, as discussed in 1.1.3 Supporting creation of reports required for periodic reporting.

With respect to using SLM for periodic evaluation of the status of monitored services, this subsection explains by way of example how to perform evaluation and setup based on given conditions.

## (1) Prerequisites

The following are the conditions for this setup example:

- There is no agreement regarding service quality (service level) between the service's outsourcing company (service provider) and the outsourced contractor (data center). The data center is required to provide only its minimum level of monitoring.
- The outsourcing company's agent agrees to consider suggestions for system enhancements derived from the monthly service levels. The person who monitors all services at the data center is to report periodically to the outsourcing company's agent.
- The outsourced services are registered as monitored services as follows:
  - Service group: Group01

Services belonging to service group Group01: Service01 to Service03

• Service group: Group02

Services belonging to service group Group02: Service04 and Service05

• Service group: Group03

Service belonging to service group Group03: Service06

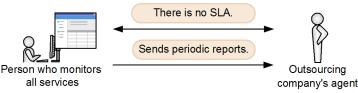
• Service group: Group04

Service belonging to service group Group04: Service07

• The following figure shows the relationship among the personnel involved in this task.

<sup>3.</sup> Monitoring the Services to Be Monitored and Setup Required for Monitoring

# Figure 3-44: Relationship among personnel involved in periodic evaluation of the status of monitored services (setup example)



· Person who monitors all services

Evaluates a threshold for each monitoring item because there is no SLA, and then sets up the monitoring items in the Settings window. This person also needs to report the monitoring results periodically to the outsourcing company's agent.

• Outsourcing company's agent

This person is in charge of providing the outsourced services. This person receives periodic reports from the person who monitors all services at the outsourced contractor. If periodic reports suggest system enhancements, this person evaluates the suggestions and authorizes them, as appropriate.

This person does not require that the person who monitors all services be responsible for management of the service level.

## (2) Defining thresholds

### Tasks required for setting up monitoring items in SLM

Based on the information provided by the outsourcing company's agent, such as the number of service users and the service description, the person who monitors all services defines thresholds as follows:

- Average response time: 3,000 milliseconds
- Throughput: 800 count/second
- Error rate: 1.0%

### **Results of the tasks**

Once thresholds have been defined, the person who monitors all services proceeds to set up monitoring items for each monitored service.

### (3) Setting up monitoring items

### Tasks in SLM

The person who monitors all services decides to log in to SLM - Manager to display the Settings window and set up monitoring items for the monitored services based on the defined thresholds.

The following shows a setup example of monitoring items for the monitored services based on the thresholds.

Figure 3-45: Setup example of monitoring items for the monitored services based on thresholds

Home		Real-time	e Monitor	-	Tro	ubleshoot	81	Report						*	Setting	
Setting menu		Monitor s	ettings													
Add/Delete monitor		Service	group Group!	)1			Service	Service01			Monitored	target	All Web A	Access		
Web transaction setting		SLO mo	nitor settings													
Configuration information : Appritor settings	ettings															
start/Stop monitor			Item name				Threshold			Unit	-		monitor			
			Avg. response	•			3000			in ms		24				
Services			Throughput				800			per sec		24	hou	rs		
			Error rate				1.0			%						
		Error Pr	edict. settings													
Show all		Days in	baseline calcul	ation [	) ays till :	start	Period of a	nalysis								
— Group01		30	days		1	days	Short rang	3	~							
- Service01								1-		•						
All Web Acces			Item name					Sensitivity			Correlated	items				
Transaction 1			Avg. respons	se .				Middle	~		None		~			
+ Service02			Throughput					Middle	$\vee$							
+ Service03			Error rate					Middle	~							
- Group02															App	b
+ Service04																
+ Service05																
- Group 03																
+ Service06																
- Group 04																
+ Service07																
- Jeiticeur																

This example sets up monitoring items for All Web Access of service Service01 of service group Group01. The following shows the monitoring item settings.

### **SLO monitor settings**

Table 3-17: Example settings under SLO monitor settings

Check box	Item name	Threshold	Check box	Trend monitoring
Selected	Avg. response	3000	Not selected	
Selected	Throughput	800	Not selected	
Selected	Error rate	1.0		

Legend:

--: Cannot be set

Under SLO monitor settings, the settings defined as thresholds are specified.

Because there is no agreement for service level management, neither trend monitoring nor out-of-range value detection is set up. However, **Days in baseline calculation** and **Days till start** are set to the defaults because these items must be specified.

### **Results of the tasks**

Once setup of service Service01 of service group Group01 has been completed, the person who monitors all services decides to set up monitoring items for the remaining monitored services in the same manner.

After setup is completed for all monitored services, monitoring is executed. For an example of execution of monitoring, see 4.6.4 Example of execution for periodic evaluation of the status of monitored services.



# **Performing Monitoring**

This chapter gives an overview of monitoring tasks by using SLM, and describes how to start and stop monitoring, monitoring of the status of monitored services, and execution examples of monitoring.

## 4.1 Overview of monitoring tasks using SLM

SLM supports stable operation of monitored services by enabling the monitoring persons to monitor the status of the services.

In a system with predefined SLOs, which are the evaluation metrics for the statuses of the monitored services, monitoring is performed so as to comply with the SLOs and to maintain the service level. SLM reports warnings based on the monitoring results before overages of thresholds occur. By taking an appropriate corrective action at the warning stage, you can comply with the SLOs and prevent errors from occurring in the performance of monitored services. You can also record and report compliance with SLOs by creating monthly reports of the monitoring results.

This section explains the procedure from start to stop of monitoring when SLM is used and the windows in SLM that are used for monitoring.

## 4.1.1 General monitoring procedure

The figure below shows the general procedure for using SLM to monitor the status of monitored services. This procedure assumes that the monitored services have been registered into SLM and that all the setup required for monitoring has been completed according to the procedures described in Chapter 3.

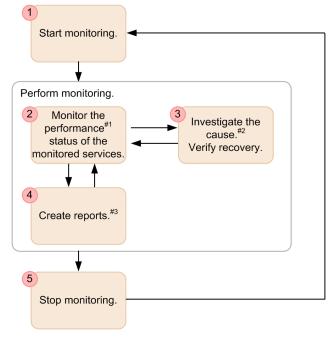


Figure 4-1: General procedure for monitoring the status of monitored services

- #1: By linking SLM with Performance Management, you can also monitor the performance of the systems that are providing monitored services.
- #2: You can check the timing of an event in question and investigate changes in the past data. You can use the obtained results to determine the cause.
- #3: You can display the performance data needed for report creation in a window and output it to a file.
- 1. Start monitoring.

For details about how to start monitoring, see 4.2.1 Starting monitoring.

2. Monitor the performance status of the monitored services.

<sup>4.</sup> Performing Monitoring

You can check the status of monitored services in a window. You can verify that the SLOs are being achieved, and also check for any unusual service performance values.

If you link SLM with Performance Management, you can also check the status of the systems that are providing the monitored services, such as hosts and middleware.

The login user can obtain the detailed status of a monitored service of interest based on the overall status of the service's service group that the user is in charge of monitoring or just check the detailed status of the specific monitored service (such as a newly added service or a service that has had problems in the past).

For details about how to monitor the status of monitored services, see 4.3 Monitoring the status of monitored services.

3. Investigate the cause and verify recovery.

If a problem is detected while a monitored service is being monitored or investigation is needed to respond to an inquiry from a user of a monitored service, you can check the timing of the problem and past data. Based on the obtained results, you can determine the cause of the problem and take an appropriate corrective action. After the problem has been resolved, verify that the monitored service's status has returned to normal.

For details about how to check the information that supports root cause investigation, see 4.4 Support methodology for root cause investigation when an error or warning is displayed for a monitored service.

4. Create reports.

When you need to create reports based on monitoring results, you can display performance data in the monitoring result window and output it to a file. This enables you to keep a record of compliance with the SLOs and optimize the report creation tasks.

For details about how to check and output the data needed for report creation, see 4.5 Creating reports.

5. Stop monitoring.

If you need to change monitoring item settings or SLM log output operations, you must first stop monitoring. For details about how to stop monitoring, see 4.2.2 Stopping monitoring.

To resume monitoring the monitored services, go back to step 1.

<sup>4.</sup> Performing Monitoring

### 4.2 Starting and stopping monitoring

To start monitoring, start the registered monitored services. To stop monitoring, stop the monitored services that are being monitored.

# 4.2.1 Starting monitoring

To start monitoring the target services, the service group administrator must log in to SLM and then specify the settings needed to start monitoring. When monitoring of the target services starts, monitoring also starts of the Web transactions set up for the corresponding monitored services.

## (1) Before you start

- Verify that you have the service group administrator permissions.
- Log in to SLM Manager.
  For details about how to log in, see 2.2.1 Logging in to SLM Manager.
- Verify that monitoring items have been set up. For details about how to set up monitoring items, see 3.2.9 Setting up the monitoring items for service performance.
- If you link SLM with Performance Management, verify that PFM Manager is running. For details about how to start PFM - Manager, see the description of the PFM - Manager setup procedure in *JP1/ Performance Management User's Guide*.
- If you link SLM with Performance Management, verify that the monitoring agents are running. For details about how to start monitoring agents, see the *JP1/Performance Management User's Guide*.

# (2) Procedure

The following shows the Settings window that is used in this task:

<sup>4.</sup> Performing Monitoring

JP1/Service Level Management Description

```
Step 1
```

Home	Real-time Monitor	Troubleshoot 🗉	Report	🕺 🛛 Settings
Setting menu	Start/Stop monitor			
Add/Delete monitor	Service group		Service	Monitored status
Web transaction setting	C Groupl1		Service01	Start
Configuration information se Monitor settings	Group01		Service02	Stop
-Start/Stop monitor	Group01		Service03	Stop
	Group02		Service04	Stop
Services	Group02		Service05	Stop
	Group03		Service06	Stop
Shon all	Group04		Service07	Stop
- Group01				
+ Service0				
+ Service8				
+ Service0				
- Group02				
+Service 8				
+ Service0				
— Group 03				
- Group 03 + Service0				
International Accession in which the rest of the local division in				
+ Service0				
+ Service0 - Group 04				
+ Service0 - Group 04				
+ Service0 - Group 04				
+ Service0 — Group 04				
+ Service() — Group ()4				
+ Service() — Group ()4				
+ Service0 - Group 04				
+ Service0 - Group 04				
+ Service0 - Group 04				
+ Service0 — Group 04				
+ Service0 - Group 04				
+ Service0 - Group 04				Start Store
+ Service0 - Group 04				Star Stop
+ Service0 - Group 04				Sigt Stop
+ Service() — Group ()4			Start/Stop monitor	

To start monitoring:

- 1. Click the **Settings** button.
- 2. In the Setting menu area, select Start/Stop monitor.

All monitored services whose monitoring is the login user's responsibility are listed in the Start/Stop monitor area.

- 3. In the displayed list of monitored services, select the check box for the monitored service whose monitoring is to be started.
- 4. Click the **Start** button.

Monitoring of the selected monitored service begins.

If the start processing is successful, Monitored Status changes to Start.

#### Monitoring process if an error occurs when monitoring begins while working with Performance Management

When you start monitoring by clicking the **Start** button, the  $\bigwedge$  (warning) icon might be displayed in the **Monitored Status** column in the **Start/Stop monitor** area and a message might be displayed. In such a case, an error might have occurred in either SLM - UR or PFM - Manager. If monitoring started successfully in SLM - UR or PFM - Manager, **Start** is displayed in the **Monitored Status** column. The following table describes the monitoring status and process in the event of an error:

Table 4-1: Monitoring	status and	process in the	event of an	error when	monitoring starts

No.	Monitoring status	Monitoring process
1	Start	Monitoring has started on SLM - UR and PFM - Manager.
2	Start 🕂	<ul> <li>One of the following statuses:</li> <li>An error has occurred in SLM - UR. SLM failed to start monitoring of All Web Access and the Web transactions that are the targets of SLM - UR processing.</li> </ul>

<sup>4.</sup> Performing Monitoring

No.	Monitoring status	Monitoring process
2	Start 🕂	SLM has successfully started monitoring of the availability monitor and the system performance that is the target of PFM - Manager processing.
		• An error has occurred in PFM - Manager.
		SLM has failed to start monitoring of the availability monitor and the system performance that is the target of PFM - Manager processing.
		SLM successfully started monitoring of All Web Access and the Web transaction that are the targets of SLM - UR processing.
3	Stop	Monitoring stopped on SLM - UR and PFM - Manager.

To determine the monitoring status of each monitoring agent for a monitored service for which the  $\Lambda$  (warning) icon is displayed, check the Real-time Monitor window or message logs.

## (3) Supplementary information

- When SLM Manager services are started, the following processing is performed based on the managerStartMode property value in SLM Manager's system definition file (jplitslm.properties):
  - When normal is specified for the managerStartMode property Stop processing is performed on all monitored services.
  - When restart is specified for the  $\verb+managerStartMode property$

Start processing is performed on a monitored service whose status is **Start** or **Start**  $\triangle$ . Stop processing is performed on a monitored service whose status is **Stop**.

## (4) Related topics

- 4.2.2 Stopping monitoring
- 10.6.1 Configuration of the Settings window
- 10.6.2 Services area
- 10.6.3 Setting menu area
- 10.6.20 Start/Stop monitor area

# 4.2.2 Stopping monitoring

When setting the following monitor items of a monitored service for which monitoring has once been started, it is necessary to stop the monitoring of the monitored service to change the settings for.

- Whether SLO monitoring has been implemented
- Whether to monitor trends
- Whether predictive error detection has been implemented
- Period of analysis of predictive error detection

To change SLM operations or add or delete monitored services, you must stop monitoring of all the monitored services. When monitoring of a monitored service is stopped, monitoring of the Web transactions set for that monitored service is also stopped.

<sup>4.</sup> Performing Monitoring

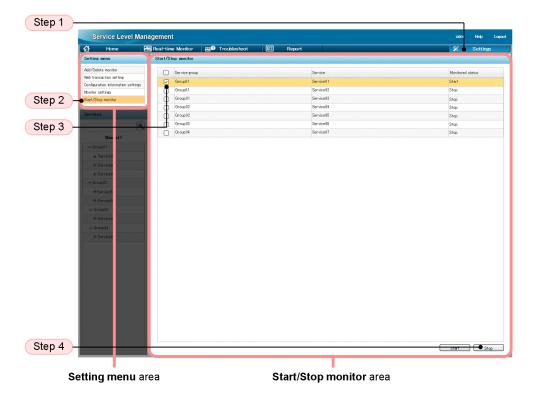
JP1/Service Level Management Description

# (1) Before you start

- Log in to SLM Manager.
   For details about how to log in, see 2.2.1 Logging in to SLM Manager.
- If you link SLM with Performance Management, verify that PFM Manager is running. For details about how to start PFM - Manager, see the description of the PFM - Manager setup procedure in *JP1/ Performance Management Planning and Configuration Guide*.
- If you link SLM with Performance Management, verify that the monitoring agents are running. For details about how to start monitoring agents, see the *JP1/Performance Management User's Guide*.

# (2) Procedure

The following shows the Settings window that is used in this task:



To stop monitoring:

- 1. Click the **Settings** button.
- 2. In the Setting menu area, select Start/Stop monitor.

All monitored services whose monitoring is the login user's responsibility are listed in the Start/Stop monitor area.

- 3. In the displayed list of monitored services, select the check box for the monitored service whose monitoring is to be stopped.
- 4. Click the **Stop** button.

Monitoring of the selected monitored service stops.

If stop processing is successful, Monitored Status changes to Stop.

JP1/Service Level Management Description

#### Monitoring process if an error occurs when monitoring stops while working with Performance Management

When you stop monitoring by clicking the **Stop** button, the **()** (warning) icon might be displayed in the **Monitored Status** column in the **Start/Stop monitor** area and a message might be displayed. In such a case, an error might have occurred in either SLM - UR or PFM - Manager. Even if monitoring stopped successfully in SLM - UR or PFM - Manager, **Start** is displayed in the **Monitored Status** column. The following table describes the monitoring status and process in the event of an error.

No.	Monitoring status	Monitoring process
1	Stop	Monitoring has stopped on SLM - UR and PFM - Manager.
2	Start !	<ul> <li>One of the following statuses:</li> <li>An error has occurred in SLM - UR. SLM failed to stop monitoring of All Web Access and the Web transactions that are the targets of SLM - UR processing. SLM has successfully stopped monitoring of the availability monitor and the system performance that is the target of PFM - Manager processing.</li> <li>An error has occurred in PFM - Manager. SLM failed to stop monitoring of the availability monitor and the system performance that is the target of PFM - Manager. SLM failed to stop monitoring of the availability monitor and the system performance that is the target of PFM - Manager processing. SLM successfully stopped monitoring of All Web Access and the Web transactions that are the targets of SLM - UR processing.</li> </ul>
3	Start	Monitoring has started on SLM - UR and PFM - Manager.

Table 4-2: Monitoring status and process in the event of an error when monitoring stops

To determine the monitoring status of each monitoring agent for a monitored service for which the (!) (warning) icon is displayed, check the Real-time Monitor window or message logs.

#### Forcibly stopping monitoring

If a problem such as an error in a monitoring agent occurs and SLM cannot handle the problem, you can forcibly stop monitoring of the monitored services. The methods for forcibly stopping monitoring are as follows:

- Select one monitored service and stop monitoring of that service.
- Click the **OK** button in the forced stop dialog box that is displayed when stopping of monitoring fails.

Forced stop enables you to set the monitoring status to stop even for a service whose stop processing has already failed.

To stop monitoring normally, eliminate the cause of the stop error that occurred in the monitored service on which forced stop was executed. Then start and stop monitoring again to synchronize the monitoring status of the monitoring items between SLM and Performance Management.

#### (3) Related topics

- 3.2.9 Setting up the monitoring items for service performance
- 4.2.1 Starting monitoring
- 5.6.1 Editing the system definition files
- 10.6.1 Configuration of the Settings window
- 10.6.2 Services area
- 10.6.3 Setting menu area
- 10.6.20 Start/Stop monitor area

#### 4. Performing Monitoring

# 4.2.3 Notes about starting and stopping monitoring

If monitoring agents are terminated individually while target services are being monitored, transmission of system performance data from the monitoring agents to SLM stops. If this happens, the system performance data existing immediately before monitoring was stopped remains displayed in SLM but no new system performance data is displayed. You must restart the monitoring agents to display the system performance data in SLM.

If monitoring is stopped forcibly, inconsistency occurs in the monitoring status between SLM and Performance Management and data obtained after monitoring stopped might be sent from Performance Management.

In such a case, a message indicating that the transmitted data is to be discarded is output repeatedly in SLM. Therefore, if you stopped monitoring forcibly, you must cancel the SLM monitoring setting in Performance Management.

<sup>4.</sup> Performing Monitoring

### 4.3 Monitoring the status of monitored services

SLM enables you to check the results of monitoring the status of monitored services for all service groups together. You can also select monitored services in a specific service group and check the details about them.

Monitoring of the status of monitored services enables you to detect in advance on the basis of the (!) (warning) icon displayed in the window the potential for failures to satisfy SLOs as well as the potential for occurrence of service performance errors. When a failure to meet an SLO has actually occurred, the (2) (error) icon is displayed in the window to let you know that immediate corrective action is needed.

#### 4.3.1 Checking the status of the monitored services of all service groups

You can obtain the status of the monitored services of all service groups, identify the monitored services that require special attention, and check on errors and warnings in the monitored services.

Use the Home window to perform this checking. You can check the following in the Home window:

• Status of the monitored services in each service group

You can check a bar graph indicating the percentage of the monitored services that are in error, warning, normal, and monitoring stopped status (among the total number of monitored services that belong to a service).

• Monitored services that require special attention in monitoring

You can check the monitored services that require special attention in monitoring based on the status of the monitored services over the past seven days, such as monitored services that produce frequent warnings.

• Events that occurred in all monitored services

You can check a list of events, such as errors and warnings, that occurred in all monitored services over the past seven days.

The information displayed in the Home window is refreshed every three seconds.

# (1) Before you start

- Log in to SLM Manager.
   For details about how to log in, see 2.2.1 Logging in to SLM Manager.
- Verify that monitoring has started. For details about how to start monitoring, see 4.2.1 Starting monitoring.

## (2) Procedure

The following shows the Home window that is used in this task:

<sup>4.</sup> Performing Monitoring

JP1/Service Level Management Description

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Events in the last 7days area

To check the status of all service groups' monitored services:

1. If the Home window is not displayed, click the **Home** button.

The **Current service group status summary**, **Caution service**, and **Events in the last 7 days** areas are displayed. You can determine from the information provided in each area the status of all monitored services being monitored or the status of specific monitored services.

Note that the steps beginning in 2 below are examples of checking procedures.

- 2. Check the **Current service group status summary** area and determine the status of all monitored services in the entire service group subject to monitoring.
- 3. Check the **Caution service** area to identify the monitored services that require special attention.
- 4. Check the **Events in the last 7 days** area to obtain the error and warning statuses of the monitored services identified in step 3.

For each event that you have checked, click the **Status** column to change its status from **Unread** to **Read**.

Once all monitored services show normal status, the check is complete.

If errors and warnings are displayed in these areas or some alarm status is displayed, investigate the cause. If you click the **Details** column in the **Events in the last 7 days** area, the Troubleshoot window is displayed. You can determine in the Troubleshoot window the time the event causing the status of concern occurred. For details about how to check the timing of events causing errors and warnings, see 4.4.1 Checking the timing of an event causing an error or warning.

## (3) Related topics

- 4.3.2 Checking the status of the monitored services in a specific service group
- 4.4.1 Checking the timing of an event causing an error or warning
- 10.2.1 Configuration of the Home window
- 10.2.2 Current service group status summary area
- 10.2.3 Caution service area
- 10.2.4 Events in the last 7 days area

#### 4. Performing Monitoring

JP1/Service Level Management Description

# 4.3.2 Checking the status of the monitored services in a specific service group

If you know the monitored services that require special attention, such as new services whose monitoring has just started and existing monitored services that have had problems in the past, use the Real-time Monitor window to determine their status. You can check the following in the Real-time Monitor window:

• Status of specific service groups or monitored services

You can check the status of specific service groups or monitored services.

- Events that occurred in specific service groups or monitored services You can check a list of events, including errors and warnings, that have occurred in specific service groups or monitored services.
- Performance charts for monitored targets of specific monitored services You can view line graphs of the current performance of specific monitored services.

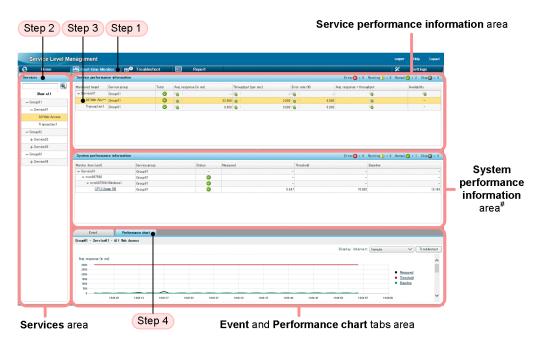
The information displayed in the Real-time Monitor window is refreshed every three seconds.

## (1) Before you start

- Log in to SLM Manager. For details about how to log in, see 2.2.1 Logging in to SLM - Manager.
- Verify that monitoring has started. For details about how to start monitoring, see 4.2.1 Starting monitoring.

## (2) Procedure

The following shows the Real-time Monitor window that is used in this task:



#: The **System performance information** area is displayed when SLM is linked with Performance Management.

To check the status of monitored services in a specific service group:

<sup>4.</sup> Performing Monitoring

JP1/Service Level Management Description

1. Click the **Real-time Monitor** button.

The Services, Service performance information, and System performance information<sup>#</sup> areas and the Event and Performance chart tabs area are displayed. In the Event and Performance chart tabs area, the Event tab is selected.

2. In the Services area, select a service group, a monitored service, or a monitored target of a monitored service.

Performance information for the selected service group, monitored service, or monitored target of a monitored service is displayed in the **Service performance information** and **System performance information**<sup>#</sup> areas and the **Event** and **Performance chart** tabs area. Check the displayed information.

If you selected a monitored target of a monitored service, go to step 4.

- 3. In the **Service performance information** area, select a monitored service or a monitored target of a monitored service.
- 4. In the **Event** and **Performance chart** tabs area, click the **Performance chart** tab to view a graph of the current status of the monitored target of the monitored service.

A performance chart is displayed indicating the current status of the selected monitored target of the monitored service.

If the display is all normal in the Service performance information and System performance information<sup>#</sup> areas, the check is complete.

If errors, warnings, or alarm statuses are displayed in the **Service performance information** or **System performance information**<sup>#</sup> area or the **Event** and **Performance chart** tabs area, investigate the cause. In the **Event** and **Performance chart** tabs area, selecting the **Performance chart** tab and then clicking the **Troubleshoot** button in the **Event** and **Performance chart** tabs area displays the Troubleshoot window. In the Troubleshoot window, you can check the timing of the event causing the error, warning, or alarm status that is of interest. For details about how to check the timing of events causing errors and warnings, see 4.4.1 Checking the timing of an event causing an error or warning.

#

The **System performance information** area is displayed when SLM is linked with Performance Management. Selecting a monitoring item displayed in the **System performance information** area does not display performance information in the **Event** and **Performance chart** tabs area.

# (3) Related topics

- 4.3.1 Checking the status of the monitored services of all service groups
- 4.4.1 Checking the timing of an event causing an error or warning
- (3) Services area in 10.1.2 Common items on all windows
- 10.3.1 Configuration of the Real-time Monitor window
- 10.3.3 Service performance information area
- 10.3.4 System performance information area
- 10.3.5 Event and Performance chart tabs area (Event tab selected)
- 10.3.6 Event and Performance chart tabs area (Performance chart tab selected)

# 4.4 Support methodology for root cause investigation when an error or warning is displayed for a monitored service

When an event, such as an overage of a threshold or a trend leading to an overage of a threshold, is detected in a monitored service, you can use SLM to investigate the cause.

This section discusses what you can do when you use SLM for root cause investigation and explains the procedures.

SLM enables you to do the following to determine the cause of an error or warning:

- Check the timing of the event that caused the error or warning
- Check past service performance

After you have handled the error or warning, you can check whether the monitored service's status has returned to normal.

If you link SLM with Performance Management, you can check not only the performance of the monitored services, but you can also check the systems that are providing the monitored services, such as hosts and middleware, for the causes of errors and warnings.

#### 4.4.1 Checking the timing of an event causing an error or warning

When an error or warning is displayed for a monitored service, you can check a performance chart for the monitored service's monitored target to determine the timing of the event that caused the error or warning.

Use the Home window, Real-time Monitor window, and Troubleshoot window for this checking.

If you want to check the overall status of the service group, you identify the target monitored service, and then use the Home window to investigate the cause of the event. If you are focusing in on a specific monitored service and want to investigate the cause of an event that occurred in that monitored service, use the Real-time Monitor window.

# (1) Before you start

- Log in to SLM Manager.
   For details about how to log in, see 2.2.1 Logging in to SLM Manager.
- Verify that monitoring has started. For details about how to start monitoring, see 4.2.1 Starting monitoring.

# (2) Procedure

The following shows the Home window and the Troubleshoot window:

• Home window

<sup>4.</sup> Performing Monitoring

JP1/Service Level Management Description

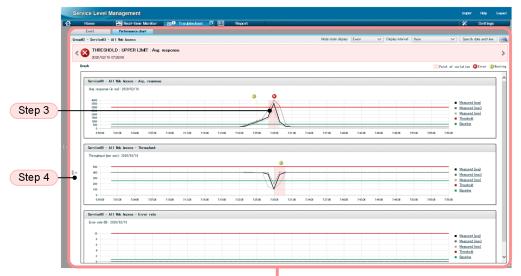
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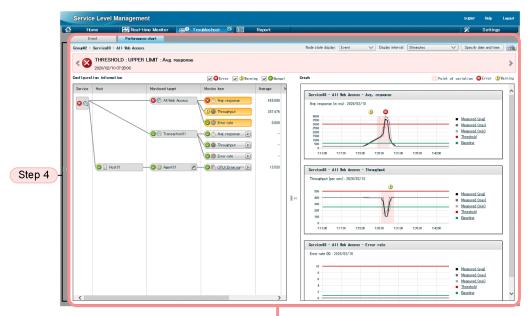
Step 2 Events in the last 7 days area

• Troubleshoot window



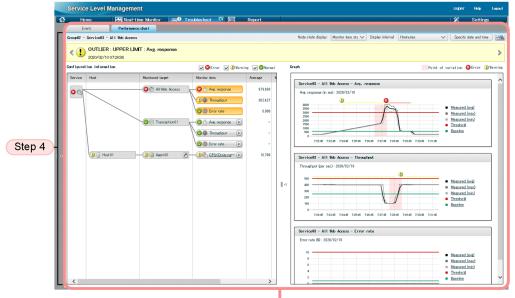
Event and Performance chart tabs area

• Troubleshoot window (displaying configuration information)



Event and Performance chart tabs area

• Troubleshoot window (displaying Monitor item state on the Performance chart tab)



Event and Performance chart tabs area

To check the timing of an event causing an error or warning:

1. If the Home window is not displayed, click the Home button.

The **Current service group status summary**, **Caution service**, and **Events in the last 7 days** areas are displayed. If you need to determine the monitored service to be investigated from the event issuance status, go to step 2. If you know which monitored service is to be investigated, go to step 3.

2. In the Home window, from the **Events in the last 7 days** area, select an error or warning that you want to check, then click the **Details** column of the corresponding line.

For the selected error or warning, the **Performance chart** tab on the Troubleshoot window is displayed. Note that the **Performance chart** tab is displayed only when an event related to service performance is selected.

3. In the Troubleshoot window, in the **Event** and **Performance chart** tabs area, check the performance chart displayed on the **Performance chart** tab to determine the timing of the event that caused the error or warning.

4. Performing Monitoring

Check the performance chart and look for the time period in which the average value for service performance started to veer significantly from the baseline. On a performance chart, a colored band indicates a timeframe during which a significant change in service performance occurred. The timeframe indicated by the colored band might be when the event causing the error or warning occurred.

You can also determine the timing of the event causing the error by selecting a node state display from the **Node state display** pull-down menu. If **Event** is selected from the **Node state display** pull-down menu, an icon indicating the event is displayed above the time the event occurred. This is useful for determining the base for troubleshooting because the status at the time the event occurred is displayed. If **Monitor item state** is selected from the **Node state display** pull-down menu, a band indicating the current events is displayed on the chart. You can check the transition of events by following the displayed band.

You can change the item displayed in the performance chart. Click a display item to display the Select Items to Display dialog box, and then select the items that you want to display. For details about the display items, see 10.4.4 Event and Performance chart tabs area (Performance chart tab selected).

4. Click >>> to display configuration information.

Configuration information helps you identify the monitoring item of the monitored service that resulted in the error. If necessary, you can display performance information as a graph by clicking the  $\ge$  button associated with the monitoring item. You can also check whether a problem has occurred in the system, such as with a host or middleware. If a problem has occurred in the system, click the  $\boxed{>}$  button to connect to Performance Management for further investigation, if necessary.

Based on the information for the specific time period, check the CPU usage, memory usage, or disk usage for that period to evaluate the cause of the error or warning.

You can also check in the performance chart past service performance. For details about how to check past service performance, see 4.4.2 Checking past data.

#### Note

You can also display the Troubleshoot window from the Real-time Monitor window. The following explains how to check the timing of an event causing an error or warning from the Real-time Monitor window and shows the Real-time Monitor window used in the procedure:

• Real-time Monitor window

	lanagement						super Help	Lopout
Home	🕬 Feal-time Monitor 🌒 🗃 🕄	Troubleshoot	Report				🕺 Settings	
•	Service performance information					Error	r🔕:0 Warning 🕕:1 Normal 🧭:1 Stop	0:0
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	Group02 - Service03					Service Host		
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- #: The **System performance information** area is displayed when SLM is linked with Performance Management.
- 1. Click the **Real-time Monitor** button.

The Services, Service performance information, and System performance information areas and the Event and Performance chart tabs area are displayed.

2. In the **Services** area of the Real-time Monitor window, select a service group, a monitored service, or a monitored target of a monitored service that you want to investigate.

If you select a monitored target of a monitored service, go to step 4 (the task in step 3 is not necessary).

3. In the **Service performance information** area of the Real-time Monitor window, select the monitored service's monitored target that you want to investigate.

If threshold value monitoring, trend monitoring, or out-of-range value detection resulted in the error or warning, select the monitored target of a monitored service that you want to investigate based on the information, including icons, displayed in the **Service performance information** area. If you are monitoring system availability information by linking with Performance Management, the availability information is displayed in the **Availability** column in the **Service performance information** area. Check the displayed icon information and select the monitored service's monitored target that you want to investigate.

Note that you can select a monitored target of a monitored service on the **Event** tab in step 4 without selecting it here.

4. In the Real-time Monitor window, on the **Event** tab in the **Event** and **Performance chart** tabs area, check information about the event, and then click the **Details** column of the error or warning that you want to check.

On the **Event** tab, you can check information about events that occurred in threshold value monitoring, trend monitoring, or out-of-range value detection. If you click the **Details** column, messages and a performance chart for the service performance resulting in the error or warning are displayed in the **Event** and **Performance chart** tabs area in the Troubleshoot window.

5. In the Troubleshoot window, in the **Event** and **Performance chart** tabs area, check the performance chart displayed on the **Performance chart** tab to determine the timing of the event that caused the error or warning.

4. Performing Monitoring

Check the performance chart and look for a time period in which the average value for service performance started to veer significantly from the baseline. On the performance chart, a colored band indicates a timeframe during which a significant change in service performance occurred. The timeframe indicated by the colored band might be when the event causing the error or warning occurred. You can change the item displayed in the performance chart. Click a display item to display the Select Items to Display dialog box, and then select the items that you want to display. For details about the

display items, see 10.4.4 Event and Performance chart tabs area (Performance chart tab selected).

6. Click  $\gg$  to display configuration information.

Configuration information helps you identify the monitoring item of the monitored service that resulted in the error. If necessary, you can display performance information as a graph by clicking the  $\geq$  button associated with the monitoring item. You can also check whether a problem has occurred in the system, such as with a host or middleware. If a problem has occurred in the system, click the  $\geq$  button to connect to Performance Management for further investigation, if necessary.

### (3) Related topics

- 4.3.1 Checking the status of the monitored services of all service groups
- 4.3.2 Checking the status of the monitored services in a specific service group
- 4.4.3 Verifying the recovery of monitored services after taking corrective action
- (3) Services area in 10.1.2 Common items on all windows
- 10.2.1 Configuration of the Home window
- 10.2.2 Current service group status summary area
- 10.2.3 Caution service area
- 10.2.4 Events in the last 7 days area
- 10.3.1 Configuration of the Real-time Monitor window
- 10.3.3 Service performance information area
- 10.3.4 System performance information area
- 10.3.5 Event and Performance chart tabs area (Event tab selected)
- 10.3.6 Event and Performance chart tabs area (Performance chart tab selected)
- 10.4.1 Configuration of the Troubleshoot window
- 10.4.3 Event and Performance chart tabs area (Event tab selected)
- 10.4.4 Event and Performance chart tabs area (Performance chart tab selected)

#### 4.4.2 Checking past data

You can check performance charts of a monitored service's past performance and use the information for root cause investigation.

If you find a warning sign in a performance chart or were contacted by users of a monitored service, you can check the monitored service's past service performance data as necessary.

<sup>4.</sup> Performing Monitoring

JP1/Service Level Management Description

If you link with Performance Management, you can also check the past data of the system, such as the host or middleware, that is providing the monitored service.

This subsection explains how to check past service performance only using the Troubleshoot window.

### (1) Before you start

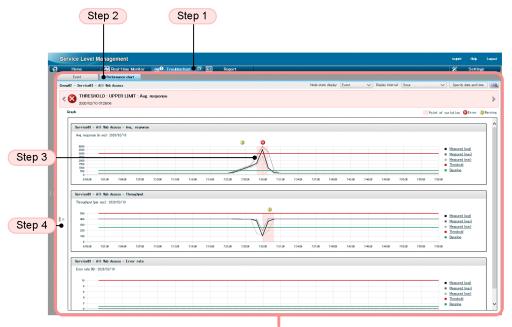
- Before you start SLM Manager, specify the URL of PFM Web Console in SLM's system definition file. For details about the settings in the system definition file, see 5.4 Setting up a linkage between SLM and Performance Management.
- Log in to SLM Manager. For details about how to log in, see 2.2.1 Logging in to SLM - Manager.
- Verify that monitoring has started.

For details about how to start monitoring, see 4.2.1 Starting monitoring.

- If you link SLM with Performance Management, verify that PFM Manager is running. For details about how to start PFM Manager, see the *JP1/Performance Management Planning and Configuration Guide*.
- If you link with Performance Management, verify that the prerequisites for PFM Web Console are satisfied. For details about the prerequisites for PFM Web Console, see the *JP1/Performance Management Planning and Configuration Guide*.

### (2) Procedure

• Troubleshoot window

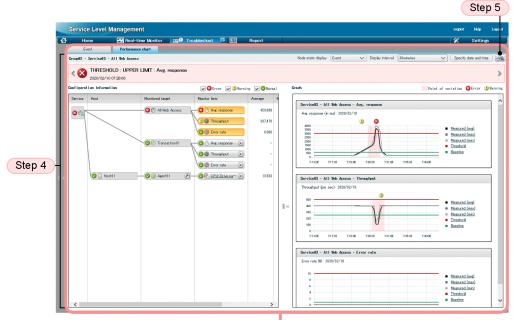


Event and Performance chart tabs area

• Troubleshoot window (with the configuration information displayed)

<sup>4.</sup> Performing Monitoring

JP1/Service Level Management Description



Event and Performance chart tabs area

• Troubleshoot window (with the access log displayed)

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					2020/02/13 17:18:11.392 78 200 /p1itolm/GetCautionS	Ch
					2020/02/10 17:10:11.502 203 200 /jp1kslm/GetEventList	- Ste
					2020/02/13 17:18:14:205 16 402 /	
					2020/02/13 17:18:14.312 107 200 //p lkslm/p litslm/pp 2020/02/13 17:18:14.382 63 200 //p lkslm/GetCautionS4	
					2020/02/13 17:18:14.392 63 200 /jp:lktm/GetCautionS- 2020/02/13 17:18:14.509 280 200 /jp:lktm/GetEventList	
					2020/02/13 17:18:14.863 334 200 /p http://doi.org/10.1000/	
					2020/02/13 17:18:15.892 47 200 /jp1kslm/p1itslmjsp	
<				>		

Event and Performance chart tabs area

To check past data:

1. Click the **Troubleshoot** button.

The Event and Performance chart tabs area is displayed with the Event tab selected.

2. In the **Event** and **Performance chart** tabs area, click the **Performance chart** tab.

Performance charts of monitored targets of the selected monitored service are displayed in the **Event** and **Performance chart** tabs area.

3. Use the performance charts to check past service performance.

Check the performance charts and look for a time period during which the average value for service performance started to veer significantly from the baseline. On a performance chart, a colored band indicates a timeframe during which a significant change in service performance occurred. The timeframe indicated by the colored band might be when the event causing the error or warning occurred.

<sup>4.</sup> Performing Monitoring

4. Click >>> to display configuration information and add to the performance charts any monitoring item that you want to check.

Display the configuration information and select a desired monitoring item. The performance chart for the selected monitoring item is displayed. Check the performance charts as needed.

If SLM is linked with Performance Management, you can locate erroneous hosts in the SLM window, but not erroneous processes. Also, if errors and warnings have occurred in a Performance Management monitoring item that cannot be monitored by SLM, SLM cannot display such errors and warnings. Log in to Performance Management as needed to check for errors. Clicking the *interval and the set of the* 

If you use a single sign-on to log in to Performance Management, the following conditions must be satisfied:

- SLM Manager and PFM Web Console both use JP1/Base authentication and a common JP1/Base to manage users.
- The user of the product to link with is defined in JP1/Base, and SLM Manager operation permission (JP1\_ITSLM\_Admin or JP1\_ITSLM\_User) and PFM operation permission (JP1\_PFM\_Operator) are set for that user. For details, see 5.3.4 Setting up the users who will be using Performance Management (JP1 authentication mode).
- The user of the product to link with is logged in to SLM Manager.
- 5. Click Ma to display the Access log area to investigate problems in Web system processing.

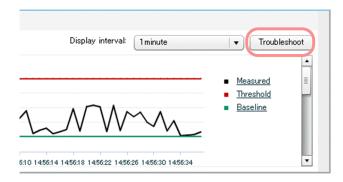
If you are recording access log, click *Model* to display the **Access log** area.

You can then investigate any problems in Web system processing using the access log for the time period during which the error occurred.

You can use the displayed past service performance for troubleshooting purposes.

You can display the Troubleshoot window also from the Real-time Monitor window. To do this, select the monitored target of the monitored service in the **Services** area of the Real-time Monitor window, and then click the **Performance chart** tab.

In the Event and Performance chart tabs area, clicking the Troubleshoot button displays the Troubleshoot window.



# (3) Related topics

- 4.3.1 Checking the status of the monitored services of all service groups
- 4.3.2 Checking the status of the monitored services in a specific service group
- 4.4.3 Verifying the recovery of monitored services after taking corrective action
- (3) Services area in 10.1.2 Common items on all windows

#### 4. Performing Monitoring

- 10.4.1 Configuration of the Troubleshoot window
- 10.4.3 Event and Performance chart tabs area (Event tab selected)
- 10.4.4 Event and Performance chart tabs area (Performance chart tab selected)
- 10.4.5 Access log area (Log data tab selected)
- 10.4.6 Access log area (Ranking tab selected)

# 4.4.3 Verifying the recovery of monitored services after taking corrective action

After you have taken the necessary corrective action to resolve an error or warning, you can verify that the monitored service has recovered and its status has returned to normal.

## (1) Before you start

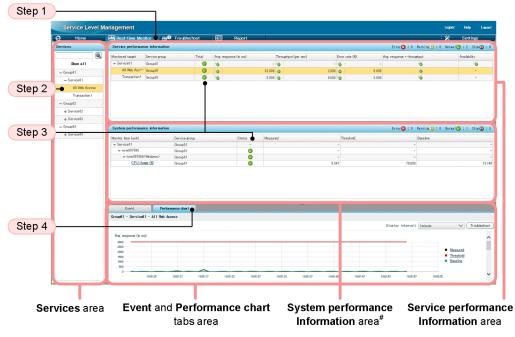
• Log in to SLM - Manager.

For details about how to log in, see 2.2.1 Logging in to SLM - Manager.

• If you link SLM with Performance Management, verify that PFM - Manager is running. For details about how to start PFM - Manager, see the *JP1/Performance Management Planning and Configuration Guide*.

# (2) Procedure

The following shows the Real-time Monitor window that is used in this task:



#: The **System performance information** area is displayed when SLM is linked with Performance Management.

To verify recovery of a monitored service after taking corrective action:

1. Click the Real-time Monitor button.

<sup>4.</sup> Performing Monitoring

JP1/Service Level Management Description

The Services, Service performance information, and System performance information<sup>#</sup> areas and the Event and Performance chart tabs area are displayed.

- 2. From the Services area, select a monitored target of a monitored service.
- 3. In the Service performance information and System performance information<sup>#</sup> areas, check the status of the monitored target of the monitored service.

Verify that the icon displayed under **Total** in the **Service performance information** area has returned to normal. If the icon for normal status is not displayed, the monitored service might not have recovered correctly. Check the cause again, and then take an appropriate corrective action.

Also, verify that the icon displayed under **Status** in the **System performance information** area<sup>#</sup> has returned to normal. If the icon for normal status is not displayed, the monitored service might not have recovered correctly. Check the cause again, and then take an appropriate corrective action.

If the monitored service has recovered from an error detected by out-of-range value detection, verification is complete. If it has recovered from an error detected by threshold value monitoring, go to step 4, if necessary.

4. In the **Event** and **Performance chart** tabs area, click the **Performance chart** tab to verify that the monitored target of the monitored service has recovered and its status has returned to normal.

The current status of the monitored target of the monitored service is displayed as a performance chart. Verify that the current status of the monitored target of the monitored service shown at the right end of performance chart is below the threshold.

If everything has returned to normal, verification of recovery is complete.

#

The **System performance information** area is displayed when SLM is linked with Performance Management. Selecting a monitoring item displayed in the **System performance information** area does not display performance information in the **Event** and **Performance chart** tabs area.

## (3) Related topics

- 4.4.1 Checking the timing of an event causing an error or warning
- 4.4.2 Checking past data
- (3) Services area in 10.1.2 Common items on all windows
- 10.3.1 Configuration of the Real-time Monitor window
- 10.3.3 Service performance information area
- 10.3.4 System performance information area
- 10.3.5 Event and Performance chart tabs area (Event tab selected)
- 10.3.6 Event and Performance chart tabs area (Performance chart tab selected)

### 4.5 Creating reports

SLM can assist you in reporting the service performance status of monitored services.

#### 4.5.1 Overview of report creation

SLM helps you create reports efficiently by displaying monitoring items to be checked as reports and saving reports as CSV files.

SLM enables you to achieve the following:

- Displaying in windows as reports the accumulated service performance, system performance, and availability information data for monitored services.
- Saving as templates the view/hide settings for service performance, system performance, and availability information for monitoring items of monitored services.
- Outputting values in performance charts to CSV files.

For details about the Report window, see 10.5 Report window and the windows displayed from the Report window.

#### (1) Items that can be displayed in reports

SLM enables you to display in windows the following items as reports for purposes of verification (note that this information cannot be output to CSV files):

Service performance

Displays the service monitoring status of monitored services that are monitored in SLM. The items that can be displayed as service performance for monitored services include the monitored targets, monitoring items (units), average values, SLO compliance rates, and comparisons (as percentages) to previous periods.

This is the service performance of All Web Access or Web transactions under a selected monitored service.

System performance

When SLM is linked with Performance Management for monitoring of monitored services, displays the monitoring status of the hosts that are providing the monitored services. The items that can be displayed as system performance include the hosts, monitored targets, monitoring items (units), average values, SLO compliance rates, and comparisons (as percentages) to previous periods.

If a selected monitored service is not linked with Performance Management, this information is all blanks.

Availability information

When SLM is linked with Performance Management for monitoring of monitored services, displays service availability, MTTR, and MTBF as availability information.

If the monitored service is not running availability monitoring, the hyphen (-) is displayed as the value of service availability, MTTR, and MTBF.

Service availability overview

Displays the service start and stop times during the report period for the monitored services for which availability monitoring is running.

If availability monitoring is not running for a selected monitored service, this information is blanks. However, if availability monitoring is not running currently but was run at some point during the specified report interval, those availability monitoring results are displayed.

The following table provides the details of the items that can be displayed in reports.

<sup>4.</sup> Performing Monitoring

No.	Item	Items in table	Value to be displayed
1	Service performance	Monitored target	Name of the selected monitored target
2		Monitor item (unit)	<ul><li>Average response time</li><li>Throughput</li><li>Error rate</li></ul>
3		Average <sup>#1</sup>	• For average response time: <i>Total average response time during the report</i> <i>interval / number of requests during the report</i> <i>interval</i> (milliseconds)
			• For throughput: Number of requests during the report interval (excluding requests whose responses timed out before SLM - UR could receive them) / operation time during the report interval (count/second)
			<ul> <li>For error rate: (Number of times HTTP status returned an error response during the report interval + number of requests whose responses timed out before SLM</li> <li>UR could receive them) / number of requests during the report interval (%)</li> </ul>
4		SLO compliance rate <sup>#1</sup>	(1.0 - duration of overages of a threshold / operation time for one month) × 100 (%)
5		Comparison to a previous period (as a percentage) <sup>#2, #3</sup>	(Average response time during report interval / average response time during comparison period for the report interval - 1.0) $\times$ 100 (%)
6	System performance	Host	Host name of the selected monitored service
7		Monitored target	Name of the monitoring agent contained in the host
8		Monitor item (unit)	Name of a monitoring item contained in the monitoring agent
9		SLO compliance rate <sup>#1</sup>	(1.0 - duration of overages of a threshold / operation time for one month) × 100 (%)
10		Average <sup>#1</sup>	Average value for the monitoring item
11	_	Comparison to a previous period (as a percentage) <sup>#2, #3</sup>	(Average response time during report interval / average response time during comparison period for the report interval - $1.0$ ) × $100$ ) (%)
12	Availability info	Service availability % <sup>#2</sup>	(Sum of all operation periods during report interval/(sum of all operation periods during report interval + sum of all error periods during report interval) $\times$ 100) (%)
13		MTTR <sup>#1</sup>	Sum of all error periods during report interval / number of error periods during report interval (minutes)
14		MTBF <sup>#1</sup>	Sum of all operation periods during report interval / number of error periods during report interval (minutes)
15	Service availability overview	Date and time <sup>#4</sup>	Date and time an event related to availability monitoring occurred during the report interval

#### Table 4-3: Details of items that can be displayed in reports

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No.	Item	Items in table	Value to be displayed
16	Service availability overview	Event	One of the following events related to availability monitoring that occurred during the report interval: • Service stop • Service recovery • Start of service monitoring • Stop of service monitoring

#1

The value is rounded to the first decimal place.

#2

The value is rounded to the second decimal place.

#3

For a comparison to a previous period, the percentage is calculated for the monitored service's service performance or system performance, and the table header and the period used for comparison depend on the report interval setting. The following table shows the relationship between the report interval and the previous period to which the percentage applies.

Table 4-4: Relationship between report interval and previous period to which percentage applies

No.	Report interval	Table header	Period used for comparison
1	1 day	VS previous day	Day immediately preceding the start date
2	1 week	VS previous week	Seven days immediately preceding the start date
3	1 month	VS previous month	From the same date in the previous month to the preceding day
4	3 months	VS previous quarter	From the same date three months ago to the preceding day

#4

Displayed in the format YYYY/MM/DD hh:mm, based on the SLM - Manager's time zone.

# (2) Performance charts displayed in reports

You can display performance charts in reports in addition to the monitoring items described in subsection (1). The displayed performance chart information can also be output to a CSV file.

A performance chart for a specified period (year or month) is displayed for each monitoring item. In the Preview report window, you can display a maximum of 10 monitoring items of your choice.

The axes and display range of each performance chart are as follows:

• Ordinate: Monitoring item

The display range is from the minimum value in the report interval to the maximum value in the displayed month. If an SLO threshold value is greater than the maximum value, the SLO threshold value becomes the maximum value.

• Abscissa: Date (days)

The display range is from 1 to the last day of the report interval.

The following table describes the information that can be displayed in performance charts for the monitoring items.

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Table 4-5:	Information	displayed in	performance charts	3
------------	-------------	--------------	--------------------	---

No.	Type of line graph	Information that is displayed
1	Maximum-value line	Line graph connecting the maximum measurement values.
2	Minimum-value line	Line graph connecting the minimum measurement values.
3	Average-value line	Line graph connecting the average measurement values.
4	SLO threshold value	Line graph connecting the monitoring item's threshold values.

*Note*: Measurement values obtained when the throughput is 0 are not used.

Plotting intervals of performance charts depend on the report interval settings.

The following table shows the relationship between the report interval and the performance chart's plotting interval.

Table 4-6: Relationship between report interval and performance chart's plotting interval

No.	Report interval	Plotting interval of performance chart
1	1 day	Aggregate value for every 30 minutes
2	1 week	Aggregate value for two hours
3	1 month	Daily aggregate value
4	3 months	Daily aggregate value

Note that the plotting interval of a performance chart is the same as the interval of data output to a CSV file.

## (3) CSV file format

SLM enables you to output the data for performance charts displayed in reports to CSV files. You can output a maximum of 50 monitoring items to a CSV file.

This subsection explains the CSV file name, output format, and output character encoding. It also presents output examples.

#### File names

The following table shows the file names that are displayed by default.

No.	Report interval	File name	Interval in graph display
1	1 day	report_ <i>YYYYMMDD</i> _d.csv	30 minutes
2	1 week	report_ <i>YYYYMMDD</i> _w.csv	2 hours
3	1 month	report_ <i>YYYYMM</i> _m.csv	1 day
4	3 months	report_ <i>YYYYMM</i> _q.csv	1 day

Legend:

YYYYMMDD

YYYY, MM, and DD indicate the report start date selected in the Report window. You can change the file names.

#### **Output format**

The first line displays header information and the lines beginning with line 2 display data. The data is displayed in the same order as on performance charts displayed in the Report window.

<sup>4.</sup> Performing Monitoring

• Correspondence between header information and data

The table below describes the correspondence between the header information that is output to the first line and the data that is output to the lines beginning with line 2.

You can select the monitoring items to be output to a CSV file. If necessary, you can edit or add templates and set the monitoring items to be output to CSV files.

Table 4-8:	Correspondence between the header information and the data beginning on line
	2

No.	Monitoring item	Header information#	Data beginning on line 2
1		Date	Date and time SLM acquired the data
2	Average response	Average	Average value of the average response times
3	time	Max	Maximum value of the average response times
4		Min	Minimum value of the average response times
5	Throughput	Average	Average throughput value
6		Max	Maximum throughput value
7		Min	Minimum throughput value
8	Error rate	Average	Average error rate value
9		Max	Maximum error rate value
10		Min	Minimum error rate value
11	Name of a	Average	Monitoring item's average value
12	monitoring item for a monitoring agent	Max	Monitoring item's maximum value
13		Min	Monitoring item's minimum value

Legend:

--: Not applicable

Note

An average response time obtained when the average response time and throughput values are both 0 is treated as no data obtained, and is therefore not included in the average, maximum, and minimum values.

Similarly, an error rate obtained when the error rate and throughput values are both 0 is treated as no data obtained, and is therefore not included in the average, maximum, and minimum values.

#

Under the header information output to a CSV file, the entries for Average, Max, and Min are displayed in this order for each monitoring item. The header information is displayed in the following format:

monitored-target-name / monitoring-item-name

For monitored-target-name and monitoring-item-name, the following information is displayed: monitored-target-name = All Web Access | Web-transaction-name | host-name / monitoring-agent-name monitoring-item-name = average-response-time | throughput | error-rate | name-of-monitoring-agent'smonitoring-item

• Format of data

The data that begins on line 2 is displayed in the following format:

YYYY/MM/DD hh:mm, AA....AA

*YYYY/MM/DD hh:mm* indicate the date (*year/month/date*) and time (*hour:minute*) the data was acquired by SLM.

<sup>4.</sup> Performing Monitoring

*AA....AA* indicates the comma-separated data items (values) acquired for each monitoring item. Average response time is in milliseconds.

#### **Output character encoding**

The character encoding used is UTF-8.

#### **Output examples**

Performance charts are output to a CSV file in the same order they are displayed in the Preview report window. In the output example below, the monitored target is All Web Access and some of the data is omitted.



Note that in a report output for a month, if some of a day's data is missing for a reason such as the number of responses acquired by SLM - UR was zero, the header information is displayed, but no values are displayed.

#### Output example when some of a day's data is missing

```
Date,All Web Access/Average/Average,All Web Access/Average/Max,All Web Access/
Average/Min,All Web Access/Throughput/Average,...
2012/07/04 00:00,,,0.0,0.0,0.0,,,
2012/07/04 00:00,,,0.0,0.0,,,
```

Data corresponding to the response time (Average, Max, and Min) is not output.

If the aggregate data for a day is missing for a reason such as monitoring of the monitored target of the monitored service was stopped, the entire line for that day is omitted.

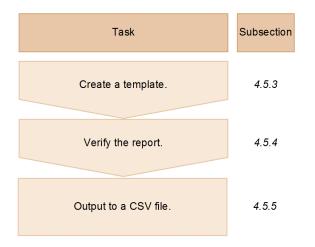
#### Output example when aggregate data for a day is omitted

```
Date,All Web Access/Average/Average,All Web Access/Average/Max,All Web Access/
Average/Min,All Web Access/Throughput/Average,...
2012/07/04 00:00,2.0,3.0,1.0,20.0,30.0,10.0,200.0,300.0,100.0
2012/07/06 00:00,2.0,3.0,1.0,20.0,30.0,10.0,200.0,300.0,100.0
2012/07/07 00:00,2.0,3.0,1.0,20.0,30.0,10.0,200.0,300.0,100.0
```

No line is displayed for 2012/07/05 because there was no data for that day.

## 4.5.2 General procedure for creating a report

The following figure shows the general procedure when SLM is used to create a report:



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1. Create a template.

You can create a template with desired monitoring items specified. This eliminates the need to specify the monitoring items for each monitored service.

For details about how to create templates, see 4.5.3 Creating report templates.

2. Verify the report.

You can display the monitoring items specified in the template in the window. For details about verifying the report, see 4.5.4 Verifying report data in the window.

3. Output to a CSV file.

You can output the items displayed in the window in step 2 to a CSV file. For details about how to output to CSV files, see 4.5.5 Outputting report data.

#### 4.5.3 Creating report templates

You can use templates when you output reports for monitored services.

SLM supports two types of templates, as described in the following table.

Table 4-9: Types of templates

Туре	Description
Default template	When a new monitored service is added in SLM, a default template is provided for that monitored service. This template is named Default.
	You can change the default template settings, but you cannot create, rename, or delete a default template.
User-created template	This is user-created report settings saved as a template. You can create a template for each monitored service and share it with other users who are permitted to access that monitored service. Once you have created a template, you can change its
	Default template

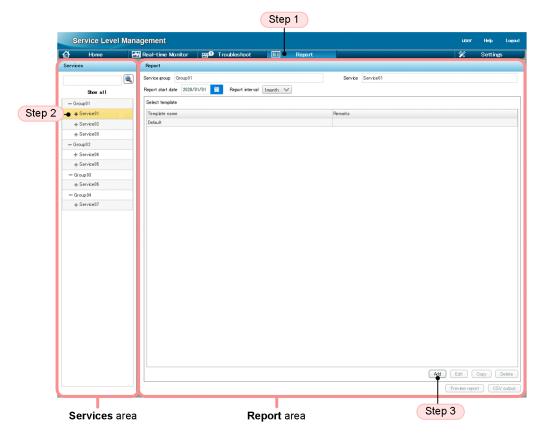
## (1) Before you start

- Log in to SLM Manager.
   For details about how to log in, see 2.2.1 Logging in to SLM Manager.
- Verify that monitoring has started. For details about how to start monitoring, see 4.2.1 Starting monitoring.

## (2) Procedure

The following shows the Report window and the Add template window that are used in this task:

• Report window



• Add template window

5	Template name Service perforn System perforn	nance   Show (	X Hide	Remarks			
	Availability info	<u> </u>	Hide				
	Graphical displa	0	Піде				
Step 4 -	Service	Host		Monitored tar	Access	itor item Avg. response	- ^
				S Transact	tion 1	Throughput Error rate Avg. response Throughput	
					V	Error rate	+ ~
	Disp	olay order	Host		Monitored target	Monitor item	
	\$	1	-		All Web Access	Avg. response	
	\$		-		All Web Access	Throughput	
	\$	3	-		All Web Access	Error rate	

• Report window (with a template added)

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Step 5	)

Service Leve											user	Help	Logo
Home	-iv	Real-time Mo	nitor	Bag❶ Tr	oubleshoot	31	Report				*	Setting	3
rvices		Report											
		Service group	Group01					Service	Service01				
Show all	_	Report start date	2020/01/	'01 🛗	Report interv	al 1month 🚿							
- Group01		Select template											
+ Service01		Template name						Remarks					
+ Service02		Default											
+ Service03		template 1											
Group02													
+ Service04													
+ Service05													
Group 03													
+ Service06													
Group 04 + Service 07													
										Add	Edit	Copy	Deletr
											Preview repo	rt CSM	outp

To create a report template:

- 1. Click the **Report** button.
- 2. From the Services area, select the monitored service for which a report is to be output.
- 3. In the **Report** area, click the **Add** button.

The Add template window is displayed. You define a new template in this window.

- 4. Specify a name for the template and the items that you want to display, and then click the Save button. When you select monitoring items for graphical display, the selected items are displayed in a table. After you have specified the items that you want to display and you then click the Save button, the template is saved.
- 5. Verify that the added template is displayed in the **Report** area.

Verify that the new template has been added to Template name.

If you want to change the contents of a saved template, select the template and then click the **Edit** button. After you change settings, click the **Save** button to apply the changes.

## (3) Related topics

- (3) Services area in 10.1.2 Common items on all windows
- 10.5.1 Configuration of the Report window
- 10.5.3 Report area
- 10.5.4 Add template window
- 10.5.6 Copy template window

# 4.5.4 Verifying report data in the window

## (1) Before you start

- Log in to SLM Manager. For details about how to log in, see 2.2.1 Logging in to SLM - Manager.
- Verify that monitoring has started. For details about how to start monitoring, see 4.2.1 Starting monitoring.

# (2) Procedure

The following shows the Report window and the Preview report window that are used in this task:

• Report window

			Ste	ep 3	Step 1				
	Service Level	Mana	gement				user	Help	Logout
	🔂 Home	- W	Real-time Monitor	🗐 🖤 Troubleshoot	📧 🌢 Report		*	Settings	
	Services		Report						
		۹	Service group Group01			Service Service01			
	Show all	9	Report start date 2020/	n/01 🛗 Report interval 👔	month 🗸				
	- Group01		Select template						
Step 2 —	All Web Access		Template name			Remarks			
otop 2	Transaction 1		Default						
Stop 4	+ Service02								
Step 4	+ Service03								
	— Group02								
	+ Service04								
	+ Service05								
	- Group 03								
	+ Service06 - Group 04								
	+ Service07								
	+ •••••••								
							Add Edit C	Copy	elete
							Preview repor	t CSV	output
	Services a	rea			Report are	a	Step -	4	

• Preview report window

Preview report Report start date 2015	/05/15	Report interval 1month				
Report start date 2015	00710	report interval Imonth			1	<u>^</u>
Service performance						
Monitored target	Monitor item (unit)	Average	SLO complia	ance ratio VS	S previous month	
All Web Access	Avg. response (in m	s)	796	100	59.2	
All Web Access	Throughput (per sec	:)	401	100	0.3	
All Web Access	Error rate 00		0	100	-0.3	
Transaction 1	Avg. response (in m	s)	-	-	- ~	
Transaction1	Throughout (par. car	0		-		
System performance						
Host	Monitored target	Monitor item (unit)	Average	SLO compliance ratio		
Host01	Agent01	CPU <drive name="">=<c> (%)</c></drive>		5	100 0.0	
	10	0.0	-		-	
Service availability overvi	199					
Date and Time			Event			
2015/05/15 00:00			Service Monitoring Started			
All Web Access - Avg. Maximum Maximum 2000		SLO threshold value		-0-0-0-0	Performance	e chart
2000 1500 1000						

To verify report data in a window:

- 1. Click the **Report** button.
- 2. From the Services area, select the monitored service for which a report is to be output.
- 3. In **Report start date**, specify the start date for the report. Alternatively, from the **Report interval** pull-down menu, select the period that you want to check.

If you want to output data for the current month, you can skip this step.

4. Select a template and then click the **Preview report** button.

The Preview report window is displayed.

Select either **Default** or an added template, and then display the report. The Preview report window displays a comprehensive evaluation table and a performance chart for the specified period for the monitored target of the monitored service.

5. In the Preview report window, check the status of the monitored target of the monitored service over the specified period.

Check the information output to the report for the status of the monitored target of the monitored service.

## (3) Related topics

- 4.5.5 Outputting report data
- 4.5.6 Notes on when some service performance data has not been acquired
- 4.5.7 Notes on when a threshold is changed during the specified report interval
- 4.5.8 Notes about time zone differences from one host to another
- (3) Services area in 10.1.2 Common items on all windows
- 10.5.1 Configuration of the Report window
- 10.5.3 Report area
- 10.5.7 Preview report window

#### 4. Performing Monitoring

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# 4.5.5 Outputting report data

This subsection explains how to output service performance for a specified period to a CSV file.

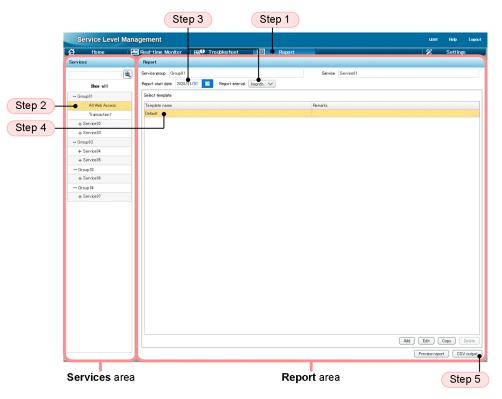
# (1) Before you start

- Log in to SLM Manager.
   For details about how to log in, see 2.2.1 Logging in to SLM Manager.
- Verify that monitoring has started. For details about how to start monitoring, see 4.2.1 Starting monitoring.

# (2) Procedure

The following shows the Report window that is used in this task:

• Report window



To output report data:

- 1. Click the **Report** button.
- 2. From the Services area, select a monitored service for which a report is to be output.

The status of the monitored target of the selected monitored service for the current month is displayed in the **Report** area.

This status is displayed as a comprehensive evaluation table and a performance chart. To check the status for the current month, go to step 5.

3. In **Report start date**, specify a start date for the report. Alternatively, from the **Report interval** pull-down menu, select a desired period that you want to check.

If you want to output data for the current month, you can skip this step.

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A comprehensive evaluation table and a performance chart for the specified period are displayed in the **Report** area for the monitored target of the monitored service.

4. Select a template.

This step is necessary if you use a template to output a report of the monitored service. If you do not use a template or you output a report of system performance, you can skip this step.

5. Click the CSV output button.

A dialog box is displayed to confirm whether to save the file. From the **Save** drop-down list, select **Save As**. The Download Files dialog box is displayed. Save the file at a desired location.

#### Important

If the selected monitored service or template had been deleted when the **CSV output** button is clicked, an empty CSV file is output. In such a case, an error message indicating that the selected monitored service or template had been deleted is output to the message logs.

If the CSV file has been saved, report output is complete.

If no aggregate data is available for a monitoring item in the data output as a CSV file, no value is displayed for that item in the performance chart.

If no aggregate data is available for all monitoring items in the data output as a CSV file, no line is output for the corresponding time in the performance chart.

#### (3) Related topics

- 4.5.4 Verifying report data in the window
- 4.5.6 Notes on when some service performance data has not been acquired
- 4.5.7 Notes on when a threshold is changed during the specified report interval
- 4.5.8 Notes about time zone differences from one host to another
- (3) Services area in 10.1.2 Common items on all windows
- 10.5.1 Configuration of the Report window
- 10.5.3 Report area

# 4.5.6 Notes on when some service performance data has not been acquired

If service performance data has not been acquired for some periods and a report is displayed in the window, some limitations apply to display of the report data.

This subsection explains how report data is displayed in comprehensive evaluation tables and performance charts when some service performance data has not been acquired.

# 🛛 Тір

Limitations to the report data displayed in a comprehensive evaluation table and performance chart depend on the report interval. The available report intervals are one day, one week, one month, and three months, and their service performance acquisition intervals are different. The report interval is one month in the

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examples presented in (1) Comprehensive evaluation table that is displayed when some service performance data has not been acquired and (2) Performance chart that is displayed when some service performance data has not been acquired. This means that the interval at which service performance is acquired is one day. The values in comprehensive evaluation tables and performance charts are based on the interval at which service performance is acquired.

The table below shows the interval at which service performance is acquired for each report interval. Based on the specified report interval, replace the corresponding information provided in (1) Comprehensive evaluation table that is displayed when some service performance data has not been acquired and (2) Performance chart that is displayed when some service performance data has not been acquired with the correct information.

No.	Report interval	Display interval
1	1 day	30 minutes
2	1 week	2 hours
3	1 month	1 day
4	3 months	1 day

Table 4-10:	Display	interval	for each	report interval
-------------	---------	----------	----------	-----------------

# (1) Comprehensive evaluation table that is displayed when some service performance data has not been acquired

If some of the service performance data has not been acquired, there are limitations to the data that is displayed in a comprehensive evaluation table. The limitations differ depending on the specified report interval. The table below describes the data that is displayed in a comprehensive evaluation table when the report interval is set to one month. For the data that is displayed when the report interval is one day, one week, or three months, see *Hint*, above.

Table 4-11: Data displayed in a comprehensive evaluation table when some service performance
data has not been acquired (for a report interval of one month)

No.	Evaluation item	Period for which data is mis			
		Less than one day At least one day but le than one month		One month or more	
1	Average value	Displays the average value for the month, including days for which there is less than a full day's worth of data. If the number of days on which data has been acquired is less than the full month, the average value for the month is calculated from only the acquired data.	Displays the average value for the month, excluding the missing days.	Displays a hyphen (–).	
2	SLO compliance rate	Displays the SLO compliance rate for the month, including the days for which there is less than one day's worth of data.	Displays the SLO compliance rate for the month, excluding the missing days.		
3	Comparison to previous period (percentage) <sup>#</sup>		previous period of item 1 above. If not been acquired, displays a hyphen		

#

The displayed table headers depend on the specified report interval. For the table header that is displayed for each report interval, see Table 4-4: Relationship between report interval and previous period to which percentage applies.

# (2) Performance chart that is displayed when some service performance data has not been acquired

If some of the service performance data has not been acquired, there are limitations to the data that is displayed in a performance chart. The limitations differ depending on the specified report interval. The table below describes the data that is displayed in a performance chart when the report interval is set to one month. For the data that is displayed when the report interval is one day, one week, or three months, see *Hint*, above.

No.	Type of line graph	e graph Period for which data is missing						
		Less than one day At least one day but less than one month		One month or more				
1	Threshold-value line	The threshold for each day is plotted, including for the days with less than a full day's worth of data, and a line graph is drawn based on those values.	The threshold for each day is plotted, excluding the missing days, and a line graph is displayed based on those values.	Not displayed.				
2	Maximum-value line	The maximum value of each day is plotted, including the days with less than a full day's worth of data, and a line graph is drawn based on those values.	The maximum value for each day is plotted, excluding the missing days, and a line graph is displayed based on those values. <sup>#2</sup>					
3	Average-value line	The average value for each day is plotted, including the days with less than a full day's worth of data, and a line graph is drawn based on those values. <sup>#1</sup>	The average value for each day is plotted, excluding the missing days, and a line graph is displayed based on those values. <sup>#2</sup>					
4	Minimum-value line	The minimum value for each day is plotted, including the days with less than a full day's worth of data, and a line graph is drawn based on those values.	The minimum value for each day is plotted, excluding the missing days, and a line graph is displayed based on those values. <sup>#2</sup>					

Table 4-12: Data displayed in a performance chart when some service performance data has not
been acquired (for a report interval of one month)

#### Note

An average response time obtained when the average response time and throughput values are both 0 is treated as no data obtained. Therefore, it is not included in the average, maximum, and minimum values.

Similarly, an error rate obtained when the error rate and throughput values are both 0 is treated as no data obtained. Therefore, it is not included in the average, maximum, and minimum values.

#### #1

When using a day for which less than a full day's worth of data was acquired, the average value for that day is calculated using only the acquired data.

#### #2

A missing day is displayed as a gap in the line graph. If a day for which a full day's worth of data is available is both preceded and followed by a missing day, that day is displayed as a point.

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#### (3) Related topics

- 4.5.4 Verifying report data in the window
- 4.5.5 Outputting report data
- 10.5.7 Preview report window

## 4.5.7 Notes on when a threshold is changed during the specified report interval

If a threshold is changed during the specified report interval and a report is displayed in the window, some limitations apply to the display of report data.

This subsection explains how report data is displayed in comprehensive evaluation tables and performance charts when a threshold is changed during the specified report interval.

## (1) Comprehensive evaluation table that is displayed when a threshold is changed during the specified report interval

If a threshold is changed during the specified report interval, there are limitations to the data that is displayed in a comprehensive evaluation table. The table below describes the data that is displayed in a comprehensive evaluation table.

No	Evaluation item	Data that is displayed
	the specified report	rt interval
Table 4	-13: Comprehensive ev	valuation table that is displayed when a threshold is changed during

Table 4.40. O support and in a support of the table that is disclosed when a thread ald is the super definition

No.	Evaluation item	Data that is displayed
1	Average value	Displays the average value for the specified report interval.
2	SLO compliance rate	Displays the compliance rate of the thresholds for the specified report interval. For the threshold compliance rate, data is retained at the plotting interval <sup>#1</sup> for each specified report interval. Therefore, when the report interval is one month and threshold is not monitored for a 30-minute period, the threshold for that period is not used for the calculation of the threshold compliance rate.
		However, if a period during which threshold value monitoring was not running is intermixed with periods during which threshold value monitoring was running in a 30-minute interval, the threshold compliance rate is calculated assuming that the threshold compliance was met for the period during which threshold value monitoring was not running.
3	Comparison to previous period (percentage) <sup>#2</sup>	Displays the percentage of the average value for the specified report interval compared to that for the previous period.

#1

The plotting interval depends on the specified report interval. For the correspondence between report interval and plotting interval, see Table Table 4-6: Relationship between report interval and performance chart's plotting interval. If the plotting interval is 30 minutes, the ranges are XX:00:00 to XX:29:59 and XX:30:00 to XX:59:59 (in the format *hour:minute:second*, where XX is 00 to 23).

#2

The displayed table headers depend on the specified report interval. For the table header that is displayed for each report interval, see Table Table 4-4: Relationship between report interval and previous period to which percentage applies.

## (2) Performance chart that is displayed when a threshold is changed during the specified report interval

If a threshold is changed during the specified report interval, there are limitations to the data that is displayed in a performance chart. The table below describes the data that is displayed in a performance chart.

Table 4-14: Performance chart that is displayed when a threshold is changed during the specified report interval

No.	Type of line graph	Data that is displayed
1	Threshold-value line	The thresholds are plotted at the plotting intervals <sup>#</sup> for the specified report interval, and a line graph is drawn based on those values.
		For example, if the report interval is one month, the maximum value is displayed for the day on which the threshold is changed.
2	Maximum-value line	The maximum values are plotted at the plotting intervals <sup>#</sup> for the specified report interval, and a line graph is drawn based on those values.
3	Average-value line	The average values are plotted at the plotting intervals <sup>#</sup> for the specified report interval, and a line graph is drawn based on those values.
4	Minimum-value line	The minimum values are plotted at the plotting intervals <sup>#</sup> for the specified report interval, and a line graph is drawn based on those values.

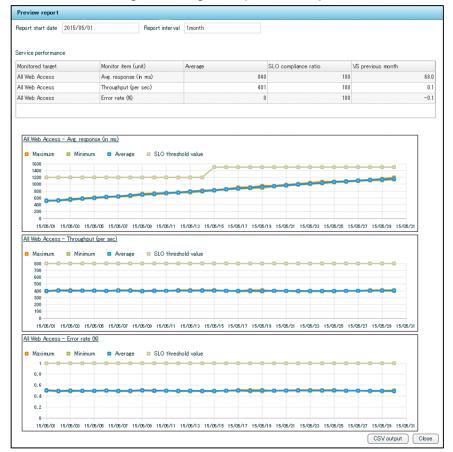
#

The plotting interval depends on the specified report interval. For the correspondence between the report interval and the plotting interval, see Table 4-6: Relationship between report interval and performance chart's plotting interval.

The following figure shows a comprehensive evaluation table and performance chart example when a threshold was changed during the specified report interval.

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## Figure 4-2: Comprehensive evaluation table and performance chart example when a threshold was changed during the specified report interval



This example displays report data beginning on May 1, 2015. It shows that the threshold for monitoring item average response time was changed on May 15, 2015.

#### (3) Related topics

- 4.5.4 Verifying report data in the window
- 4.5.5 Outputting report data
- 10.5.7 Preview report window

#### 4.5.8 Notes about time zone differences from one host to another

To display reports correctly, the time zone of the host on which SLM - Manager is installed must match the time zone of the computer from which the monitoring person is logged in to SLM - Manager.

This subsection explains the totals time and data for reports when the time zones do not match.

#### (1) Time periods subject to monthly or daily totals

The monthly and daily totals in reports are obtained from the values aggregated for one month and for one day, respectively, based on the time zone of the host on which SLM - Manager is installed. For example, if the time zone at the host where SLM - Manager is installed is GMT + 0900 and the time zone of the computer where the monitoring

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person is logged in to SLM - Manager is GMT, the time period subject to data collection for April 1, 2012 is from  $2012/04/01 \ 00:00:00 + 0900$  to  $2012/04/01 \ 23:59:59 + 0900$ .

#### (2) Date and time display in performance charts

The time displayed in a performance chart might be shifted depending on the time zone of the host on which SLM -Manager is installed and the time zone of the computer from which the monitoring person is logged in to SLM - Manager.

The following describes the cases where the time displayed in a performance chart is shifted.

• When the time of the host on which SLM - Manager is installed is ahead of the time of the computer from which the monitoring person is logged in to SLM - Manager, the time displayed in a performance chart is shifted behind by the time difference (rounded up by a day).

For example, if the time zone of the host on which SLM - Manager is installed is GMT + 0900 and the time zone of the computer from which the monitoring person is logged in to SLM - Manager is GMT, the service performance for 2012/04/30 is displayed in a performance chart in a report as being for 2012/04/29.

• When the time of the computer from which the monitoring person is logged in to SLM - Manager is more than 24 hours ahead of the host on which SLM - Manager is installed, the time displayed in a performance chart is shifted ahead by the time difference (rounded down by a day).

For example, if the time zone of the host on which SLM - Manager is installed is GMT - 1200 and the time zone of the computer from which the monitoring person is logged in to SLM - Manager is GMT + 1200, the service performance for 2012/04/29 is displayed in a performance chart in a report as being for 2012/04/30.

#### (3) Time displayed in CSV files

When reports are output to CSV files, each line displays the date the data was totaled by the host on which SLM - Manager is installed.

For example, if the time zone of the host on which SLM - Manager is installed is GMT + 0900 and the time zone of the computer from which the monitoring person is logged in to SLM - Manager is GMT, the time displayed in graphs in the window is shifted behind by one day but the time displayed in CSV files is not shifted; that is, the time at the host on which SLM - Manager is installed is displayed.

#### (4) Related topics

- 4.5.4 Verifying report data in the window
- 4.5.5 Outputting report data
- 10.5.7 Preview report window

#### 4.5.9 Other notes about report creation

#### (1) A nonexistent calendar date

A nonexistent date in a specified report interval is not displayed for the items or performance charts in reports or in CSV files. For example, if a report's start date is May 31 and the report interval is one month, the dates subject to totaling in the report interval are from May 31 through June 30, and June 31 is excluded because it does not exist in the calendar. For a comparison percentage to the previous month, the dates subject to totaling would be May 1 through May 30 (because April 31 does not exist in the calendar).

<sup>4.</sup> Performing Monitoring

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#### (2) Handling of data that exceeds the report retention period

SLM retains report data for five years. A report start date must be less than five years prior to the current system time of the computer on which the Home window is displayed (it cannot be for the exact same date five years ago or any earlier date).

If the report interval and the period for calculating comparison percentages to previous periods includes a point in time that falls before the report retention period, see the information provided in 4.5.6 Notes on when some service performance data has not been acquired.

## (3) Report output when a monitoring item name includes a comma or a double quotation mark

If the name of a monitoring item added in the **Configuration information settings** area includes a comma (, ) or a double quotation mark ("), that character is replaced with an underscore (\_) in CSV files.

<sup>4.</sup> Performing Monitoring

This section provides execution examples for the following scenarios, which were described in Chapter 1 and in 3.3 Examples of setup of the monitoring items:

- Predictive error detection in the performance of monitored services and the corrective action support methodology
- Predictive error detection in the performance of processes in monitored services and the corrective action support methodology
- Predictive error detection in the performance of systems running monitored services and the corrective action support methodology
- Periodic evaluation of the status of monitored services

# 4.6.1 Example of execution for predictive error detection in the performance of monitored services and the corrective action support methodology

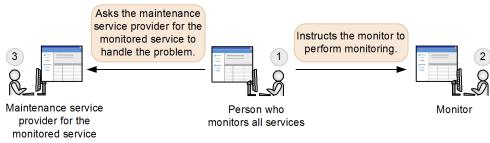
This subsection explains by way of example how to use SLM to execute predictive error detection in the performance of monitored services and the corrective actions to take, based on given conditions.

#### (1) Prerequisites

The conditions for this execution example are as follows:

- Registration of monitored services and the setup required for predictive error detection have been completed and monitoring has already started.
- The following figure shows the relationship among the personnel involved in this task.

Figure 4-3: Relationship among personnel involved in predictive error detection in the performance of monitored services and the corrective action support methodology (execution example)



1. Person who monitors all services

Instructs the monitor to perform monitoring. If notified of a warning sign of a service performance error, this person investigates the cause. Upon determining that further investigation is needed, this person asks the maintenance service provider for the monitored service to investigate.

2. Monitor

Uses the Home window to monitor the monitoring items for all monitored services that have been set up by the person who monitors all services.

3. Maintenance service provider for the monitored service

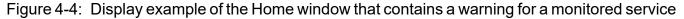
If requested by the person who monitors all services, this person investigates the monitored service and takes corrective action, as necessary.

#### (2) Predictive error detection in the performance of a monitored service

#### Tasks in SLM

While the person who monitors all services was monitoring the status of the monitored services in the Home window, a warning constituting a warning sign of a service performance error was displayed.

The following figure shows a display example of the Home window when a warning is displayed for a monitored service.



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Details of the warning displayed in this figure are as follows:

- When detected: 2020-02-05 06:41:03
- Type: OUTLIER
- Details: UPPER LIMIT
- Service group: Group02
- Service: Service02
- Monitored target: All Web Access
- Monitor item: Avg. response

This warning indicates that the average response time of Service02 belonging to Group02 that was obtained at 06:41:03 on February 5, 2020, constituted an out-of-range value (a value exceeding the upper limit) and differed significantly from the usual value for the monitored service.

#### **Results of the task**

The monitor reported the warning to the person who monitors all services.

Because the warning might lead to an error if left unattended, the person who monitors all services decided to take corrective action immediately.

<sup>4.</sup> Performing Monitoring

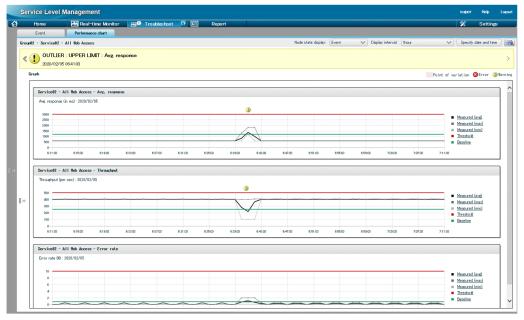
## (3) Corrective action taken after a warning sign was detected in the performance of a monitored service

#### Tasks in

After being notified of the warning displayed in the Home window, the person who monitors all services decided to use the Troubleshoot window to investigate the timing of the event detected as a warning, and then take corrective action.

The following figure shows a display example of the Troubleshoot window in which a warning is displayed for a monitored service.

Figure 4-5: Display example of the Troubleshoot window in which a warning is displayed for a monitored service



This performance chart of average response time indicates that the event causing the warning occurred between 06:39:03 and 06:43:03.

The access log for the time period during which the warning occurred include requests from the users of the Web system service and the corresponding responses. This information can be used to investigate any problems in Web system processing.

Figure 4-6: Display example of an access log in which a warning for a monitored service is displayed

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#### **Results of tasks**

Because the details of the warning and the timing of the event causing the warning became clear from the data provided in the Troubleshoot window, the person who monitors all services notified the maintenance service provider for the monitored service and requested a root cause investigation and corrective action.

#### (4) Verifying the service performance after taking corrective action

#### Tasks in SLM

After corrective action was taken by the maintenance service provider for the monitored service based on the results of a root cause investigation, the person who monitors all services decided to use the Real-time Monitor window to verify that service performance had returned to normal.

The following figure shows a display example of the Real-time Monitor window showing that service performance has returned to normal after corrective action was taken.

Figure 4-7: Display example of the Real-time Monitor window showing that service performance has returned to normal

Home	Real-time M	Monitor	페 🛛 Troubles	hoot	21	Report						*	Settings	
ervices	Service perform	nance informa	ition						Er	ror 😢 : O 🛛 Wa	rnins 😲 : O	Normal 🤡	: 1 Stop	D :
<b>Q</b>	Monitored target	Service group	Tota	al Ave	. response (ir	n ms)	Throughput (per sec)	Error rate 00		wg.response +	throughput		Availability	
Show all	▶ Service01	Group01		0 0		-	-6	- 16	-		ô		-	
- Group01	- Service02	Group02		Solution		-	10	- 🧒	-		10		-	
+ Service01	All Web A··	Group02		0 8		31.000	6	1.000 🔞	0.000		10		-	
- Group02	▶ Service03	Group02		0 6		-	°0	- 6	-		°ô		-	
	▶ Service84	Group03		0 °0		-	6	- 6	-		ô		-	
- Service02														
All Web Access														
+ Service03														
- Group03														
+ Service04														
	System perform	nance informat	tion						Eri	or🚫 : 0 Wa	rning] : O	Norma I 🤡	: 0 Stop	
	Monitor item (unit)		Service group		St.	atus Measu	and	Threshold			Baseline			
	Monitor item (unit, Service02	)			010	-	160	-			-			
		)	Group02		010		areu							
		Pr	Group02											
	Service02	Pr	Group02						Displa	y interval:	-		Trouble	esho
	Service02 Event Group02 - Servi	Pr ice02 - All We	Group02						Disple	y interval: [	-		<ul> <li>Trouble</li> </ul>	esho
	Service82 Event Groupt2 - Servi Ave.response (i	Pr ice02 - All We	Group02						Displa	y interval: [	-		/ Troubi	esho
	Service02 Event Group02 - Servi	Pr ice02 - All We	Group02						Displa	y interval: [	-			esho
	Service82 Event Group82 - Servic Ave: response 200 200 200 200	Pr ice02 - All We	Group02						Disple	y interval: [	-	<ul> <li>Measur</li> </ul>	ed	esho
	Service82 Event Groue82 - Servi Avg.response (i 3000 2000 2000 1000	Pr ice02 - All We	Group02						Disple	y interval: [	-	<ul> <li><u>Measur</u></li> <li><u>Thresh</u></li> </ul>	ed old	esho
	Service82 Event Group82 - Servic Ave: response 200 200 200 200	Pr ice02 - All We	Group02						Disple	y interval: [	-	<ul> <li>Measur</li> </ul>	ed old	esho

As shown in this figure, when service performance has returned to normal, the  $\bigotimes$  (normal) icon is displayed in the **Service performance information** area.

#### **Results of tasks**

The person who monitors all services has verified that service performance has returned to normal. This concludes the handling of the warning sign of a service performance error in a monitored service.

## 4.6.2 Example of execution for predictive error detection in the performance of processes in monitored services and the corrective action support methodology

This subsection explains by way of example how to use SLM to execute predictive error detection in the performance of processes in monitored services and the corrective actions to take, based on given conditions.

#### (1) Prerequisites

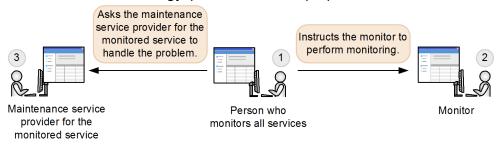
The conditions for this execution example are as follows:

- Registration of monitored services and Web transactions and the setup required for predictive error detection have been completed and monitoring has already started.
- The following figure shows the relationship among personnel involved in this task.

<sup>4.</sup> Performing Monitoring

JP1/Service Level Management Description

Figure 4-8: Relationship among personnel involved in predictive error detection in the performance of processes in monitored services and the corrective action support methodology (execution example)



1. Person who monitors all services

Instructs the monitor to perform monitoring. If notified of a warning sign of a service performance error, this person investigates the cause. Upon determining that further investigation is needed, this person asks the maintenance service provider for the monitored service to investigate.

2. Monitor

Uses the Home window to monitor the status of the monitored services of all service groups and the status of the processes of each monitored service.

3. Maintenance service provider for the monitored service

If requested by the person who monitors all services, this person investigates the monitored service and takes correction action, as necessary.

## (2) Predictive error detection in the performance of a process in a monitored service

#### Tasks in SLM

While the person who monitors all services was monitoring the status of the monitored services and the status of the processes of the monitored services in the Home window, a warning sign of a service performance error was displayed for a Web transaction corresponding to a process.

The following figure shows a display example of the Home window when a warning is displayed for a Web transaction of a monitored service.

## Figure 4-9: Display example of the Home window that contains a warning for a Web transaction of a monitored service

ᢙ	Home	Real-time Monitor	Troubleshoot	E Report				*	Settings
Current	service group	status summary	Error	Warning Normal Stop	Gaution service			Error🚫 Warnin	s 🜖 Normal 🤣 Stop
		Service group status (%)						Number of events in t	he last 7days
Service gro	oup	0 20 40	60 80	Number of services	Service	Service group	Current	Error	Warning
iroup03					1 Service04	Group03	<b>S</b>		7
roup01					3 Service03	Group02	0		1
roup02					2 Service06	Group 01	0		1
					Service02	Group02	()		0
					Service01	Group 01	0		0
					Service05	Group01	<b>S</b>		0
Events i	n the last7day:	\$			1			Error <mark>(3</mark> :3 Warn	ing 🕕 : 55 Norma l 🤡
								< Total:	64 Showing: 1 - 20
tatus	Level	When detected	Туре	Details	Service group	Service	Host	Total: Monitored target	64 Showing: 1 - 20 Monitor item
tatus Inread	Level	When detected 2020/02/14 12:30:44	OUTLIER	UPPER LIMIT	Group02	Service02	Host -	Total: Monitored target	64 Showing: 1 - 20 Monitor item Error rate
tatus Inread	Level	When detected 2020/02/14 12:30:44 2020/02/14 12:30:15	OUTLIER OUTLIER	UPPER LIMIT	Group02 Group02	Service02 Service02		Total: Monitored target Transaction 1 Transaction 1	84 Showing: 1 - 20 Monitor item Error rate Avg. response
tatus Inread Inread	Level 1 1 1	When detected 2020/02/14 12:38:44 2020/02/14 12:38:15 2020/02/14 12:38:05	OUTLIER OUTLIER OUTLIER	UPPER LIMIT UPPER LIMIT UPPER LIMIT	Group02 Group02 Group02	Service02 Service02 Service02		Total: Monitored target Transaction1 Transaction1 Transaction1	64 Showing: 1 - 20 Monitor item Error rate Avg. response Throughput
tatus Inread Inread Inread	Level 1 1 1 1	When detected 2020/02/14 12:30:44 2020/02/14 12:30:15 2020/02/14 12:30:05 2020/02/13 17:21:07	OUTLIER OUTLIER OUTLIER OUTLIER	UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT	Group02 Group02 Group02 Group01	Service02 Service02 Service02 Service06		Total: Monitored target Transaction 1 Transaction 1 Transaction 1 All Web Access	64 Showing: 1 - 20 Monitor item Error rate Ave. response Throughput Throughput
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Details of the warning displayed in this figure are as follows:

- When detected: 2020-02-14 12:30:15
- Type: OUTLIER
- Details: UPPER LIMIT
- Service group: Group02
- Service: Service02
- Monitored target: Transaction1
- Monitor item: Avg. response

This warning indicates that the average response time of Transaction1 of Service02 belonging to Group02 that was obtained at 12:30:15 on February 14, 2020, constituted an out-of-range value (a value exceeding the upper limit) and differed significantly from the usual value for the monitored service.

#### **Results of the task**

The monitor reported the warning to the person who monitors all services.

Because the warning might lead to an error if left unattended, the person who monitors all services decided to take corrective action immediately.

## (3) Corrective action taken after a warning sign was detected in the service performance for a process of a monitored service

#### Tasks in SLM

After being notified of the warning displayed in the Home window, the person who monitors all services decided to use the Troubleshoot window to investigate the timing of the event detected as a warning, and then take corrective action.

The following figure shows a display example of the Troubleshoot window in which a warning is displayed for a Web transaction of a monitored service.

<sup>4.</sup> Performing Monitoring

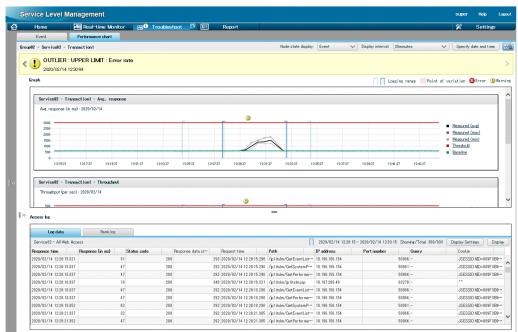
Figure 4-10: Display example of the Troubleshoot window in which a warning is displayed for a Web transaction of a monitored service



This performance chart of average response time indicates that the event causing the warning occurred between 12:28:44 and 12:36:44.

The access log for the time period during which the warning appeared include the Web transactions of the monitored service. This information can be used to investigate any problems in Web system processing.

### Figure 4-11: Display example of the access log in which a warning is displayed for a Web transaction of a monitored service



#### **Results of tasks**

Because the details of the warning and the timing of the event causing the warning became clear from the data provided in the Troubleshoot window, the person who monitors all services notified the maintenance service provider for the monitored service and requested a root cause investigation and corrective action.

<sup>4.</sup> Performing Monitoring

#### (4) Verifying the service performance after taking corrective action

#### Tasks in SLM

After corrective action was taken by the maintenance service provider for the monitored service based on the results of a root cause investigation, the person who monitors all services decided to use the Real-time Monitor window to verify that the service performance of the Web transaction had returned to normal.

The following figure shows a display example of the Real-time Monitor window showing that the service performance of the Web transaction has returned to normal after corrective action was taken.

Figure 4-12: Display example of the Real-time Monitor window showing that service performance of the Web transaction has returned to normal

Home	Real-time Mc	nitor 🖪	🗩 Troubleshoot		Report					*	Settings	
ervices	Service performa	ince informati	on						Error <mark>(2)</mark> : 0 Warnin	s🕕 : O Normal 🔇	):2 Stop	:
	Monitored target	Service group	Total	Avg. respons	se (in ms)	Throughput (per sec)	Erro	r rate 00	Avg. response + throughp	ut	Availability	
Show all	▶ Service01	Group01	۵	6		- 6	- 6		- °ô		-	
- Group01	▶ Service05	Group01	۵	õ		- 6	- 6		- 'ô		-	
+ Service01	▶ Service06	Group01	0	6		- 0	- 6		- °ô		-	
+ Service05		Group02	<b>S</b>	1		- 10	- 🎯		- '6		-	
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Group02	Transaction 1		0	Ö	62.0	00 🧒	1.000 🌀	0.00	and the second		1.1	
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+ Service03												
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+ Service84	System performa	nce informati	n						Error <mark>(2)</mark> : 0 Warnin	s😲 : O Normal 😋	):0 Stop	P
	Monitor item (unit)		Service group		Status Mea	sured	10	rreshold	Base	elne		
	Monitor item (unit) Service02		Service group Group02		Status Mea	sured	-	rreshold		eine		
	and the second second second second second	Per				aared 		reshold		eine		
	Service02		Group02			aared		reshold		eine		
	Service82		Group02								▼] Trouble	sh
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	Event Erosefiz - Service Ang response (n. 2000 -	902 - Transac	Group02						-	Jte		shi
	Service02           Event           Group02 - Service           Ang response (n. 2000)           2000           2000	902 - Transac	Group02						-	Jte	red .	shi
	Event Erosefiz - Service Ang response (n. 2000 -	902 - Transac	Group02						-	Jte	ared hold	shi

As shown in this figure, when service performance of the Web transaction has returned to normal, the  $\bigotimes$  (normal) icon is displayed in the **Service performance information** area.

#### **Results of tasks**

The person who monitors all services has verified that service performance of the Web transaction has returned to normal. This concludes the handling of the warning sign of a service performance error for a process of a monitored service.

# 4.6.3 Example of execution for predictive error detection in the performance of systems running monitored services and the corrective action support methodology (working with Performance Management)

This subsection explains by way of example how to use SLM to execute predictive error detection in the performance of systems running monitored services and the corrective actions to take (when working with Performance Management), based on given conditions.

<sup>4.</sup> Performing Monitoring

JP1/Service Level Management Description

#### (1) Prerequisites

The conditions for this execution example are as follows:

- Registration of monitored services and the setup required for predictive error detection have been completed and monitoring has already started.
- The following figure shows the relationship among personnel involved in this task.

Figure 4-13: Relationship among personnel involved in predictive error detection in the performance of systems running monitored services and the corrective action support methodology (execution example)



#### 1. Person who monitors all services

Instructs the monitor to perform monitoring. If notified of a warning sign of a system performance error, this person investigates the cause. Upon determining that further investigation is needed, this person asks the system administrator to investigate.

#### 2. Monitor

Uses the Home window to monitor the monitoring items for all monitored services that have been set up by the person who monitors all services. In the event of a warning or error, this person reports it immediately to the person who monitors all services.

3. System administrator

If requested by the person who monitors all services, this person investigates the status of the system that is providing the monitored service, such as a host or middleware, and takes corrective action.

#### (2) Predictive error detection in the performance of a monitored service

#### Tasks in SLM

While the monitor was monitoring the status of monitored services in the Home window, a warning constituting a warning sign of a service performance error was displayed.

The following figure shows a display example of the Home window when a warning is displayed for a monitored service.

## Figure 4-14: Display example of the Home window that contains a warning for a monitored service

	Home	Real-time Monitor	Fig. Troubleshoot	EI Report				*	Settings	
-		status summary		Warning Normal Stop	Gaution service			Error 😒 Warning		Stop
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service gro	up	0 20 40	60 80	100 Number of services	Service	Service group	Current	Error	Warning	
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Group02			a new providence and providence of	2	Service01	Group01	0		0	
					Service03	Group02	<b>S</b>		0	
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Details of the warning displayed in this figure are as follows:

- When detected: 2020-02-14 01:14:00
- Type: OUTLIER
- Details: UPPER LIMIT
- Service group: Group01
- Service: Service01
- Monitored target: Agent01
- Monitor item: CPU<Drive name>=<C>

This warning indicates that CPU<Drive name>=<C> of Service01 belonging to Group01 that was obtained at 01:14:00 on February 14, 2020, constituted an out-of-range value (a value exceeding the upper limit) and differed significantly from the usual value for the monitored service.

This example indicates that an abnormality was also detected on the monitored host.

#### **Results of the task**

The monitor reported the warning to the person who monitors all services.

Because the warning might lead to an error if left unattended, the person who monitors all services decided to take corrective action immediately.

## (3) Corrective action taken after a warning sign was detected in the performance of a monitored service

#### Tasks in SLM

After being notified of the warning displayed in the Home window, the person who monitors all services decided to use the Troubleshoot window to investigate the timing of the event detected as warning, and then take corrective action.

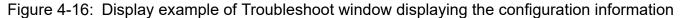
The following figure shows a display example of the Troubleshoot window in which a warning is displayed for a monitored service.

Figure 4-15: Display example of the Troubleshoot window in which a warning is displayed for a monitored service



This performance chart of CPU<Drive name>=<C> indicates that the event causing the warning occurred between 01:04:52 and 01:48:52.

The person who monitors all services decided to display configuration information to check system performance. The following figure shows a display example of the Troubleshoot window that displays the configuration information.





In this example, a warning occurred concerning the CPU of Agent01. This indicates that some problem occurred in the computer that is providing the monitored service.

#### **Results of tasks**

The details of the warning and the timing of the event causing the warning, which became clear from the data provided in the Troubleshoot window, indicate that this is most likely a system performance problem. Therefore, the person who monitors all services contacted the system administrator and requested a root cause investigation and corrective action.

<sup>4.</sup> Performing Monitoring

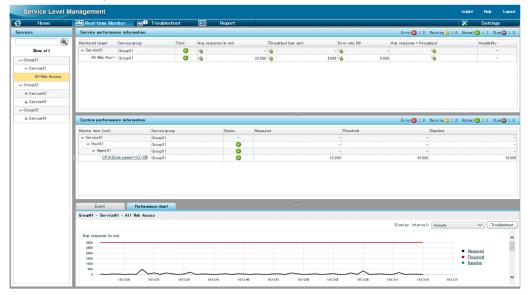
#### (4) Verifying the system performance after taking corrective action

#### Tasks in SLM

After corrective action was taken by the system administrator based on the results of the root cause investigation, the person who monitors all services decided to use the Real-time Monitor window to verify that system performance has returned to normal.

The following figure shows a display example of the Real-time Monitor window showing that the system performance has returned to normal after corrective action was taken.

Figure 4-17: Display example of the Real-time Monitor window showing that system performance has returned to normal



As shown in this figure, when system performance has returned to normal, the  $\bigotimes$  (normal) icon is displayed in the **System performance information** area.

#### **Results of tasks**

The person who monitors all services has verified that service performance and system performance have returned to normal. This concludes the handling of the warning sign of an error in a monitored service.

## 4.6.4 Example of execution for periodic evaluation of the status of monitored services

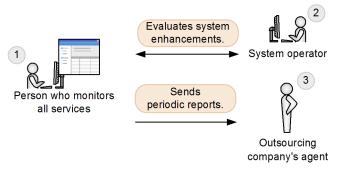
This subsection explains by way of example how to use SLM to execute periodic evaluation of the status of monitored services, based on given conditions.

#### (1) Prerequisites

The conditions for this execution example are as follows:

- Registration of monitored services and the setup required for monitoring have been completed and a specified period of time has elapsed since monitoring started.
- The following figure shows the relationship among the personnel involved in this task.

Figure 4-18: Relationship among personnel involved in periodic evaluation of the status of monitored services (execution example)



1. Person who monitors all services

Evaluates the status of the monitored services periodically and evaluates with the system operator whether current system performance (such as server memory and CPU) is adequate to maintain the service level. This person also creates monthly reports on service levels and reports periodically to the outsourcing company's (service provider's) agent. This person might use these reports to suggest system enhancements when appropriate.

2. System operator

Runs the system, including IT equipment and networks in the company. When system enhancements are suggested by the person who monitors all services, this person evaluates them.

3. Outsourcing company's agent

This person is in charge of providing the outsourced services. This person receives periodic reports from the person who monitors all services at the outsourced contractor. If requested during periodic reporting, this person evaluates suggestions for system enhancements and authorizes them if determined to be appropriate.

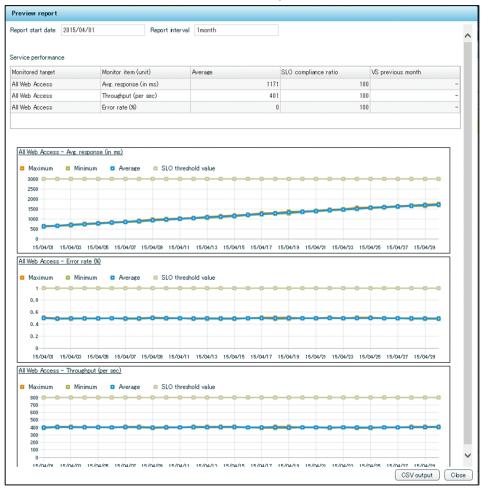
#### (2) Checking the status of the monitored services

#### Tasks in SLM

The person who monitors all services decided to display the Preview report window to check the status of currently monitored services for the past month. This person displayed the report using a template in which report items have already been set up.

The following figure shows a display example of the Preview report window that contains the status of a monitored service for the past month.

## Figure 4-19: Display example of the Preview report window that contains the status of a monitored service for the past month



This window shows for the one-month period starting April 1, 2015, the average value, SLO compliance rate, comparison to the previous month for average response time (as a percentage), throughput, and error rate. The graphs show the one-month trend in changes in service performance.

#### **Results of the task**

While reviewing data in the Preview report window, the person who monitors all services noticed upward trends in the maximum and average values for each of the monitoring items. Because these trends might lead to overage of the SLO threshold if left unattended, this person decided to contact the system administrator to evaluate whether system enhancement is needed and then, if appropriate, to suggest system enhancements to the outsourcing company's agent at the time of the next periodic reporting.

#### (3) Periodic report of the status of the monitored services

#### Tasks in SLM

Because the time for a periodic report has approached, the person who monitors all services decided to create a report to the outsourcing company's agent.

To create the report, this person decided to output from the Preview report window to a CSV file the results of monitoring the status of the monitored services.

The following figure shows the results of monitoring the status of the monitored services that have been output to a CSV file.

<sup>4.</sup> Performing Monitoring

JP1/Service Level Management Description

## Figure 4-20: Results of monitoring the status of monitored services that have been output to a CSV file

```
Date,All Web Access/Throughput/Average,All Web Access/Throughput/Max,All Web Access/

Throughput/Min,...

2015/04/01 00:00,210.29926,212.8205,208.28644,...

2015/04/02 00:00,233.97156,235.9649,228.6818,...

2015/04/03 00:00,252.6848,269.7389,243.28394,...

2015/04/28 00:00,420.4197,423.8312,418.325,...

2015/04/29 00:00,432.5576,439.5641,427.3748,...

2015/04/30 00:00,441.5641,446.1399,439.262,...
```

The service performance average, maximum, and minimum values and their times are output to the CSV file.

#### **Results of tasks**

A graph was created from the results of monitoring the status of the monitored services that was output to a CSV file by using a spreadsheet program, and the graph was included in the report.

The person who monitors all services explained in the periodic report that based on the graph, some system enhancement is needed in order to maintain the service level. Approval for the proposed enhancements was obtained from the outsourcing company's agent.

<sup>4.</sup> Performing Monitoring

#### 4.7 Access log function

The access log is a log recording, for each pair, the HTTP requests and responses generated with communication between the user of a service and the web system providing that service.

The Access log function is a function for displaying the Access log. This function provides support for investigation of a web system process when investigating the problematic points of a service for which a predictive error has been detected in the **Troubleshoot** window.

The Access log function is able to quickly investigate the problematic points of the service as it sorts, with the following characteristics, the requests and the responses thereof from users of the service.

- The ability to drill down into the Access log from the from the Troubleshoot window
- A display format that enables easy analysis of causes

The following table shows the functions of the confirmation of the display of the access log.

Table 4-15: Functions	of the confirmation of the display of th	e access log
Function	Overview	Referenced area

Function	Overview	Referenced area
Display Settings	Select the items to be displayed in the window for the confirmation of the display of the access log.	10.4.7 Select items to be displayed window
Filtering	Amongst the access logs being displayed, only the access logs that satisfy the display items freely specified by the user will be displayed.	10.4.8 Confirmation of the display of the access log window
Sort	The access logs beings displayed will be sorted in ascending or descending order based on the standard of the values of a display item specified by the user.	10.4.5 Access log area (Log data tab selected)
Ranking	Amongst the access logs being displayed, the number of incidents of data for each of the values of a display item specified by the user will be totaled and displayed in the form of a ranking.	10.4.6 Access log area (Ranking tab selected)

<sup>4.</sup> Performing Monitoring



#### **Preparations Before Starting**

This chapter explains the preparations before starting SLM, including installation, setup, and user settings.

This chapter also explains optional preparations, such as linking with JP1/IM to report monitoring results by means such as email, linking with Performance Management to monitor hosts and middleware that provide the services, and editing system definition files (jplitslm.properties or jplitslmur.properties) to change SLM operations.

For details about the preparations before you start running SLM in a cluster system, see <u>6.</u> <u>Preparations Before Starting (Cluster System)</u>.

#### 5.1 Deploying SLM

To deploy SLM, you must install SLM, create an execution environment by setting it up, and then install the HTML manual in the execution environment.

When you upgrade SLM or link SLM with Performance Management, you must pay attention to the sequence of tasks.

This section explains four different procedures for deploying SLM:

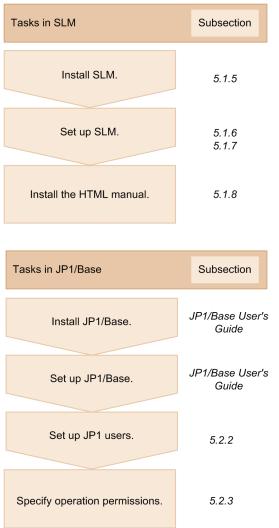
- Deploying a new SLM
- Upgrading SLM
- Deploying a new SLM (when linking with a newly deployed Performance Management)
- Deploying a new SLM (when linking with an existing Performance Management)

#### 5.1.1 General procedure for deploying a new SLM

The figure below shows the general procedure for a new deployment of SLM. This procedure includes tasks performed in JP1/Base as well as the tasks performed in SLM. You can perform the tasks in JP1/Base before or after the tasks in SLM.

<sup>5.</sup> Preparations Before Starting

#### Figure 5-1: General procedure for deploying SLM



#### 5.1.2 General procedure for upgrading SLM

This subsection explains the general procedure for upgrading an SLM that has already been deployed. During upgrading, there is no need to redo the JP1/Base tasks that were performed when SLM was deployed initially.

The procedure for upgrading from 09-50 differs from the procedure for upgrading from 09-51 or later. In addition, when SLM - Manager is upgraded from 09-51 or later, the upgrade procedure differs depending on whether the capacity of the database that will be used after upgrading will be greater than the capacity before upgrading.

#### (1) Upgrading SLM - Manager and SLM - UR version 09-50

The figure below shows the general procedure for upgrading SLM - Manager and SLM - UR version 09-50.

<sup>5.</sup> Preparations Before Starting

JP1/Service Level Management Description

## Figure 5-2: General procedure for upgrading SLM that has already been deployed (upgrading from 09-50)

Tasks in SLM	Subsection
Back up the old version of SLM.	8.1.1 8.1.2
Uninstall the old version of SLM.	5.1.13
Install the new version of SLM.	5.1.5
Set up the new version of SLM (first time) (SLM - Manager).	5.1.6
Restore data from the old version of SLM.	8.1.4 8.1.5
Set up the new version of SLM (second time) (SLM - Manager, SLM - UR).	5.1.6 5.1.7
Install the HTML manual.	5.1.8

When you back up data from the old version of SLM, see 8.1.1 Backing up the definition files and 8.1.2 Backing up the database.

When you restore data from the old version of SLM, see 8.1.4 Restoring the definition files and 8.1.5 Restoring the database.

When you upgrade a version of SLM that has already been deployed, you must set up SLM - Manager twice, as described in the procedure. The first setup prepares for restore processing, and the second setup migrates the database. You perform the second setup using the same command line arguments and options file contents as were used for the first setup.

After you have finished upgrading SLM, verify that the displays in the following windows are the same as they were before upgrading:

- Home window
- Troubleshoot window
- Report window
- Settings window

If the displays in these windows differ from before upgrading, you must apply the following procedure to redo the installation, and then perform setup:

- 1. Uninstall SLM
- 2. Install the old version of SLM.

#### 5. Preparations Before Starting

JP1/Service Level Management Description

- 3. Restore the backup data obtained before upgrading.
- 4. Re-install the new version of SLM.

#### (2) Upgrading SLM - Manager version 09-51 or later

When SLM - Manager 09-51 or later is upgraded, the upgrade procedure differs depending on whether the capacity of the database that will be used after upgrading will be greater than the capacity before upgrading. For this reason, before you start the procedure, estimate the database capacity that will be needed after upgrading. For details, see the description of how to estimate the size of the database area in 9.12 jslmmgrsetup (sets up SLM - Manager) in 9. Commands.

Compare the estimated value and the value shown in the table below to determine whether the capacity of the database that will be used after the upgrade will be greater than the capacity of the database before upgrading.

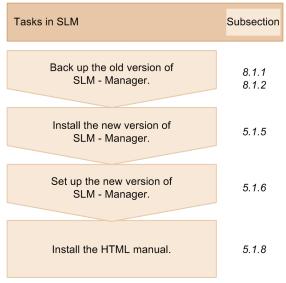
No.	SLM - Manager version before upgrading	Database capacity before upgrading
1	09-51	39,000 MB
2		$5,000 \text{ MB}^{\#}$
3	10-00 or later	Value of the hdb_area_size definition item in the jslmmgrsetup command's options file that was specified when SLM - Manager was newly set up.

Table 5-1:	Database	capacity	before	upgrading
				apgraanig

#: This is the value used at the time of setup of SLM - Manager 09-51 when the number of monitored services was about 10 and pdi\_small\_s.ini was set to the default value pdi\_s.ini.

If the capacity of the database that will be used after upgrading will not exceed the database capacity before upgrading, you must re-create the database area. Use the general procedure shown in the following figure for upgrading SLM - Manager.

## Figure 5-3: General procedure for upgrading SLM - Manager that has already been deployed (when upgrading from 09-51 or later and the database capacity after upgrading will not exceed the database capacity before upgrading)



If the capacity of the database that will be used after upgrading will exceed the database capacity before upgrading, you must re-create the database area. Use the general procedure shown in the following figure for upgrading SLM - Manager.

<sup>5.</sup> Preparations Before Starting

JP1/Service Level Management Description

Figure 5-4: General procedure for upgrading SLM - Manager that has already been deployed (when upgrading from 09-51 or later and the database capacity after upgrading will exceed the database capacity before upgrading)

Tasks in SLM	Subsection	
Back up the old version of SLM - Manager.	8.1.1 8.1.2	
Export data from the old version of SLM - Manager.	jslmmgrexport (exports service monitor information) in Chapter 9	
Undo the setup of the old version of SLM - Manager.	5.1.11	
Install the new version of SLM - Manager.	5.1.5	
Set up the new version of SLM - Manager.	5.1.6	
Start the new version of SLM - Manager.	2.1.1	
Import the old version's data to the new version of SLM - Manager.	jslmmgrimport (imports service monitor information) in Chapter 9	
Install the HTML manual.	5.1.8	

#### (3) Upgrading SLM - UR version 09-51 or later

The following figure shows the general procedure for upgrading SLM - UR 09-51 or later.

<sup>5.</sup> Preparations Before Starting

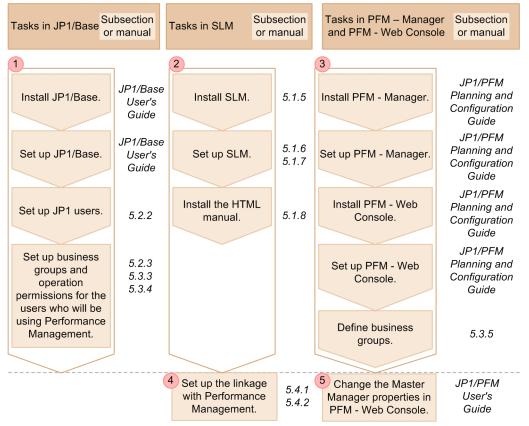
## Figure 5-5: General procedure for upgrading SLM - UR that has already been deployed (upgrading from 09-51 or later)



## 5.1.3 General procedure for deploying SLM (when linking with a newly deployed Performance Management)

The figure below shows the general procedure for deploying SLM when SLM is to be linked with a newly deployed Performance Management. In the figure, steps 1 through 3 can be performed in any order; similarly, steps 4 and 5 can be performed in either order.

Figure 5-6: General procedure for deploying SLM when SLM is linked to a newly deployed Performance Management



Note: In manual titles in the figure, PFM is an abbreviation for Performance Management.

<sup>5.</sup> Preparations Before Starting

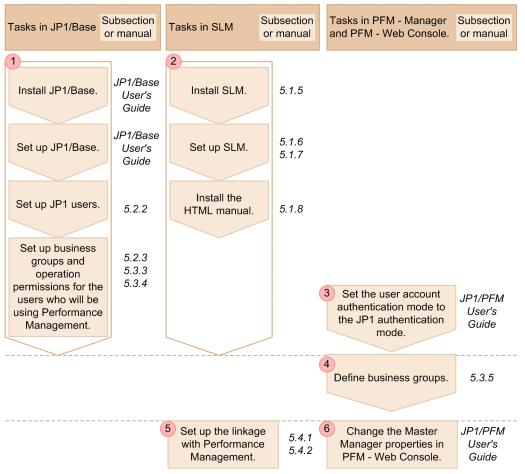
JP1/Service Level Management Description

In addition, Performance Management requires installation and setup of monitoring agents corresponding to the monitored targets. For details about installation and setup of monitoring agents, see the applicable PFM - Agent or PFM - RM manual.

## 5.1.4 General procedure for deploying SLM (when linking with an existing Performance Management)

The figure below shows the general procedure for deploying SLM when SLM is to be linked with an existing Performance Management. In the figure, steps 1 through 3 can be performed in any order; similarly, steps 5 and 6 can be performed in either order.

Figure 5-7: General procedure for deploying SLM when SLM is linked to an existing Performance Management



Note: In manual titles in the figure, *PFM* is an abbreviation for *Performance Management*.

#### 5.1.5 Installing SLM

The procedure for installing SLM is the same for both SLM - Manager and SLM - UR. You can install either one first.

#### (1) Before you start

• Verify that your user account belongs to the OS's Administrators group.

#### 5. Preparations Before Starting

JP1/Service Level Management Description

• If you are upgrading an SLM that has already been deployed, first back up your data before upgrading. For details about how to make backups, see 8.1.1 Backing up the definition files and 8.1.2 Backing up the database.

#### (2) Procedure

To install SLM:

1. Insert the distribution medium into the correct drive.

2. Install SLM by following the installer's instructions.

You will specify the following items during installation:

User information

#### User name

Specify a character string of no more than 50 characters.

Company name

Specify a character string of no more than 80 characters.

Installation folder

By default, the following folder is used: *system-drive*:\Program Files\HITACHI\JP1ITSLM

Notes about the installation folder:

- If you change the installation folder, specify an absolute path consisting of no more than 35 characters.
- UNC representation is not supported.
- A network drive cannot be specified.
- The installation folder path cannot contain a hash mark (#).
- The folder name cannot begin with a lower-case letter u.
- If SLM UR is being installed on the same host where SLM Manager has already been installed, the installation folder for SLM UR will already be set to the folder specified when SLM Manager was installed; no other folder can be specified. Similarly, if SLM Manager is being installed on the same host where SLM UR has already been installed, the installation folder for SLM Manager will already be set to the folder specified when SLM UR was installed; no other folder can be specified.

When the installer terminates normally, the installation is complete.

#### (3) Supplementary information

- JP1/Base must be installed on the host where SLM Manager has been installed. For details about how to install JP1/Base, see the *JP1/Base User's Guide*.
- The reference time of the host on which SLM Manager and SLM UR have been installed is GMT. On the other hand, the reference time of the computer from which a monitoring person logs in to SLM Manager is based on that computer's time zone.

To check and output SLM's monitoring results in reports, these hosts' time zones must match. For details about reports, see 4.5 Creating reports.

• When SLM - Manager or SLM - UR is installed, Hitachi Network Objectplaza Trace Library (HNTRLib2) is also installed. At that time, the path for HNTRLib2 (*system-drive*:\Program Files\Common Files\Hitachi) is added to the Path Windows system environment variable.

- If you install SLM Manager or SLM UR on a host on which the same version of SLM Manager or SLM UR is already installed, select **Repair** in the installer. When **Repair** is selected, all folders and files created by the installer will be restored to their status immediately after the installation. Note that files created by the setup command and folders and files created by users remain unchanged.
- You can use JP1/Software Distribution's remote installation (software distribution) to install SLM Manager or SLM - UR on a target host. In this case, the default user information and installation folder are used because the installation window is not displayed. When you use remote installation, you can repair the program by re-installing SLM - Manager or SLM - UR on a host on which the same version of SLM - Manager or SLM - UR has already been installed.
- If SLM is installed under *system-drive*: \Program Files\, the installation will fail if there is a folder or file named Program immediately under the system drive. Before you start installation, make sure that there is no folder or file named Program.

#### (4) Next task

• 5.1.6 Setting up SLM - Manager or 5.1.7 Setting up SLM - UR

#### (5) Related topics

• 5.1.13 Uninstalling SLM

#### 5.1.6 Setting up SLM - Manager

The purpose of setup is to create an execution environment.

You can set up either SLM - Manager or SLM - UR first.

This subsection explains how to set up SLM - Manager.

#### (1) Before you start

- Verify that your user account belongs to the OS's Administrators group.
- Before you start the setup, install the SLM Manager that is to be set up. For details about the installation, see 5.1.5 Installing SLM.
- Verify that JP1/Base has been installed on the host on which SLM Manager is being installed. For details about how to install JP1/Base, see the *JP1/Base User's Guide*.

#### (2) Procedure

To set up SLM - Manager:

- Create the options file required for setup.
   For details about the options file, see 9.12 jslmmgrsetup (sets up SLM Manager) in 9. Commands.
- 2. Store the created options file in a desired folder.

Make sure that the absolute path of the options file storage location does not exceed 255 bytes including the options file name (any name).

3. Execute the setup command.

The following shows the setup command that is to be executed:

<sup>5.</sup> Preparations Before Starting

SLM-Manager-installation-folder\mgr\bin\jslmmgrsetup absolute-path-of-options-file

For details about the setup command, see 9.12 jslmmgrsetup (sets up SLM - Manager) in 9. Commands.

When the command terminates normally, SLM - Manager setup is complete.

When setup finishes, the default startup method of each service is initially set as follows:

Service	Service name	Default startup method
SLM - Manager DB Service	HiRDBEmbeddedEdition_JL0	Automatic
SLM - Manager DB Cluster Service	HiRDBClusterService_JL0	Manual
SLM - Manager Service	JP1_ITSLM_MGR_Service	Manual
SLM - Manager Web Service	JP1_ITSLM_MGR_Web_Service	Manual

 Table 5-2: Default startup method of each service when setup finishes

Be careful if you have already set up SLM - Manager and have changed the default startup methods of services. In this case, if you perform unsetup of SLM - Manager and then set it up again, the default startup methods of the services are reset to the initial settings.

#### (3) Supplementary information

- If a firewall has been set up on the host on which SLM Manager has been set up, you must release the port numbers that were specified for the psb\_Listen and manager\_port definition items in the options file used during setup. If you change the settings in the options file, you must also change the firewall settings, and then check the following:
  - 1. Check if ephemeral ports for communication between SLM Manager and SLM UR and between SLM Manager and the browser have been released.

If they have not been released, set up the firewall to release ephemeral ports or set it up to allow communication from the following programs:

- SLM Manager-installation-folder \mgr \bin \system \jslmmUR.exe
- SLM Manager-installation-folder \mgr \bin \system \jslmmRMI.exe

- SLM - Manager-installation-folder\mgr\system\psb\CC\web\bin\cjstartweb.exe

- 2. Check if the firewall is allowed to communicate with the loopback address of the host where SLM Manager is set up.
- To adjust the time on the host on which SLM Manager has been set up, you must first terminate all SLM Managers and SLM URs. To do this, first stop all services running on the SLM Managers and SLM URs.

It is preferable to adjust SLM - Manager's time forward. If SLM - Manager's time is set earlier as a result of adjustment (adjusted backward), wait until the amount of time that was adjusted backward has elapsed, and then start SLM - Manager and SLM - UR. For example, if you moved the computer's time backward by five minutes, wait for at least five minutes before you start SLM - Manager.

Note that you can adjust the time of a computer that displays windows used for monitoring at any time, regardless of whether SLM - Manager is running.

- Make sure that you specify a value in the range from 1 to 65535 for the psb\_Listen definition item in the options file that is used when the jslmmgrsetup command is executed. If you have specified any other value and then performed the setup, perform setup again using the procedure described below after a setup error has been issued.
  - 1. Correct the Listen property value defined in the file shown below (httpsd.conf) to a value in the range from 1 to 65535:

*SLM-Manager-installation-folder*\mgr\system\psb\httpsd\conf\httpsd.conf

- 2. Specify a value in the range from 1 to 65535 for the psb\_Listen definition item in the jslmmgrsetup command's options file, and then perform setup again.
- If setup fails during upgrading, data in the database might have become corrupted. Therefore, when setup fails during upgrading, take the appropriate corrective action to eliminate the cause, install SLM again using the procedure below, and then perform setup:
  - 1. Uninstall the SLM that has been installed.
  - 2. Install the previous version of SLM.
  - 3. Restore the backup data that was acquired before upgrading.
  - 4. Re-install the new version of SLM.

#### (4) Next task

• 5.1.7 Setting up SLM - UR or 5.2.2 Setting up JP1 users in JP1/Base

#### (5) Related topics

- 5.1.11 Undoing the SLM Manager setup
- 11.3 Messages

#### 5.1.7 Setting up SLM - UR

The purpose of setup is to create an execution environment.

You can set up either SLM - UR or SLM - Manager first.

This subsection explains how to set up SLM - UR.

#### (1) Before you start

- Verify that your user account belongs to the OS's Administrators group.
- Before you start the setup, install the SLM UR that is to be set up. For details about the installation, see 5.1.5 Installing SLM.

#### (2) Procedure

Select one of the following methods for setting up SLM - UR.

- Specifying the target for collection of HTTP packets with a network interface number
- Specifying the target for collection of HTTP packets with a network adaptor address

The following procedures are for specifying the target for collection of HTTP packets with a network interface number. When specifying the target for collection of HTTP packets with a network adaptor address, replace jslmuripls with jslmurnals and "network interface number" with "network adaptor address" in the following procedures.

1. Execute the command that checks the network interface number and IP address of the host on which SLM - UR has been installed.

Execute the following command:

*SLM-UR-installation-folder*\ur\bin\jslmuripls

For details about the command that checks the network interface number and IP address, see 9.17 jslmuripls (displays network interface number and IP address) in 9. Commands.

2. Create the options file required for setup based on the information provided by executing the jslmuripls command.

For details about the options file, see 9.19 jslmursetup (sets up SLM - UR) in 9. Commands.

3. Store the created options file in a desired folder.

Make sure that the absolute path of the options file storage location does not exceed 255 bytes including the options file name (any name).

4. Execute the setup command.

The following shows the setup command that is to be executed:

*SLM-UR-installation-folder*\ur\bin\jslmursetup *absolute-path-of-options-file* 

For details about the setup command, see 9.19 jslmursetup (sets up SLM - UR) in 9. Commands.

When the command terminates normally, SLM - UR setup is complete.

To log an access history, you must set the access log folder for the accesslogFilePath property in the SLM - UR system definition file (jplitslmur.properties). For details about how to set this folder, see 5.6 Editing the system definition files to change settings.

When setup finishes, the default startup method of each service is initially set as follows:

• SLM - User Response Service:

(Service name: JP1\_ITSLM\_UR\_Service, default startup method: Manual)

Be careful if you have already set up SLM - UR and have changed the default startup methods of services. In this case, if you perform setup of SLM - UR again, the default startup methods of the services are reset to the initial settings.

#### (3) Supplementary information

- If a firewall has been set up on the host on which SLM UR has been set up, you must release the port number that was specified for the ur\_port definition item in the options file used during setup. If you change the settings in the options file, you must also change the firewall settings, and then check the following:
  - 1. Check if ephemeral ports for communication between SLM UR and SLM Manager are released.

If they have not been released, set up the firewall to release the ephemeral ports or set up the firewall to allow communication from the following programs:

- *SLM-UR-installation-folder*\ur\bin\system\jslmuUR.exe
- SLM-UR-installation-folder\ur\bin\system\jslmuRMI.exe
- *SLM-UR-installation-folder*\ur\system\sdp\bin\sdppcap.exe
- To adjust the time of the host on which SLM UR has been set up, you must first terminate all SLM Managers and SLM URs.

Adjust SLM - UR's time to SLM - Manager's time. If SLM - UR's time moved backward (earlier) as a result of adjustment, there is no need to wait to start SLM - UR until the amount of time that moved backwards has elapsed. However, if monitoring of monitored services starts while SLM - UR's time is in the past, the service performance data acquired by SLM - UR is discarded until the last monitoring period has elapsed.

#### (4) Next task

• 5.1.6 Setting up SLM - Manager or 5.2.2 Setting up JP1 users in JP1/Base

<sup>5.</sup> Preparations Before Starting

#### (5) Related topics

- 5.1.12 Undoing the SLM UR setup
- 11.3 Messages

#### 5.1.8 Installing the HTML manual

Copying the HTML manual to a specified folder enables you to reference the HTML manual by clicking **Help** in the upper right corner of a window (or by clicking the **Help** button in the login window).

#### (1) Before you start

• Set up SLM - Manager. For details about the setup, see 5.1.6 Setting up SLM - Manager.

#### (2) Procedure

To install the HTML manual:

- 1. Locate the distribution medium for the manual that was provided with the program product.
- 2. On the host on which SLM Manager has been set up, create the folder to which the manual is to be copied. Create the following folder.

If the browser language is Japanese:

```
SLM-Manager-installation-folder\mgr\system\psb\httpsd\htdocs\custom\jplitslm\help
\ja\SLM\HTML\
```

If the browser language is English:

```
SLM-Manager-installation-folder\mgr\system\psb\httpsd\htdocs\custom\jplitslm\help
\en\SLM\HTML\
```

3. Copy the folders and files from the distribution medium for the manual to the folder created in step 2. Copy all folders and files stored in the following folder:

applicable-drive\MAN\3021\manual-number-folder<sup>#</sup>

#

This folder name is based on the manual number provided on the first page of this manual. Omit the first three digits and the hyphens (-) and add D at the end.

For example, if the manual number is 3021-X-YYY-ZZ, *manual-number-folder* is 0XYYYZZD. If there are no digits corresponding to ZZ, use 00, such as 0XYYY00D.

4. Copy files from the source to the target by overwriting.

Source:

 $\label{eq:slm-manager-installation-folder \mgr\system\psb\httpsd\htdocs\custom\jplitslm\help\linder\mgr\system\psb\httpsd\htdocs\custom\jplitslm\help\linder\help\linder\mgr\system\psb\httpsd\htdocs\custom\jplitslm\help\linder\help\l$ 

Target:

• If the browser language is Japanese:

 $\label{eq:slm-manager-installation-folder \mgr\system\psb\httpsd\htdocs\custom\jplitslm\help \ja\INDEX.HTM$ 

• If the browser language is English:

#### 5. Preparations Before Starting

 $\label{eq:slm-manager-installation-folder \mgr\system\psb\httpsd\htdocs\custom\jplitslm\help \en\lindex.htm$ 

- 5. From the Windows Start menu, select Administrative Tools, and then Services.
- 6. Start the SLM Manager service SLM Manager Web Service.

When the service status is Start, the HTML manual has been installed.

## (3) Supplementary information

• The installed HTML manual is deleted when SLM - Manager is uninstalled.

## (4) Next task

- 2.2.1 Logging in to SLM Manager
- 5.4.1 Setting up the linkage between SLM and Performance Management (working with Performance Management)

## (5) Related topics

• 5.1.13 Uninstalling SLM

## 5.1.9 Installing and setting up PFM - Manager and PFM - Web Console (working with Performance Management)

To link SLM with Performance Management, you must install and set up PFM - Manager and PFM - Web Console.

## (1) Before you start

• Design an operation monitoring system that utilizes Performance Management. For details about design of the Performance Management system, see the *SLM/Performance Management Planning and Configuration Guide*.

## (2) Procedure

For details about the installation and setup of PFM - Manager and PFM - Web Console, see the description of installation and setup in the *JP1/Performance Management Planning and Configuration Guide*.

## (3) Supplementary information

• To perform operation monitoring in Performance Management, not only PFM - Manager and PFM - Web Console but monitoring agents must be installed and set up. For details about installation and setup of monitoring agents, see the applicable PFM - Agent or PFM - RM manual.

## (4) Next task

• 5.3.5 Defining business groups in Performance Management

#### 5. Preparations Before Starting

JP1/Service Level Management Description

## 5.1.10 Undoing the setup of and uninstalling PFM - Manager and PFM - Web Console (working with Performance Management)

You can undo the setup of and uninstall PFM - Manager and PFM - Web Console when they are no longer needed. If you will continue to run Performance Management after releasing its linkage with SLM, there is no need to undo the setup of or uninstall PFM - Manager and PFM - Web Console.

## (1) Before you start

• In SLM, release its linkage with Performance Management. For details about releasing linkage, see 5.4.3 Releasing the linkage between SLM and Performance Management (working with Performance Management).

## (2) Procedure

For details about uninstallation and undoing the setup of PFM - Manager and PFM - Web Console, see the description of uninstallation and undoing the setup in the *SLM/Performance Management Planning and Configuration Guide*.

## (3) Supplementary information

• For details about uninstallation and undoing the setup of monitoring agents, see the applicable PFM - Agent or PFM - RM manual.

## (4) Next task

• 5.1.11 Undoing the SLM - Manager setup

## 5.1.11 Undoing the SLM - Manager setup

You must undo the SLM - Manager setup before you can set up SLM - Manager again.

When setup is undone, the settings in the system definition files that have been edited by the user and the database information are initialized. Before you unto setup, be sure to back up the system definition files and database, if necessary.

For details about backing up the system definition files, see 8.1.1 Backing up the definition files, and for details about backing up the database, see 8.1.2 Backing up the database.

This subsection explains how to undo the setup of SLM - Manager.

## (1) Before you start

- Verify that setup of SLM Manager whose setup is to be undone has been completed.
- Terminate the SLM Manager whose setup is to be undone.
   For details about the termination method, see 2.1.4 Terminating SLM Manager.

## (2) Procedure

To undo the SLM - Manager setup:

1. Execute the unsetup command.

Execute the following unsetup command:

<sup>5.</sup> Preparations Before Starting

JP1/Service Level Management Description

SLM-Manager-installation-folder\mgr\bin\jslmmgrunsetup

For details about the unsetup command, see 9.13 jslmmgrunsetup (undoes SLM - Manager setup) in 9. Commands.

When the command terminates normally, undoing of the SLM - Manager setup is complete.

### (3) Next task

• 5.1.6 Setting up SLM - Manager

## (4) Related topics

- 5.1.12 Undoing the SLM UR setup
- 11.3 Messages

## 5.1.12 Undoing the SLM - UR setup

You must undo the SLM - UR setup before you can set up SLM - UR again.

When setup is undone, the settings in the system definition files that have been edited by the user are initialized. Before you unto setup, be sure to back up the system definition files, if necessary.

For details about backing up the system definition files, see 8.1.1 Backing up the definition files.

This subsection explains how to undo the setup of SLM - UR.

## (1) Before you start

- Verify that setup of SLM UR whose setup is to be undone has been completed.
- Terminate the SLM UR whose setup is to be undone. For details about the termination method, see 2.1.3 Terminating SLM - UR.

## (2) Procedure

To undo the SLM - UR setup:

- 1. Execute the unsetup command.
  - Execute the following unsetup command:

*SLM-UR-installation-folder*\ur\bin\jslmurunsetup

For details about the unsetup command, see 9.20 jslmurunsetup (undoes the SLM - UR setup) in 9. Commands.

When the command terminates normally, undoing of the SLM - UR setup is complete.

## (3) Next task

• 5.1.7 Setting up SLM - UR

## (4) Related topics

- 5.1.11 Undoing the SLM Manager setup
- 11.3 Messages

#### 5. Preparations Before Starting

JP1/Service Level Management Description

## 5.1.13 Uninstalling SLM

Uninstalling SLM is the same for both SLM - Manager and SLM - UR.

This subsection explains how to uninstall SLM.

## (1) Before you start

- Terminate the SLM Manager or SLM UR that is to be uninstalled. For details about the termination method, see 2.1.4 Terminating SLM - Manager or 2.1.3 Terminating SLM - UR.
- If any Windows service dialog box is open, close it.
- If SLM has been linked with Performance Management, verify that the linkage with Performance Management has been released. For details about releasing the linkage, see 5.4.3 Releasing the linkage between SLM and Performance Management (working with Performance Management).

## (2) Procedure

To uninstall SLM:

- 1. From the Windows Start menu, select Control Panel, and then Uninstall Program.
- 2. From the list, select the SLM Manager or SLM UR to be uninstalled, and then click Uninstall.
- 3. Follow the instructions to uninstall SLM.

The program is uninstalled.

- 4. Restart the computer, if requested.
- 5. Delete the user files.

The installation process does not delete d user-created definition files and log files that were created after the program was installed. To delete these files, use Explorer to delete the folders in which SLM - Manager or SLM - UR was installed.

The uninstallation is now complete.

## (3) Supplementary information

- Some folders might remain after installation is completed. If you do not need these folders or the files in the folders, delete them manually.
- When uninstallation is performed, Hitachi Network Objectplaza Trace Library (HNTRLib2) is also uninstalled automatically. However, if there are programs that are using HNTRLib2, HNTRLib2 will not be uninstalled until all those programs have been uninstalled.
- If you have uninstalled SLM Manager, restore the initial settings for the ports whose firewall settings were changed and that were opened during setup (ports for which the psb\_Listen and manager\_port definition items were specified in the options file).
- If you have uninstalled SLM UR, restore the initial settings for the port whose firewall settings were changed and that was opened during setup (port for which the ur port definition item was specified in the options file).
- If SLM is linked with Performance Management and SLM Manager is uninstalled while it is still linked with Performance Management, information about SLM and monitoring statuses remains in PFM Manager. This leads to unneeded communications because Performance Management's monitoring agents will continue to send performance data to SLM. For details about how to release the linkage with SLM in Performance Management, see the descriptions of linkage and release of linkage with SLM in the *SLM/Performance Management User's Guide*.

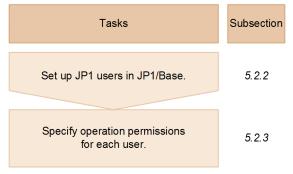
<sup>5.</sup> Preparations Before Starting

### 5.2 User settings in SLM

To use SLM, you must prepare an *authentication server* (JP1/Base), set up JP1 users in the JP1/Base that will be used as the authentication server, and then specify operation permissions for the JP1 users in SLM.

The following figure shows the procedure.





For details about the authentication server that must be prepared before JP1 user settings can be specified in JP1/Base, see 5.2.1 Authentication server.

### 5.2.1 Authentication server

To use SLM, you must have an authentication server for managing the users.

SLM uses JP1/Base as the authentication server.

- Use the JP1/Base on the host on which SLM Manager is installed.
- Provide a host on which JP1/Base is installed that is separate from the host on which both JP1/Base and JP1/Software Distribution Manager have been installed, then use each host as either the *primary authentication server* or the *secondary authentication server*.

If you already have a JP1/Base that has been used as your authentication server because, for example, you are using other JP1 products, you can use your existing authentication server.

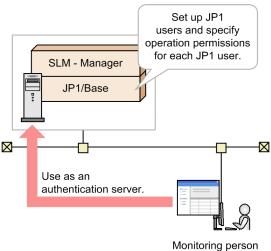
The host specified as the authentication server (primary authentication server) is used to manage JP1 users and operation permissions for JP1 resource groups (service groups).

Therefore, before you set up SLM users, evaluate how you want to use authentication servers.

When there is one authentication server:

The example shown in the following figure uses JP1/Base on the host on which SLM - Manager is installed as the authentication server.

## Figure 5-9: Using JP1/Base on the host on which SLM - Manager is installed as the authentication server

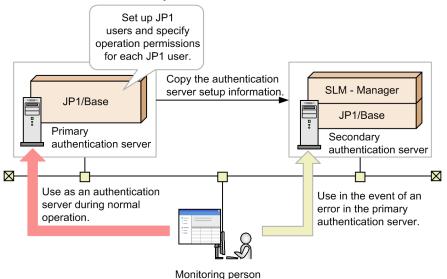


If you use JP1/Base on the host on which SLM - Manager is installed as the authentication server, you can use SLM with the minimum system configuration. However, in the event of a problem in JP1/Base, applications using SLM will stop.

When there are two authentication servers:

The example shown in the following figure provides two hosts on which JP1/Base is installed and uses one as the primary authentication server and one as the secondary authentication server.

## Figure 5-10: Using two hosts on which JP1/Base is installed and using them as primary and secondary authentication servers



If you provide a primary authentication server that is used during normal operation and a secondary authentication server that is used as a backup (and which contains the same setup information as the primary authentication server), then if the primary authentication server cannot be connected for some reason, you can avoid application downtime by switching automatically to the secondary authentication server.

For details about primary and secondary authentication servers, see the section describing authentication servers in the *JP1/Base User's Guide*.

<sup>5.</sup> Preparations Before Starting

JP1/Service Level Management Description

## 5.2.2 Setting up JP1 users in JP1/Base

The users of SLM must be set up as JP1 users in JP1/Base. To set up JP1 users, use the JP1/Base that serves as the authentication server (primary authentication server). When SLM is linked with Performance Management, these JP1 users also become Performance Management users.

For details about the authentication server, see 5.2.1 Authentication server.

This subsection explains how to set up JP1 users who will be authenticated at login by the authentication server.

## (1) Before you start

• Verify that JP1/Base is installed on the host on which SLM - Manager has been set up. If you use a separate primary authentication server, provide a host with JP1/Base installed that is separate from the host on which SLM - Manager has been set up.

For details about how to install JP1/Base, see the JP1/Base User's Guide.

## (2) Procedure

To set up users as JP1 users, use JP1/Base's JP1/Base Environment Settings dialog box or a JP1/Base command. This subsection explains the procedure that uses the JP1/Base Environment Settings dialog box. For details, see the section that describes setup of JP1 users in the *JP1/Base User's Guide*.

To set up a JP1 user:

1. Specify the authentication server.

Specify the authentication server in **Order of authentication server** on the **Authentication Server** tab. You can have a maximum of two authentication servers (primary and secondary authentication servers).

2. Register the JP1 user.

On the Authentication Server tab, in JP1 user, register a JP1 user and a password for that user.

When the specified settings have been applied to JP1/Base's JP1/Base Environment Settings dialog box, setup of the user as a JP1 user is complete.

## (3) Supplementary information

• For details about restrictions of the specification of JP1 users, see the description about the settings of JP1 users (standard users) in the *JP1/Base User's Guide*.

## (4) Next task

• 5.2.3 Specifying operation permissions for each JP1 user

## (5) Related topics

• 5.2.1 Authentication server

## 5.2.3 Specifying operation permissions for each JP1 user

Specify operation permissions for each JP1 user in the JP1/Base that is used as the authentication server (primary authentication server).

<sup>5.</sup> Preparations Before Starting

JP1/Service Level Management Description

This subsection explains how to specify operation permissions for SLM after users have been set up as JP1 users.

## (1) Before you start

• Set up the users as JP1 users.

For details about how to set up users as JP1 users, see 5.2.2 Setting up JP1 users in JP1/Base.

• Evaluate how you want to set up JP1 resource groups (*service groups*<sup>#</sup>) and the JP1 permission level that is to be applied to each service group for the JP1 users.

SLM's JP1 permission levels are JP1\_ITSLM\_Admin (*service group administrator*) and JP1\_ITSLM\_User (*service user*).

#

Same as the JP1 resource groups in JP1/Base. This is the unit of managing monitored services for each client (such as a company) that outsources business systems. Every monitored service belongs to a service group.

In SLM, operation permissions are defined for each JP1 permission level as described in the following table.

Table 5-3: Operation permissions for each JP1 permission level

No.	JP1 permission level	User for which JP1 permission level is set	Operation permissions
1	JP1_ITSLM_Admin	Service group administrator	<ul> <li>Add and delete monitored services.</li> <li>Set up monitoring items.</li> <li>Start and stop monitoring.</li> <li>Monitor the status of monitored services.</li> <li>Investigate problems.</li> <li>Output reports.</li> </ul>
2	JP1_ITSLM_User	Service user	<ul><li>Monitor the status of monitored services.</li><li>Investigate problems.</li><li>Output reports.</li></ul>

Because SLM does not allow a service group name beginning with a hyphen (-) to be specified in a command argument, we recommend that you use service group names that do not begin with a hyphen.

## (2) Procedure

The JP1/Base Environment Settings dialog box or a JP1/Base command is used to specify operation permissions for each JP1 user. This subsection explains the procedure that uses the JP1/Base Environment Settings dialog box. For details, see the section that describes setup of JP1 users in the *JP1/Base User's Guide*.

To specify operation permissions for a JP1 user:

1. Specify operation permissions for a JP1 user.

On the Authentication Server tab, in Authority level for JP1 resource group, specify the applicable operation permissions for the JP1 user.

When the specified settings have been applied in JP1/Base's JP1/Base Environment Settings dialog box, specification of operation permissions for the JP1 user is complete.

<sup>5.</sup> Preparations Before Starting

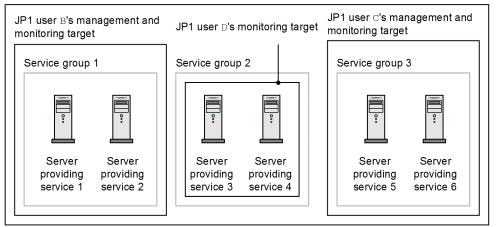
## (3) Supplementary information

- This subsection explains an example of specifying operation permissions for JP1 users. This example specifies operation permissions for four JP1 users, A through D, who perform operations on service groups 1 through 3, each of which has two monitored services, as follows:
  - JP1 user A manages and monitors the monitored services in service groups 1, 2, and 3.
  - JP1 user B manages and monitors the monitored services in service group 1.
  - JP1 user C manages and monitors the monitored services in service group 3.
  - JP1 user D monitors the monitored services in service group 2 (this JP1 user does not manage monitored services).

The following figure illustrates these conditions.

#### Figure 5-11: Example of specifying operation permissions

JP1 user A's management and monitoring target



To satisfy these conditions, operation permissions must be specified for these JP1 users as shown in the following table.

#### Table 5-4: Example of specifying operation permissions

No.	JP1 user	Service group			
		1	2	3	
1	A	Admin	Admin	Admin	
2	В	Admin			
3	С			Admin	
4	D		User		

Legend:

Admin: Service group administrator permissions are specified.

User: Service user permissions are specified.

--: No operation permissions are specified.

### (4) Related topics

- 2.1.1 Starting SLM Manager
- 5.5.1 Linking with JP1/IM

#### 5. Preparations Before Starting

```
JP1/Service Level Management Description
```

## 5.2.4 Notes about user setup

The following notes apply to user setup.

- Deleting a JP1 resource group (service group) does not delete the monitored services that have been registered for the service group that is being deleted. When you want to delete a service group, first delete the monitored services that have been registered for the target service group.
- Once you start monitoring the status of monitored services in SLM, do not perform any of the change or deletion operations in JP1/Base shown below; if any of these operations are performed, SLM operation is not guaranteed:
  - Renaming JP1 users
  - Deleting JP1 users
  - Renaming JP1 resource groups (service groups)
  - Deleting JP1 resource groups (service groups)
  - Changing the operation permissions for a JP1 user

<sup>5.</sup> Preparations Before Starting

## 5.3 User setup in Performance Management (working with Performance Management)

Performance Management uses two methods to manage user accounts. These management methods are called the user authentication modes. Performance Management manages hosts in units called business groups.

If you link SLM with Performance Management, set up the JP1 users in JP1/Base based on Performance Management's user authentication modes. Also, set up in Performance Management the business groups that are to be associated with the JP1 users.

After these setups have been completed, Performance Management's user authentication can be performed when JP1 users log in to SLM. This enables smooth acquisition of system performance information related to monitored services in the event of a reduction in service level.

## 5.3.1 User authentication modes

Performance Management manages user accounts by applying one of the following authentication modes:

• *PFM authentication mode* 

This authentication mode manages user accounts in Performance Management's operation monitoring system. *Performance management users* created in Performance Management log in to PFM - Web Console. The user accounts are managed by PFM - Manager.

• JP1 authentication mode

This authentication mode manages user accounts centrally in JP1/Base.

*JP1 users* created in JP1/Base log in to PFM - Web Console. The user accounts are managed by JP1/Base. To use this authentication mode, JP1/Base must be installed on the host on which PFM - Manager is installed.

For details about user authentication in Performance Management, see the *SLM/Performance Management User's Guide*.

## 5.3.2 Business groups

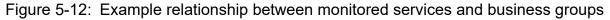
Performance Management manages hosts in business groups.

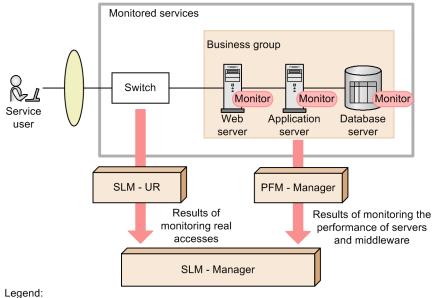
## (1) About business groups

*Business groups* are the units used in Performance Management for grouping managed hosts. A user to whom a business group has been assigned can reference the information collected by the monitoring agent that monitors the hosts in that business group.

The following figure shows an example relationship between monitored services and business groups.

<sup>5.</sup> Preparations Before Starting





Monitor : Performance Management's monitoring agent

In this example, the Web server, application program server, and database server that are monitored by Performance Management's monitoring agent are defined to belong to one business group. This business group has been defined in SLM's monitored service configuration information. When monitoring of the services begins in SLM, SLM - UR collects the results of monitoring real accesses to the services and SLM - Manager collects data including the OS performance on each host that belongs to the business group. Because SLM - Manager manages all this information, the status of all monitored services can be monitored.

For example, if SLM is to monitor a work timesheet management service, SLM - UR collects monitoring results including the average response times of real accesses from service users to the work timesheet management service. SLM - Manager collects performance data as the monitoring results of one business group, including the CPU and memory usage of individual hosts, that is, the Web server that accepts requests to the work timesheet management service, the application program server on which the service is actually running, and the database server that manages the data. All this information can be monitored in SLM windows.

#### Note

When there is a change to the number of monitored services in a business group that has been defined in the monitored service configuration information, there is no need to change the configuration information in the SLM windows.

## (2) Concept of business group creation

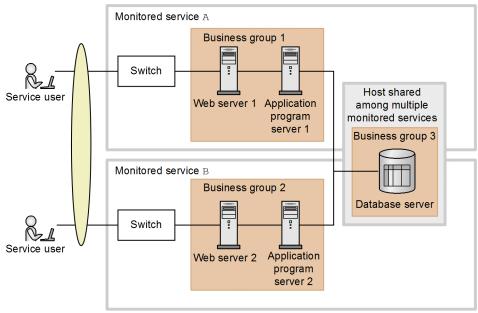
In Performance Management, a managed host cannot belong to multiple business groups. In SLM, you might want to specify the same host, such as the database host, in multiple monitored services' configuration information.

In such a case, define a managed host that might be included in multiple services' configuration information as an independent business group, as shown in the following example.

<sup>5.</sup> Preparations Before Starting

JP1/Service Level Management Description

## Figure 5-13: Example of including a single managed host in multiple services' configuration information



In this example, monitored services A and B share the same host for the database server. This is made possible by defining the database server to be shared as business group 3 separately from business groups 1 and 2. As a result, the database server can be specified in two monitored services' configuration information

## (3) Elements used when SLM is linked with Performance Management

The following figure shows the relationship among elements used when SLM is linked with Performance Management and SLM's monitored services.

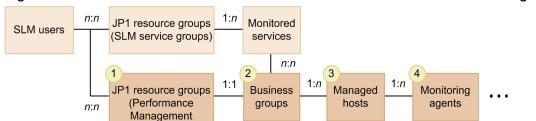


Figure 5-14: Elements used when SLM is linked with Performance Management

: Performance Management element

The following table explains the Performance Management elements.

#### Table 5-5: Performance Management elements

business groups)

: SLM element

No.	Element	Description
1	JP1 resource group (Performance Management business group)	A group of logical resources in JP1/Base. In Performance Management, one JP1 resource group corresponds to one business group.
2	Business group	A group of one or more managed hosts in Performance Management. One business group can belong to only one JP1 resource group, not to multiple JP1 resource groups.

<sup>5.</sup> Preparations Before Starting

Legend:

JP1/Service Level Management Description

No.	Element	Description
2	Business group	The relationship between business groups and monitored services managed in SLM is multiple business groups to multiple monitored services.
3	Managed host	Host monitored by Performance Management. One managed host belongs to one business group.
4	Monitoring agent	Agent program that exists in each server and each middleware running on a managed host and that monitors the corresponding server or middleware. A monitoring agent collects more than one set of performance data. For PFM - RM, a virtual monitoring agent exists on each managed host, but its entity is located on the remote host.

## (4) Supplementary information

- For a business group containing a host that is shared among multiple JP1 users, set up a separate JP1 resource group from any JP1 resource group for SLM's service group. If the JP1 resource group for the service group is set up for this business group and a monitored service is added to that service group, all the sharing users can monitor that added service.
- When monitoring a service running on a virtual host, SLM does not retain the relationship between the virtual host and the physical host on which the virtual host is running. These hosts are monitored as separate elements of the monitored service.

The following shows an example.

Figure 5-15: Monitoring by SLM of virtual hosts and physical host, which are Performance Management's monitored targets

M	Monitored service A							
	Business group 1							
	Physical host 1	(Hyper-V server)						
	Virtual host 1 (Web server)	Virtual host 2 (application program server)	Virtual host 3 (database server)					

In this example, business group 1 is defined as the configuration information for monitored service A. Physical host 1 and virtual hosts 1 through 3 that are running on physical host 1 are defined for business group 1. SLM treats physical host 1 and virtual hosts 1 through 3 as independent elements of monitored service A without having to recognize that virtual hosts 1 through 3 are running on physical host 1.

## 5.3.3 Setting up the users who will be using Performance Management (PFM authentication mode)

When you link SLM with Performance Management, you must grant the SLM users the operation permissions for the JP1 resource groups corresponding to Performance Management's business groups. You can register JP1 resource groups in JP1/Base's JP1/Base Environment Settings dialog box. For details, see the section that describes setup of JP1 users in the *JP1/Base User's Guide*.

## (1) Before you start

• Verify that Performance Management has been installed and set up. For details about how to install and set up Performance Management, see the *SLM/Performance Management Planning and Configuration Guide*.

<sup>5.</sup> Preparations Before Starting

- Verify that the PFM authentication mode has been set up as Performance Management's user authentication mode. If you are using the JP1 authentication mode, see 5.3.4 Setting up the users who will be using Performance Management (JP1 authentication mode).
- Verify that the SLM users who will be using Performance Management have been registered. For details about setup of SLM users, see 5.2.2 Setting up JP1 users in JP1/Base.
- Check the correspondence between SLM's service groups and Performance Management's business groups, and verify the user names of SLM's JP1 users (service group administrators or service users) to which permissions for the business groups are to be granted.

## (2) Procedure

PFM - Web Console is used to set up Performance Management users' accounts. For details, see the *JP1/Performance Management User's Guide*.

To set up JP1 users, use JP1/Base's JP1/Base Environment Settings dialog box or a JP1/Base command. This subsection explains the procedure that uses the JP1/Base Environment Settings dialog box. For details, see the section that describes setup of JP1 users in the *JP1/Base User's Guide*.

To set up the users who will be using Performance Management:

1. Log in to PFM - Web Console as a user who has a user account with administrator user permissions, and then create a performance management user account that is authorized to monitor the target business group.



For the user name of the user account to be created, specify the name of an SLM service group administrator or service user.

- 2. Start JP1/Base as a user with Administrators permissions, and then select the JP1 user with the same name as for the user account created in step 1.
- 3. For the selected JP1 user, add the JP1 resource group that corresponds to the business group to be monitored.



The correspondence between JP1 resource group names and business groups is defined in the business group definition file that is created in 5.3.5 Defining business groups in Performance Management.

4. For the selected JP1 user, add the JP1 PFM Operator permission.

The following table describes the types of SLM users, permissions to be granted to each user, and operations that can be performed on Performance Management:

No.	SLM user type	Permissions	Operations that can be performed on Performance Management
1	Service group administrator	<ul><li>JP1_ITSLM_Admin</li><li>JP1_PFM_Operator</li></ul>	Starting and stopping monitoring agents and specifying conditions related to the monitoring performed by monitoring agents. Also, viewing the information collected by monitoring agents from the SLM windows.
2	Service user	<ul><li>JP1_ITSLM_User</li><li>JP1_PFM_Operator</li></ul>	Viewing the information collected by monitoring agents from the SLM windows.

<sup>5.</sup> Preparations Before Starting

When the specified settings have been applied to JP1/Base's JP1/Base Environment Settings dialog box, the setup is complete.

## (3) Supplementary information

• When Performance Management uses the PFM authentication mode, single sign-on from an SLM window is not supported. If an attempt is made to display Performance Management information from SLM's Troubleshoot window, Performance Management's login window is displayed.

## (4) Next task

• 5.3.5 Defining business groups in Performance Management

## (5) Related topics

- 5.2.2 Setting up JP1 users in JP1/Base
- 5.2.3 Specifying operation permissions for each JP1 user

## 5.3.4 Setting up the users who will be using Performance Management (JP1 authentication mode)

When you link SLM with Performance Management, you must grant the SLM users the operation permissions for the JP1 resource groups corresponding to Performance Management's business groups. You can register JP1 resource groups in JP1/Base's JP1/Base Environment Settings dialog box. For details, see the section that describes setup of JP1 users in the *JP1/Base User's Guide*.

## (1) Before you start

- Verify that Performance Management has been installed and set up. For details about how to install and set up Performance Management, see the *JP1/Performance Management Planning and Configuration Guide*.
- Verify that the JP1 authentication mode has been set up as Performance Management's user authentication mode. If you are using the PFM authentication mode, see 5.3.3 Setting up the users who will be using Performance Management (PFM authentication mode).
- Verify that the SLM users who will be using Performance Management have been registered. For details about setup of SLM users, see 5.2.2 Setting up JP1 users in JP1/Base.
- Check the correspondence between SLM's service groups and Performance Management's business groups, and verify the user names of SLM's JP1 users (service group administrators or service users) to which permissions for the business groups are to be granted.

## (2) Procedure

To set up JP1 users, use JP1/Base's JP1/Base Environment Settings dialog box or a JP1/Base command. This subsection explains the procedure that uses the JP1/Base Environment Settings dialog box. For details, see the section that describes setup of JP1 users in the *JP1/Base User's Guide*.

To set up the users who will be using Performance Management:

1. Start JP1/Base as a user with Administrators permissions, and then select a JP1 user corresponding to an SLM service group administrator or service user.

5. Preparations Before Starting

JP1/Service Level Management Description

2. For the selected JP1 user, add the JP1 resource group that corresponds to the business group to be monitored.

### Note

The correspondence between JP1 resource group names and business groups is defined in the business group definition file that is created in 5.3.5 Defining business groups in Performance Management.

3. For the selected JP1 user, add the JP1\_PFM\_Operator permission.

The following table describes the types of SLM users, permissions to be granted to each user, and operations that can be performed on Performance Management:

No.	SLM user type	Permission	Operations that can be performed on Performance Management
1	Service group administrator	<ul><li>JP1_ITSLM_Admin</li><li>JP1_PFM_Operator</li></ul>	Starting and stopping monitoring agents and specifying conditions related to the monitoring performed by monitoring agents. Also, viewing the information collected by monitoring agents from the SLM windows.
2	Service user	<ul><li>JP1_ITSLM_User</li><li>JP1_PFM_Operator</li></ul>	Viewing the information collected by monitoring agents from the SLM windows.

If you add "JP1\_PFM" to the selected JP1 user as the JP1 resource group for the business group to be monitored, add JP1\_PFM\_Admin or JP1\_PFM\_Operator permission according to the access permission required by PFM.

For details, see the description of JP1 user permission required to link with SLM in the JP1/Performance Management User's Guide.

When the specified settings have been applied to JP1/Base's JP1/Base Environment Settings dialog box, the setup is complete.

## (3) Next task

• 5.3.5 Defining business groups in Performance Management

## (4) Related topics

- 5.2.2 Setting up JP1 users in JP1/Base
- 5.2.3 Specifying operation permissions for each JP1 user

## 5.3.5 Defining business groups in Performance Management

You define business groups so that you can group managed hosts in Performance Management. You must also establish the correspondences between the defined business groups and the JP1 resource groups.

## (1) Before you start

• In Performance Management, perform the setup required for using business groups. Also, see 5.3.2 Business groups to check the concept of business group creation and determine the range of managed hosts to be included in the business groups. For details about the settings, see the description of business group setup and operations in the *SLM/Performance Management User's Guide*.

• Verify the names of the JP1 resource groups that were added in 5.3.3 Setting up the users who will be using Performance Management (PFM authentication mode) or 5.3.4 Setting up the users who will be using Performance Management (JP1 authentication mode) to establish the correspondences to the business groups.

## (2) Procedure

This subsection provides an overview of the business group creation procedure. For details about the settings, see the description of business group setup and operations in the *SLM/Performance Management User's Guide*.

To create business groups:

- 1. Create a business group definition file.
  - In the business group definition file, specify each business group name and the JP1 resource group and host name that correspond to each business group name.
- 2. Check the validity of the business group definition file, and then import it to Performance Management.

When the command terminates normally, business group creation is complete.

## (3) Next task

• 5.4.1 Setting up the linkage between SLM and Performance Management (working with Performance Management)

### 5.3.6 Example JP1 user setup in Performance Management

This example registers an SLM user and grants to that user the operation permissions needed for SLM and Performance Management monitoring. It also sets up the business groups to be monitored by Performance Management and the managed hosts to be included in the business groups.

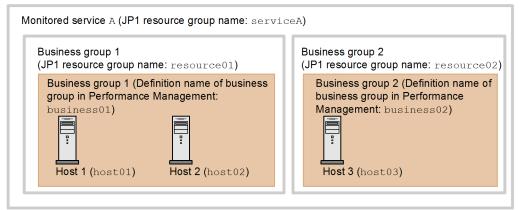
To specify which monitoring items of Performance Management are to be monitored by SLM, further settings are needed in SLM's Settings window after the setup explained here has been completed. For details about the settings in SLM's Settings window, see 3. Monitoring the Services to Be Monitored and Setup Required for Monitoring.

## (1) Prerequisites

The prerequisites for this example of setup are as follows:

- SLM will be linked with a newly employed Performance Management.
- The user authentication mode in Performance Management is the JP1 authentication mode.
- user01 is set up as a new JP1 user and registered as SLM's service group administrator.
- The following figure shows the relationship between the monitored services and the hosts that user01 will be monitoring.

## Figure 5-16: System configuration for the example of setup of a JP1 user in Performance Management



The example defines hosts 1 and 2 in business group 1 as the hosts used only by monitored service A. The example defines host 3 in business group 2, which is an independent business group, because this host might be used by other monitored services.

## (2) Setting up a JP1 user who will be using SLM

#### Tasks in JP1/Base

The user with Administrators permissions for the host on which JP1/Base is installed registers user01 as a new JP1 user. This registration is performed using the procedure described below. For details about the prerequisite tasks and operations, see the description of JP1 user setup (standard user) in the *SLM/Base User's Guide*.

To set up a JP1 user who will be using SLM:

- 1. Start JP1/Base as a user with Administrators permissions. In the JP1/Base Environment Settings dialog box, on the **Authentication Server** tab, in **JP user**, click the **Add** button.
- 2. In the displayed JP1 User dialog box, register user01.

user01 is displayed under Users in JP user.

3. In JP user, from Users, select user01.

In **Authority level for JP1 resource group**, the group (JP1 resource group) that this user can access and that group's permission level (JP1 permission level) are displayed.

4. In Authority level for JP1 resource group, click the Add button.

The JP1 Resource Group Details dialog box is displayed.

5. In JP1 resource group, enter serviceA (JP1 resource group name corresponding to service group A), and then in Permissions, add JP1\_ITSLM\_Admin.

6. Click the **OK** button.

#### **Results of tasks**

user01 has been registered as a user who will be using SLM and the service group administrator permissions for serviceA were granted.

#### 5. Preparations Before Starting

## (3) Adding the settings to link with Performance Management

#### Tasks in JP1/Base

This example adds the settings required for linking with Performance Management for registered user01. As was the case in (2), this task must be executed by a user with Administrators permissions for the host on which JP1/Base is installed.

- 1. In the JP1/Base Environment Settings dialog box, on the Authentication Server tab, from the JP1 users displayed in JP user, select user01.
- In Authority level for JP1 resource group, click the Add button. The JP1 Resource Group Details dialog box is displayed.
- 3. In JP1 resource group, enter resource01 (JP1 resource group name corresponding to business group 1), and then in Permissions, add JP1\_PFM\_Operator.
- 4. Click the **OK** button.
- 5. While user01 is selected in JP user on the Authentication Server tab, click the Add button again in Authority level for JP1 resource group.

The JP1 Resource Group Details dialog box is displayed.

- 6. In JP1 resource group, enter resource02 (JP1 resource group name corresponding to business group 2), and then in Permissions, add JP1\_PFM\_Operator.
- 7. Click the **OK** button.

#### **Results of tasks**

The permissions (JP1\_PFM\_Operator) needed to monitor resource01 and resource02, the JP1 resource groups corresponding to Performance Management's business groups, are now granted to user01 who will be using SLM.

### (4) Defining business groups

This example defines business groups to group the managed hosts in Performance Management, and then establishes their correspondence to JP1 resource groups. For details about the prerequisite tasks and operations, see the description of business group setup and operation in the *SLM/Performance Management User's Guide*.

#### Tasks in PFM - Manager

To define business groups:

- 1. Create a business group definition file for business group 1 and then save it. Create the following business group definition file:
  - Specify gyoumu01 as the name for the business group.
  - Specify resource01 as the JP1 resource group name.
  - Specify host01 and host02 as the host names.
- 2. Create a business group definition file for business group 2 and then save it.

Create the following business group definition file:

- Specify gyoumu02 as the name for the business group.
- Specify resource02 as the JP1 resource group name.
- Specify host03 as the host name.

#### 5. Preparations Before Starting

3. Verify the validity of the business group definition files, and then import them to Performance Management.

#### **Results of tasks**

Correspondence is now established between Performance Management's business groups and resource01 and resource02 (JP1 resource groups monitored by user01), and the managed hosts are now defined.

## (5) Related topics

- 5.2.2 Setting up JP1 users in JP1/Base
- 5.2.3 Specifying operation permissions for each JP1 user
- 5.3.4 Setting up the users who will be using Performance Management (JP1 authentication mode)
- 5.3.5 Defining business groups in Performance Management

<sup>5.</sup> Preparations Before Starting

### 5.4 Setting up a linkage between SLM and Performance Management

To link SLM with Performance Management, you must edit the system definition file in SLM. In Performance Management, you must use PFM - Web Console to change the Master Manager properties. For details about changing the Master Manager properties in PFM - Web Console, see the *JP1/Performance Management User's Guide*.

## 5.4.1 Setting up the linkage between SLM and Performance Management (working with Performance Management)

Use SLM's system definition file to specify the settings needed to link SLM with Performance Management.

## (1) Before you start

- Verify that SLM Manager, PFM Manager, and PFM Web Console have been installed and set up.
- Verify that SLM Manager is terminated. For details about how to terminate SLM Manager, see 2.1.4 Terminating SLM Manager.
- Verify that a host name, not the IP address, is specified in the managerHost property in the system definition file (jplitslm.properties) of SLM Manager. If an IP address is specified, change it to the host name.

## (2) Procedure

To set up the linkage between SLM and Performance Management:

1. In the system definition file (jplitslm.properties) of SLM - Manager, specify the following properties:

- pfmManagerHost (PFM Manager's host name)
- pfmManagerPort (PFM Manager's port number<sup>#1, #2</sup>)
- pfmWebConsoleURL (URL of PFM Web Console that is to be started from SLM)
- pfmReceivePort (Port number used by SLM Manager to receive performance data<sup>#2</sup>)
- #1: This port is used by the PFM Manager service's View Server.

#2: For details, see the description of network setup for linking with SLM in the *SLM/Performance Management User's Guide*.

Edit the system definition file of SLM - Manager. The system definition file is stored at the following location: *SLM-Manager-installation-folder*\mgr\conf\jplitslm.properties

- 2. If a firewall has been set up between SLM and Performance Management, set the firewall to open the ports that correspond to the following properties specified in step 1:
  - pfmManagerPort
  - pfmReceivePort

Note that the port specified in the pfmReceivePort property is used for communications between SLM - Manager and monitoring agents. Therefore, configure the firewall between SLM - Manager and the monitoring agents so that the port specified in pfmReceivePort is open.

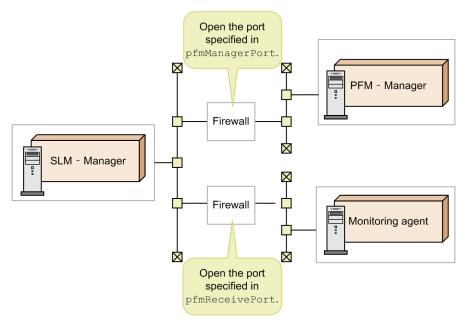
Also check the following:

• Check if the firewall between SLM - Manager and PFM - Manager is configured so that the port specified for the pfmManagerPort property is open. If the port is not open, configure the firewall so that the port is open.

• Check if the ephemeral ports used for communication between SLM - Manager and PFM - Manager are open. If they are not open, configure the firewall so that the ephemeral ports are open or configure the firewall to allow communication from the following program:

*SLM-Manager-installation-folder*\mgr\bin\system\jslmmadaptor.exe

The following figure shows the correspondence between firewall locations and ports to be opened.



The setup needed in SLM to link with Performance Management is now complete.

## (3) Next task

• 5.4.2 Specifying settings for saving Performance Management's performance data from SLM (working with Performance Management)

# 5.4.2 Specifying settings for saving Performance Management's performance data from SLM (working with Performance Management)

When PFM - Web Console is started from SLM and you use it to monitor the performance data collected by Performance Management, if the performance data is not stored in Performance Management's Store database, detailed performance data cannot be checked.

You can use PFM - Web Console or SLM - Manager's system definition file to specify the settings needed to store performance data in the Store database.

This subsection explains the procedure for editing SLM - Manager's system definition file and storing performance data in the Store database.

## (1) Before you start

• Verify that setup of SLM - Manager has been completed. For details about the setup method, see 5.1.6 Setting up SLM - Manager.

<sup>5.</sup> Preparations Before Starting

• Verify that SLM - Manager has terminated. For details about the termination method, see 2.1.4 Terminating SLM - Manager.

## (2) Procedure

To specify the settings for saving Performance Management's performance data from SLM:

1. In SLM - Manager's system definition file (jplitslm.properties), set the pfmLoggingData property to true.

Edit SLM - Manager's system definition file. The system definition file is stored at the following location: *SLM-Manager-installation-folder*\mgr\conf\jplitslm.properties

The settings for storing performance data in Performance Management's Store database have now been specified.

## (3) Supplementary information

• The following table shows the relationship between settings in SLM and Performance Management and how performance data is stored.

Table 5-6: Relationship between settings in SLM and Performance Management and how performance data is stored

No.	SLM monitoring status	pfmLoggingData property setting in SLM	Log property setting in PFM - Web Console <sup>#</sup>	Storage location for collected performance data
1	Monitoring has started	true	Yes	<ul> <li>Performance Management's Store database</li> <li>SLM database</li> </ul>
2			No	<ul> <li>Performance Management's Store database</li> <li>SLM database</li> </ul>
3		false	Yes	<ul> <li>Performance Management's Store database</li> <li>SLM database</li> </ul>
4			No	SLM database
5	Monitoring has stopped or monitoring is not performed in SLM		Yes	Performance     Management's Store     database
6			No	Performance data is not collected

Legend:

--: Not applicable (the property setting is not applicable)

- #: The setting specified in PFM Web Console is applied to each monitoring agent of Performance Management.
- SLM's pfmLoggingData property value is applied from SLM Manager to each monitoring agent when SLM starts monitoring. The applied property value is retained by each monitoring agent until the next time SLM monitoring begins.

5. Preparations Before Starting

JP1/Service Level Management Description

## 5.4.3 Releasing the linkage between SLM and Performance Management (working with Performance Management)

To release the linkage between SLM and Performance Management, you must delete the linkage information in both SLM and Performance Management.

In SLM, delete the linkage information held by SLM - Manager. In Performance Management, delete the linkage information held by PFM - Manager and the individual monitoring agents. For details about how to delete linkage information in Performance Management, see the *JP1/Performance Management User's Guide*.

The following figure shows the procedure for releasing the linkage between SLM and Performance Management.

#### Figure 5-17: Procedure for releasing the linkage between SLM and Performance Management

Tasks in SLM	Step	Tasks in PFM – Manager and PFM - Web Console	Step
Stop monitoring the monitored services.	Step 1		
Release the associations among monitored services, business groups, and monitoring agents.	Step 2		
Terminate SLM - Manager.	Step 3		
	J		
Delete from the system definition file the definitions related to the Performance Management whose linkage is to be released.	Step 4		
		Start PFM - Manager.	Step 5
		Change the Master Manager properties in PFM - Web Console.	Step 6

## (1) Before you start

- Check if SLM is running. If SLM is not running, start the procedure from step 4.
- Verify that you have the service group administrator permissions. If you do not have the service group administrator permissions, request the service group administrator to perform step 1.
- Verify that monitoring of the services for which the association with Performance Management's business groups and monitoring agents is to be released is stopped.

For details about how to stop monitoring, see 4.2.2 Stopping monitoring.

 If monitoring of the services for which the association with Performance Management's business groups and monitoring agents is to be released is underway (not stopped), verify that PFM - Manager is running.
 For details about how to start PFM - Manager, see the description about starting and terminating Performance Management in the *SLM/Performance Management User's Guide*.

<sup>5.</sup> Preparations Before Starting

JP1/Service Level Management Description

## (2) Procedure

To release the linkage between SLM and Performance Management:

1. If the services for which the association with Performance Management's business groups and monitoring agents is to be released are currently being monitored, stop the monitoring.

For details about how to stop monitoring, see 4.2.2 Stopping monitoring.

2. In SLM, release all associations between monitored services and business groups and between monitored services and Performance Management's monitoring agents.

In the **Configuration information settings** area of the Settings window, release the associations between monitored services and business groups and monitoring agents. For details about how to display the **Configuration information settings** area, see 3.2.7 Setting up the monitoring items for system performance as configuration information (working with Performance Management).

3. Terminate SLM - Manager.

For details about the termination method, see 2.1.4 Terminating SLM - Manager.

- 4. In SLM Manager's system definition file (jplitslm.properties), delete the following property values:
  - pfmManagerHost (PFM-Manager's host name)
  - pfmManagerPort (PFM-Manager's port number)
  - pfmWebConsoleURL (URL of PFM Web Console that is started from SLM)
  - pfmReceivePort (Port number used by SLM Manager to receive performance data)

SLM - Manager's system definition file is stored at the following location:

SLM-Manager-installation-folder\mgr\conf\jplitslm.properties

5. If PFM - Manager is stopped, start it.

For details about how to start PFM - Manager, see the description about starting and terminating Performance Management in the *SLM/Performance Management User's Guide*.

6. In PFM - Web Console, change the Master Manager properties.

For details about changing properties in PFM - Web Console, see the SLM/Performance Management User's Guide.

The procedure performed in SLM to release the linkage with Performance Management is now complete.

If you skipped step 2 and performed step 3 and the subsequent steps, perform step 1 after you have deleted and changed the SLM and Performance Management definitions.

## (3) Related topics

- 2.1.4 Terminating SLM Manager
- 3.2.7 Setting up the monitoring items for system performance as configuration information (working with Performance Management)

## 5.5 Settings for reporting monitoring results by email (working with JP1/IM)

If you link SLM with *JP1/IM* (JP1/IM - Manager and JP1/IM - View), you can use JP1/IM functions, including notification of monitoring results by email. This linking is optional. Evaluate whether you need to link with JP1/IM.

This section explains how to link with JP1/IM and provides details of the JP1 events that are needed to set up JP1/IM's automated actions.

For details about automated actions, see the JP1/Integrated Management - Manager Overview and System Design Guide.

#### System configuration when SLM is linked with Performance Management

One SLM - Manager can connect to one JP1/IM - Manager. One SLM - Manager can connect to one PFM - Manager. Therefore, if you link SLM with JP1/IM and Performance Management, you need one JP1/IM - Manager and one PFM - Manager for each SLM - Manager.

### 5.5.1 Linking with JP1/IM

SLM uses JP1/Base functions and issues JP1 events in the following cases:

- · Events to be reported to monitoring persons occurred on monitored services
- · Events to be reported to system operators occurred in SLM

The JP1 events are forwarded to JP1/IM - Manager if their forwarding settings are specified in JP1/Base's forwarding settings file. The JP1 events can then be monitored centrally from JP1/IM - View's Event Console window.

Also, if you set up automated actions in JP1/IM - Manager, you can automate notification of monitoring results by using emails and alarms to report JP1 events.

For details about the forwarding settings, see the *JP1/Base User's Guide*. For details about automated actions, see the *JP1/Integrated Management - Manager Overview and System Design Guide*.

This subsection explains how to link SLM with JP1/IM.

### (1) Before you start

- Verify that setup of SLM Manager has been completed.
   For details about the setup method, see 5.1.6 Setting up SLM Manager.
- Install JP1/IM.

There is no need to install JP1/IM on the host on which SLM - Manager is installed. For details about how to install JP1/IM, see the *SLM/Integrated Management - Manager Configuration Guide*.

### (2) Procedure

To link with JP1/IM:

In SLM - Manager's system definition file (jplitslm.properties), set the JPlEvent property to true.
 Edit SLM - Manager's system definition file. The system definition file is stored at the following location:
 SLM-Manager-installation-folder\mgr\conf\jplitslm.properties

<sup>5.</sup> Preparations Before Starting

- 2. Copy SLM Manager's definition file for extended event attributes to JP1/IM Manager's folder.
  - SLM Manager's source file for Japanese language environment:

*SLM-Manager-installation-folder*\mgr\conf\event\jplimm\ja \hitachi\_jp1\_itslm\_attr\_sys\_ja.conf

SLM - Manager's source file for English language environment:

*SLM-Manager-installation-folder*\mgr\conf\event\jplimm\en \hitachi\_jpl\_itslm\_attr\_sys\_en.conf

JP1/IM - Manager's target folder:

*JP1/IM-Manager-installation-folder*\conf\console\attribute\

If you are using JP1/IM - Manager in a cluster environment, replace *JP1/IM-Manager-installation-folder* with *shared-folder*\jp1cons.

3. Restart JP1/IM - Manager.

The definition change that has been made is not applied until JP1/IM - Manager is restarted.

The setup for linking with JP1/IM is now complete.

## (3) Supplementary information

• The table below lists the JP1 events that are issued by SLM. For details about the attributes of the JP1 events, see the manual *JP1/Integrated Management* - *Manager Command and Definition File Reference*.

Event ID	Timing of event issuance	Message ID
0x00006810	SLM - Manager has started.	KNAS02007-I
0x00006811	SLM - Manager has terminated.	KNAS02008-I
0x00006812	SLM - Manager terminated abnormally.	КNAS02009-Е
0x00006890 <sup>#</sup>	Trend monitoring detected a trend in service performance that might lead to an overage of a threshold.	KNAS34000-W
0x00006891 <sup>#</sup>	Threshold value monitoring detected that service performance has exceeded a threshold.	KNAS34001-E
0x00006892 <sup>#</sup>	An out-of-range value that is significantly different from the baseline was detected during out-of-range value detection.	KNAS34002-W
0x00006893 <sup>#</sup>	SLO monitoring detected a trend in system performance that might lead to an overage of an SLO threshold.	KNAS34009-W
0x00006894 <sup>#</sup>	Threshold value monitoring detected that system performance has exceeded the upper-limit threshold value. Threshold value monitoring detected that system performance has dropped below the lower-limit threshold value.	KNAS34008-E
0x00006895 <sup>#</sup>	A system performance value that is significantly different from the baseline was detected during predictive error detection.	KNAS34010-W

Table 5-7: List of JP1 events

#: JP1 events are issued when system performance exceeds a threshold if the JP1Event and JP1EventForSystem properties are set to true in SLM - Manager's system definition file (jp1itslm.properties).

## (4) Related topics

- 5.5.2 Details of JP1 events
- 5.6.1 Editing the system definition files

## 5.5.2 Details of JP1 events

This subsection provides the details of the JP1 events by event ID.

For details about the attributes of the JP1 events, see the manual *JP1/Integrated Management - Manager Command and Definition File Reference*.

## (1) Details of 0x00006810

Attribute typ	De	ltem	Attribute name	Contents
Basic attribute		Event ID		0x00006810
		Message		KNAS02007-I The SLM - Manager service has started.
Extended	Common information	Severity	SEVERITY	Information
attribute		User name	USER_NAME	SYSTEM
		Product name	PRODUCT_NAME	"/HITACHI/JP1/SLM"
		Object type	OBJECT_TYPE	SERVICE
		Object name	OBJECT_NAME	ITSLM
		Root object type	ROOT_OBJECT_TYPE	SERVICE
		Root object name	ROOT_OBJECT_NAME	ITSLM
		Occurrence	OCCURRENCE	START
	Program-specific information	SLM - Manager host name	ITSLM_TARGET_HOST	Name of the SLM - Manager host
		SLM - Manager host port number	ITSLM_PORT	Port number of the SLM - Manager host

Legend:

--: Not applicable

## (2) Details of event ID 0x00006811

Attribute type		Item	Attribute name	Contents
Basic attribute		Event ID		0x00006811
		Message		KNAS02008-I The SLM - Manager service has stopped.
Extended attribute	Common information	Severity	SEVERITY	Information

5. Preparations Before Starting

JP1/Service Level Management Description

Attribute ty	pe	Item	Attribute name	Contents
Extended	Common information	User name	USER_NAME	SYSTEM
attribute		Product name	PRODUCT_NAME	"/HITACHI/JP1/SLM"
		Object type	OBJECT_TYPE	SERVICE
		Object name	OBJECT_NAME	ITSLM
		Root object type	ROOT_OBJECT_TYPE	SERVICE
		Root object name	ROOT_OBJECT_NAME	ITSLM
		Occurrence	OCCURRENCE	END
		Start time	START_TIME	Time execution started or restarted (number of seconds from UTC 1970-01-01 00:00:00)
	Program-specific information	SLM - Manager host name	ITSLM_TARGET_HOST	Name of the SLM - Manager host
		SLM - Manager host port number	ITSLM_PORT	Port number of the SLM - Manager host

--: Not applicable

## (3) Details of event ID 0x00006812

Attribute type		Item	Attribute name	Contents
Basic attribute		Event ID		0x00006812
		Message		KNAS02009-E An SLM - Manager service
				has not started due to an error.
Extended	Common information	Severity	SEVERITY	Error
attribute		User name	USER_NAME	SYSTEM
		Product name	PRODUCT_NAME	"/HITACHI/JP1/SLM"
		Object type	OBJECT_TYPE	SERVICE
		Object name	OBJECT_NAME	ITSLM
		Root object type	ROOT_OBJECT_TYPE	SERVICE
		Root object name	ROOT_OBJECT_NAME	ITSLM
		Occurrence	OCCURRENCE	• When an error occurred while starting services:NOTSTART
				• When an error occurred while stopping services:END
		Start time	START_TIME	Time execution started or restarted (number of seconds from UTC 1970-01-01 00:00:00)
	Program-specific information	SLM - Manager host name	ITSLM_TARGET_HOST	Name of the SLM - Manager host

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5. Preparations Before Starting
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Attribute type		Item	Attribute name	Contents
Extended attribute	Program-specific information	SLM - Manager host port number	ITSLM_PORT	Port number of the SLM - Manager host

--: Not applicable

## (4) Details of event ID 0x00006890

Attribute type		Item	Attribute name	Contents
Basic attribute		Event ID		0x00006890
		Message		KNAS34000-W The SLO threshold might be exceeded. Monitor item = <i>monitoring-item-name</i>
Extended	Common information	Severity	SEVERITY	Warning
attribute		User name	USER_NAME	SYSTEM
		Product name	PRODUCT_NAME	"/HITACHI/JP1/SLM"
		Object type	OBJECT_TYPE	PRODUCT
		Object name	OBJECT_NAME	TREND
		Root object type	ROOT_OBJECT_TYPE	PRODUCT
		Occurrence	OCCURRENCE	NOTICE
_	Program-specific information	Service group name	SERVICE_GROUP_NAME	Name of the service group for which a trend towards an overage of a threshold was detected
		Monitored service name	TARGET_SERVICE_NAME	Name of the monitored service for which a trend towards an overage of a threshold was detected
		Monitored target name	TARGET_NAME	<ul> <li>When a trend towards overage of a threshold was detected while monitoring All Web Access: All Web Access</li> <li>When a trend towards overage of a threshold was detected while monitoring a Web transaction: web-transaction-name</li> </ul>

Legend:

--: Not applicable

## (5) Details of event ID 0x00006891

Attribute type	Item	Attribute name	Contents
Basic attribute	Event ID		0x00006891
	Message		KNAS34001-E

<sup>5.</sup> Preparations Before Starting

Attribute type       Basic attribute		Item	Attribute name	Contents
		Message		An SLO violation was detected. Monitor item = monitoring-item-name
Extended	Common information	Severity	SEVERITY	Error
attribute		User name	USER_NAME	SYSTEM
		Product name	PRODUCT_NAME	"/HITACHI/JP1/SLM"
		Object type	OBJECT_TYPE	PRODUCT
		Object name	OBJECT_NAME	THRESHOLD
		Root object type	ROOT_OBJECT_TYPE	PRODUCT
		Occurrence	OCCURRENCE	NOTICE
	Program-specific information	Service group name	SERVICE_GROUP_NAME	Name of the service group in which an overage of a threshold was detected
		Monitored service name	TARGET_SERVICE_NAME	Name of the monitored service in which an overage of a threshold was detected
		Monitored target name	TARGET_NAME	• When an overage of a threshold was detected while monitoring All Web Access:
				All Web Access
				• When an overage of a threshold was detected while monitoring a Web transaction:
				web-transaction-name

--: Not applicable

## (6) Details of event ID 0x00006892

Attribute type		Item	Attribute name	Contents
Basic attribute		Event ID		0x00006892
		Message		KNAS34002-W A warning sign of performance error was detected. Monitor item = <i>monitoring-item-name</i>
Extended	Common information	Severity	SEVERITY	Warning
attribute		User name	USER_NAME	SYSTEM
		Product name	PRODUCT_NAME	"/HITACHI/JP1/SLM"
		Object type	OBJECT_TYPE	PRODUCT
		Object name	OBJECT_NAME	OUTLIER
		Root object type	ROOT_OBJECT_TYPE	PRODUCT
		Occurrence	OCCURRENCE	NOTICE

Attribute typ	e	Item	Attribute name	Contents
Extended attribute	Program-specific information	Service group name	SERVICE_GROUP_NAME	Name of the service group in which a warning sign was detected
		Monitored service name	TARGET_SERVICE_NAME	Name of the monitored service in which a warning sign was detected
		Monitored target name	TARGET_NAME	• When a warning sign was detected while monitoring All Web Access:
				All Web Access
				• When a warning sign was detected while monitoring a Web transaction: web-transaction-name

--: Not applicable

## (7) Details of event ID 0x00006893

Attribute type	9	ltem	Attribute name	Contents
Basic attribute		Event ID		0x00006893
		Message		KNAS34009-W An SLO threshold value might be exceeded. service group name=service-group-name, service name=service-name, host name=name-of- host-from-which-monitoring-item-is-to-be- obtained, monitored target name=name-of-agent-that-acquired- monitoring-item, monitor item name=name-of-monitoring-item, occurrence time=time-of-occurrence, details=details details displays in the following format the time at which the threshold is expected to be exceeded: YYYY/MM/DD hh:mm:ss ZZZZ YYYY/MM/DD hh:mm:ss ZZZZ YYYY/MM/DD: Year, month, date hh:mm:ss: Hour, minute, second ZZZZZ: + or - followed by the time zone, expressed as the time differential from GMT (a four digit number). An example would be +0900.
Extended	Common	Severity	SEVERITY	Warning
attribute	information	User name	USER_NAME	SYSTEM
		Product name	PRODUCT_NAME	"/HITACHI/JP1/SLM"
		Object type	OBJECT_TYPE	PRODUCT
		Object name	OBJECT_NAME	TREND
		Root object type	ROOT_OBJECT_TYPE	PRODUCT

5. Preparations Before Starting

Attribute typ	e	Item	Attribute name	Contents
Extended attribute	Common information	Occurrence	OCCURRENCE	NOTICE
Program- specific information	Service group name	SERVICE_GROUP_NAME	Name of the service group in which a trend was detected	
	Monitored service name	TARGET_SERVICE_NAME	Name of the monitored service in which a trend was detected	
	Name of the host from which the monitoring item is to be obtained	PFM_TARGET_HOST	Name of the host from which to obtain the monitoring item in which a trend was detected	
	Monitored target name	TARGET_NAME	Name of the agent that acquired the monitoring item in which a trend was detected	
		Monitoring item name	METRIC_NAME	Name of the monitoring item in which a trend was detected

--: Not applicable

## (8) Details of event ID 0x00006894

Attribute ty	ре	Item	Attribute name	Contents
Basic attribut	e	Event ID		0x00006894
		Message		<pre>KNAS34008-E An SLO violation was detected. service group name=service-group- name, service name=service-name, host name=name-of-host-from-which-monitoring- item-is-to-be-obtained, monitored target name=name-of-agent-that-acquired- monitoring-item, monitor item name=name-of-monitoring-item, occurrence time=time-of-occurrence, details=details details displays one of the following values: UPPER LIMIT: The value exceeds the upper limit. LOWER LIMIT: The value drops below the lower limit.</pre>
Extended attribute	Common information	Severity	SEVERITY	Error
utilioute	information	User name	USER_NAME	SYSTEM
		Product name	PRODUCT_NAME	"/HITACHI/JP1/SLM"
		Object type	OBJECT_TYPE	PRODUCT
		Object name	OBJECT_NAME	THRESHOLD
		Root object type	ROOT_OBJECT_TYPE	PRODUCT
		Occurrence	OCCURRENCE	NOTICE

Attribute type		Item	Attribute name	Contents
Extended Program- attribute specific information	specific	Service group name	SERVICE_GROUP_NAME	Name of the service group in which a threshold overage was detected
	Monitored service name	TARGET_SERVICE_NAME	Name of the monitored service in which a threshold overage was detected	
		Name of the host from which the monitoring item is to be obtained	PFM_TARGET_HOST	Name of the host from which to obtain the monitoring item in which an exceeded threshold was detected
		Monitored target name	TARGET_NAME	Name of the agent that acquired the monitoring item in which a threshold overage was detected
		Monitoring item name	METRIC_NAME	Name of the monitoring item in which a threshold overage was detected

--: Not applicable

## (9) Details of event ID 0x00006895

Attribute type		Item	Attribute name	Contents
Basic attribute		Event ID		0x00006895
		Message		KNAS34010-W Signs of a performance failure have been detected. Service group name = service group name, Service name = service name, Host name = obtained host name of monitoring item, Monitored target name = obtained agent name of monitoring item, Monitoring item = monitoring item name of monitoring item, Occurrence time = event occurrence time, Details = details details displays one of the following values: UPPER LIMIT: The value exceeds the upper limit from the baseline. LOWER LIMIT: The value drops below the lower limit from the baseline.
Extended attribute	Common information	Severity	SEVERITY	Warning
		User name	USER_NAME	SYSTEM
		Product name	PRODUCT_NAME	"/HITACHI/JP1/SLM"
		Object type	OBJECT_TYPE	PRODUCT
		Object name	OBJECT_NAME	OUTLIER
		Root object type	ROOT_OBJECT_TYPE	PRODUCT
		Occurrence	OCCURRENCE	NOTICE
	Program- specific information	Service group name	SERVICE_GROUP_NAME	Name of the service group in which a warning was detected
		Monitored service name	TARGET_SERVICE_NAME	Name of the monitored service in which a warning was detected

5. Preparations Before Starting

JP1/Service Level Management Description

Attribute type		Item	Attribute name	Contents
Extended attribute	Program- specific information	Name of the host from which the monitoring item is to be obtained	PFM_TARGET_HOST	Name of the host from which to obtain the monitoring item in which a warning was detected
		Monitored target name	TARGET_NAME	Name of the agent that acquired the monitoring item in which a warning was detected
		Monitoring item name	METRIC_NAME	Name of the monitoring item in which a warning was detected

--: Not applicable

<sup>5.</sup> Preparations Before Starting

## 5.6 Editing the system definition files to change settings

SLM enables you to change settings, including host names and port numbers, by editing SLM - Manager's system definition file (jplitslm.properties) and SLM - UR's system definition file (jplitslmur.properties).

This section explains how to edit the system definition files and the definitions that can be edited.

## 5.6.1 Editing the system definition files

This subsection explains how to edit SLM's system definition files (jplitslm.properties and jplitslmur.properties).

## (1) Before you start

Terminate the SLM - Manager or SLM - UR whose system definition file you will be editing.
 For details about the termination method, see 2.1.4 Terminating SLM - Manager or 2.1.3 Terminating SLM - UR.

### (2) Procedure

To edit a system definition file:

1. Edit the system definition file.

The system definition file is stored at the following location:

For SLM - Manager:

SLM-Manager-installation-folder/mgr/conf/jplitslm.properties

For SLM - UR:

SLM-UR-installation-folder\ur\conf\jplitslmur.properties

For a list of the definitions that can be edited, see 5.6.2 Editable definitions.

If you are editing properties that are common to both SLM - Manager and SLM - UR, make sure that you edit both system definition files.

2. Start the SLM - Manager or SLM - UR whose system definition file has been edited.

For details about how to start SLM - Manager or SLM - UR, see 2.1.1 Starting SLM - Manager or 2.1.2 Starting SLM - UR.

The system definition file has been edited and the SLM settings have been changed.

### (3) Supplementary information

• A system definition file definition is specified in the following format:

property=value

- Use ISO/IEC 646 character codes for system definition files; do not use Unicode characters. Do not include any Unicode escape sequences.
- Changes made to a system definition file are not applied until the next time SLM Manager or SLM UR is started (or restarted).
- If an invalid keyword that is not defined in SLM is specified in a system definition file, SLM ignores the specified keyword and continues processing.

<sup>5.</sup> Preparations Before Starting

• If an invalid value, such as an out-of-range value, is specified in a system definition file, the target SLM - Manager or SLM - UR might terminate during startup processing.

However, for properties related to output of logs (properties beginning with logger), a specified invalid value, such as an out-of-range value, will be changed to the default value and SLM - Manager or SLM - UR processing will continue.

- Paths specified in a definition file cannot exceed 100 characters. The following characters can be used:
  - A to Z, a to z, 0 to 9, space, underscore (\_), period ( . ), left and right parentheses ( ( ) ), and the path separator character (\)

Note that two consecutive path separator characters (\\) must be specified, as indicated in the following. Example specification: C:\\Program Files\\HITACHI\\JP1ITSLM\\ur\\accesslog

None of the following are permitted:

- Double-byte characters
- Characters that Windows does not allow in file or folder names  $(\backslash, /, :, *, ?, ", <, >, |)$
- NTFS stream names that contain a colon (:), except as a separator after the drive name
- Reserved device names (AUX, CON, NUL, PRN, CLOCK\$, COM1 through COM9, LPT1 through LPT9)
- Folder names that start with u
- Paths that include #
- Paths that end with  $\backslash \backslash$
- Paths on a network drive
- We recommend that you make a backup after you have edited a system definition file. For details about how to back up system definition files, see 8.1.1 Backing up the definition files.
- If you are running SLM in a cluster system and change a system definition file, make sure that you make the same changes to the system definition files in both systems to avoid inconsistent settings between the active and standby servers.

### (4) Related topics

- 2.2.1 Logging in to SLM Manager
- 5.4.1 Setting up the linkage between SLM and Performance Management (working with Performance Management)
- 5.4.2 Specifying settings for saving Performance Management's performance data from SLM (working with Performance Management)
- 5.4.3 Releasing the linkage between SLM and Performance Management (working with Performance Management)
- 8.5.1 Renaming the SLM Manager host
- 8.5.2 Renaming the SLM UR host
- 8.6.1 Changing SLM Manager's RMI communication port number
- 8.6.2 Changing SLM UR's RMI communication port number
- 8.6.3 Changing the listen port number of the SLM Manager embedded database
- 8.6.4 Changing the listen port number of the SLM Manager embedded Web server
- 8.6.5 Changing the port number of the internal communications port of the SLM Manager embedded Web server
- 8.6.6 Changing the port number of the completion-message receiving port of the SLM Manager embedded Web server

#### 5. Preparations Before Starting

# 5.6.2 Editable definitions

Editing definitions is optional in SLM.

This subsection explains the definitions that can be edited in SLM.

# (1) List of definitions that can be edited in SLM

The following table explains the definitions that can be edited when it is necessary to do so.

No.	Property	Trgt	Spec	Description	Specification range	Default	Error handling
1	accessLogF ilePath	U	Ο	Specifies the destination file path for the files in which access logs are recorded.	Absolute path of the folder, including the drive letter <sup>#1</sup>	None	Т
2	announceMaste rRetryCount	М	0	Specifies the number of retries when, in the master/ slave configuration, a communication error occurs when a start or stop is reported from the master instance of SLM - Manager to a slave instance of SLM - Manager.	Integer from 1 to 20 (units: attempts)	3	Т
3	announceMaste rRetryInterval	М	Ο	Specifies the retry interval when, in the master/slave configuration, a communication error occurs when a start or stop is reported from the master instance of SLM - Manager to a slave instance of SLM - Manager.	Integer from 1 to 1000 (units: seconds)	10	Т
4	announceMaste rRetryMessage	М	Ο	Specifies whether to output, to the log, messages regarding retries (KNAS03507-W) when, in the master/slave configuration, a communication error occurs when a start or stop is reported from the master instance of SLM - Manager to a slave instance of SLM - Manager.	true (output), or false (do not output)	false	Т
5	announceRe tryCount	U	Ο	Specifies the number of retries when a communication error occurs when start or termination is reported from SLM - UR to SLM - Manager.	Integer from 1 to 20 (count)	3	Т

Table 5-8: List of definitions that can be edited in SLM

No.	Property	Trgt	Spec	Description	Specification range	Default	Error handling
6	announceRe tryInterva l	U	0	Specifies the retry interval when a communication error occurs when start or termination is reported from SLM - UR to SLM - Manager.	Integer from 1 to 1000 (seconds)	10	Т
7	announceRe tryMessage	U	0	Specifies whether the retry message (KNAS03016-W) is to be output to message logs when a communication error occurs when start or termination is reported from SLM - UR to SLM - Manager.	true (output) or false (do not output) <sup>#2</sup>	false	Т
8	announceSlave RetryCount	М	0	Specifies the number of retries when, in the master/ slave configuration, a communication error occurs when a start or stop is reported from a slave instance of SLM - Manager to a master instance of SLM - Manager.	Integer from 1 to 20 (units: attempts)	3	Т
9	announceSlave RetryInterval	М	0	Specifies the retry interval when, in the master/slave configuration, a communication error occurs when a start or stop is reported from a slave instance of SLM - Manager to a master instance of SLM - Manager.	Integer from 1 to 1000 (units: seconds)	10	Т
10	announceSlave RetryMessage	М	0	Specifies whether to output, to the log, messages regarding retries (KNAS03507-W) when, in the master/slave configuration, a communication error occurs when a start or stop is reported from a slave instance of SLM - Manager to a master instance of SLM - Manager.	true (output), or false (do not output)	r false (do false	
11	communication MSRetryCount	М	0	Specifies the number of retries when, in the master/ slave configuration, a communication error occurs between a master instance of SLM - Manager and a slave instance of SLM - Manager.	Integer from 1 to 20 (units: attempts)	3	Т
12	communication MSRetryInterv al	М	0	Specifies the retry interval when, in the master/slave configuration, a communication error occurs between the master instance of SLM - Manager and a slave instance of SLM - Manager.	Integer from 1 to 1000 (units: seconds)	10	Т

No.	Property	Trgt	Spec	Description	Specification range	Default	Error handling
13	communication MSRetryMessa ge	М	0	Specifies whether to output, to the log, messages regarding retries (KNAS03507-W) when, in the master/slave configuration, a communication error occurs between the master instance of SLM - Manager and a slave instance of SLM - Manager.	true (output), or false (do not output)	false	Т
14	communicat ionRetryCo unt	M, U	0	Specifies the number of retries when a communication error occurs between SLM - UR and SLM - Manager.	Integer from 1 to 20 (count)	3	Т
15	communicat ionRetryIn terval	M, U	Ο	Specifies the retry interval when a communication error occurs between SLM - UR and SLM - Manager.	Integer from 1 to 1000 (seconds)	10	Т
16	communicat ionRetryMe ssage	M, U	0	Specifies whether the retry message (KNAS03016-W) is to be output to message logs when a communication error occurs between SLM - UR and SLM - Manager.	true (output) or false (do not output) <sup>#2</sup>	false	Т
17	dashboardC hartPlotIn terval	М	0	Specifies in minutes the maximum interval between dots for drawing a straight line on a performance chart for system performance.	Specifies in minutes the maximum interval between dots for drawing a straight line on a performance chartInteger from 1 to 1440		Т
18	dashboardE ventListRe centViewSi ze	M	0	Specifies the maximum number of events that can be displayed at the same time when events of multiple services are listed in an SLM window. The specified number of the most recent events are displayed.	Integer from 1 to 8192	1000	Т
19	dashboardP rioritizeS ystem	М	0	<ul> <li>Changes the default display for the following windows according to the monitoring configuration:</li> <li>10.5.4 Add template window</li> <li>10.6 Settings window and windows displayed from the Settings window 10.6.4 Add/Delete monitor area</li> </ul>	true (default display for a system monitoring configuration) or false (default display for a service monitoring configuration)	false	Т
20	dashboardP ropagateSy stemStatus	М	0	Specifies whether the status of system performance monitoring is propagated to the status of the service. For details on the propagation of	true (propagate) or false (do not propagate)	false	Т

No.	Property	Trgt	Spec	Description	Specification range	Default	Error handling
20	dashboardP ropagateSy stemStatus	М	0	the status of system performance monitoring in the <b>Real-time Monitor</b> window, see 10.3.4 System performance information area. For details on the propagation of the status of system performance monitoring in the <b>Troubleshoot</b> window, see 10.4.4 Event and Performance chart tabs area (Performance chart tab selected).	true (propagate) or false (do not propagate)	false	Т
21	jbsHostNam e	М	0	Specifies the local host name of JP1/Base. Specification of this property is required when JP1/Base is run with a cluster configuration.	Character string with a length of 1 to 196 bytes (permitted characters include alphanumeric characters and hyphen $(-)$ )	None	Т
22	JP1Event	М	0	Specifies whether issuance of JP1 events is to be enabled. Specification of this property is required when SLM is linked with JP1/IM. For details about linking with JP1/IM, see 5.5.1 Linking with JP1/IM.	be enabled. (do not issue) <sup>#2</sup> this property n SLM is TM. t linking with		D
23	JP1EventFo rSystem	М	0	Specifies whether JP1 events for system performance are to be issued when the JP1Event property is set to true and SLM is linked to Performance Management.	true (issue JP1 events) or false (do not issue JP1 events)	false	Т
24	loggerAuditEna ble	М	0	Specifies whether to obtain the audit log.	true (obtain), or false (do not obtain)	false	Т
25	loggerAuditFile Count	М	Ο	Specifies the maximum number of files for the audit log file.	Integer from 1 to 16	4	Т
26	loggerAuditMa xFileSize	М	0	Specifies the maximum size of the audit log file.	Integer from 8192 to 4194304 (units: bytes)	1048576 (1MB)	Т
27	loggerComm andMessage FileCount	М	0	Specifies the maximum number of message log files for commands.	number of message log files		D
28	loggerComm andMessage MaxFileSiz e	М	0	Specifies the maximum size of a message log file for commands.	Integer from 4096 to 16777216         104 (1 M (bytes)		D
29	loggerDaoM essageFile Count	М	0	Specifies the maximum number of message log files that are used by the SLM	Integer from 2 to 16	3	D

No.	Property	Trgt	Spec	Description	Specification range	Default	Error handling
29	loggerDaoM essageFile Count	М	0	function to access the database.	Integer from 2 to 16	3	D
30	loggerDaoM essageMaxF ileSize	М	0	Specifies the maximum size of a message log file that is used by the SLM function to access the database.	Integer from 4096 to 2147483647 (bytes)	1048576 (1 MB)	D
31	loggerInpu tAdaptorCt rlMessageF ileCount	М	0	Specifies the maximum number of message log files that are used by the SLM function to receive performance data from external programs.	Integer from 2 to 16	3	D
32	loggerInpu tAdaptorCt rlMessageM axFileSize	М	0	Specifies the maximum size of a message log file that is used by the SLM function to receive performance data from external programs.Integer from 4096 to 2147483647 (bytes)1048576 (1 MB)Specifies the lag actual logical0.10,00, m 2010		D	
33	loggerInte grationLog Level	M, U	0	Specifies the log output level for integrated trace logs.0, 10, 20, or 30A small value decreases the amount of output information, and a large value increases the amount of output information increases.0, 10, 20, or 30		10	D
34	loggerMess ageLogLeve l	M, U	0	Specifies the log output level for message log files. A small value decreases the amount of output information, and a large value increases the amount of output information increases.	Specifies the log output level for message log files.0, 10, 20, or 30A small value decreases the amount of output information, and a large value increases the amount of0, 10, 20, or 30		D
35	loggerPerf CollectorM essageFile Count	М	0	Specifies the maximum number of message log files for the performance analysis manager.	Integer from 2 to 16	3	D
36	loggerPerf CollectorM essageMaxF ileSize	М	0	Specifies the maximum size of a message log file for the performance analysis manager.	of a message log file for the performance analysis2147483647(1 M(1 M		D
37	loggerProc essCtrlMes sageFileCo unt	M, U	0	Specifies the maximum number of message log files for process control.	number of message log files		D
38	loggerProc essCtrlMes sageMaxFil eSize	M, U	0	1 8		1048576 (1 MB)	D
39	loggerRmiS erverMessa geFileCoun t	M, U	0	Specifies the maximum number of message log files for the RMI server.	Integer from 2 to 16	3	D

No.	Property	Trgt	Spec	Description	Specification range	Default	Error handling
40	loggerRmiS erverMessa geMaxFileS ize	M, U	Ο	Specifies the maximum size of a message log file for the RMI server.	Integer from 4096 to 2147483647 (bytes)	1048576 (1 MB)	D
41	loggerSlaveCon trolMessageFile Count	М	0	Specifies the maximum number of message log files for controlling slave instances of SLM - Manager.	Integer from 2 to 16	3	D
42	loggerSlaveCon trolMessageMa xFileSize	М	0	Specifies the maximum size of message log files for controlling slave instances of SLM - Manager.	Integer from 4096 to 2147483647 (units: bytes)	1048576 (1MB)	D
43	loggerUser ResponseMe ssageFileC ount	M, U	0	Specifies the maximum number of message log files for UR control.     Integer from 2 to 16     3		D	
44	loggerUser ResponseMe ssageMaxFi leSize	M, U	0	Specifies the maximum size of a message log file for UR control.	of a message log file for UR 2147483647 (1		D
45	loggerView MessageFil eCount	М	0	Specifies the maximum number of message log files for a servlet.	number of message log files		D
46	loggerView MessageMax FileSize	М	0	Specifies and manifold and suger from 1050 to		1048576 (1 MB)	D
47	loggerWebS ystemAnaly sisMessage FileCount	U	0	Specifies the maximum number of message log files for the Web system analysis process and service detection process.	number of message log files for the Web system analysis process and service detection		D
48	loggerWebS ystemAnaly sisMessage MaxFileSiz e	U	0	Specifies the maximum size of a message log file for the Web system analysis process and service detection process.	of a message log file for the Web system analysis process and service detection2147483647 (bytes)(1		Т
49	loginFaile dLimit	М	0	Specifies the number of retries allowed in SLM's login window. Once the specified number of retries have been used, the window is locked. If 0 is specified, the window will not be locked.	Integer from 0 to 30	3	Т
50	managerHos t	M, U	R	Specifies the host name of SLM - Manager. If SLM is linked with Performance Management, an IP address cannot be specified (you must specify the host name).	ASCII codes $0 \times 20$ to $0 \times 7e$ (excluding control characters) and a length of 1 to 256 bytes (permitted number of bytes depends on Windows). Characters that are not permitted in host names in	None	Т

No.	Property	Trgt	Spec	Description	Specification range	Default	Error handling
50	managerHos t	M, U	R	Specifies the host name of SLM - Manager. If SLM is linked with Performance Management, an IP address cannot be specified (you must specify the host name).	Windows cannot be specified. None of the following addresses can be specified: • 0.0.0.0 • 127.0.0.1 • 255.255.255.25 5	None	Τ
51	masterHost	Μ	R <sup>#3</sup>	Specifies the host name of the master instance of SLM - Manager.	ASCII codes from 0x20 through 0x7e (other than control characters), with a length of from 1 to 256 bytes can be specified. (Note that the specifiable length in bytes depends on the version of Windows being used.) Characters that are not permitted in host names in Windows cannot be specified. None of the following addresses can be specified: • 0.0.0.0 • 127.0.0.1 • 255.255.255.255	None	Т
52	managerSta rtMode	М	0	Specifies the start mode for restarting the Windows service in SLM - Manager.	normal (starting the Windows service with monitoring stopped) or restart (starting the Windows service with restart of the monitoring that was running before the Windows service stopped) <sup>#2</sup>	normal	Τ
53	monitoring ItemNameMa xLength	М	0	Specifies the length of a monitoring item name. Specify the number of bytes obtained after UTF-8 conversion.	Integer from 1 to 1024 (bytes)	300	Т
54	outlierRat e	М	O	Specifies the percentage of performance data in the monitoring range that has to result in an out-of-range value before an event is reported during predictive error detection.	Integer from 1 to 100 (%)	10	Т
55	pfmDataAnalys isThread	М	Ο	Specifies the number of reception analysis threads for performance data received from PFM - Base. Valid only for the master instance of	Integer from 10 to 200	20	D

No.	Property	Trgt	Spec	Description	Specification range	Default	Error handling
55	pfmDataAnalys isThread	М	0	SLM - Manager in the master/slave configuration.	Integer from 10 to 200	20	D
56	pfmDataReciev eErrorTruncatio n	Μ	0	Specifies whether or not to implement contraction of the log output when, in the master/slave configuration, processing of the allocation of performance data received from PFM - Base cannot be implemented by the master instance of SLM - Manager with respect to a slave instance of SLM - Manager because of a communication error. Contraction of the log is implemented per instance of SLM - Manager, and is halted upon recovery from the communication error.	true (contract), or false (do not contract)	true	Τ
57	pfmLogging Data	М	0	Specifies whether Performance Management's monitoring agents are to store performance data in the Store database.	true (store in the Store database) or false (do not store in the Store database) <sup>#2</sup>	false	Т
58	pfmManager Host	M	0	Specifies the host name of the PFM - Manager that is to be linked with SLM. If the specified host name is invalid, communication with Performance Management will fail.	ASCII codes $0 \times 20$ to $0 \times 7 \in$ (excluding control characters) with a length of 1 to 256 bytes (permitted number of bytes depends on Windows). Characters that are not permitted in host names in Windows cannot be specified. None of the following addresses can be specified: • 0.0.0.0 • 127.0.0.1 • 255.255.255.25 5	None	T
59	pfmManager Port	Μ	0	Specifies the port number of PFM - Manager that is to be linked with SLM. If the specified port number is invalid, communication with Performance Management will fail.	1024 to 65535	22286	Τ
60	pfmReceive Port	М	0	Specifies the port number used by SLM - Manager to receive performance data sent from Performance Management.	1024 to 65535	20905	Т

No.	Property	Trgt	Spec	Description	Specification range	Default	Error handling
61	pfmWebCons oleURL	М	0	Specifies the URL of the target PFM - Web Console. Specify the URL without the URL encoding (percent encoding). The following shows an example: http://host:port/ PFMWebConsole/ login.do host: Host name or IP address port: Port number The value specified for URL must be in RFC 2396- compliant format.	Character string with a length of 0 to 1024 (characters)	None	T
62	rdbPort	М	Ο	Specifies the listen port number of the embedded database.	5001 to 65535	20903	Т
63	rmiManager Port	M, U	0	Specifies the RMI communication port number of SLM - Manager.	5001 to 65535	20904	Т
64	rmiMasterPort	М	0	Specifies the the port number used by the slave instance of SLM - Manager for RMI communication with the master instance of SLM - Manager.	5001 to 65535	20904	Т
65	rmiUrPort	U	0	Specifies the RMI communication port number of SLM - UR.	5001 to 65535	20910	Т
66	serviceBas elineExclu sion	М	0	Specifies whether out-of- range value detection events that are opposite to the threshold direction are to be excluded during predictive error detection for service performance.	true (exclude) or false (do not exclude)	false	Т
67	sloThresho ldRate	М	0	Specifies the percentage of performance data in the monitoring range that has to result in an overage of a threshold before an event is reported by threshold value monitoring.	Integer from 1 to 100 (%)	10	Т
68	systemBase lineExclus ion	М	0	Specifies whether out-of- range value detection events that are opposite to the threshold direction are to be excluded for the threshold type that is received from Performance Management during predictive error detection for system performance.	true (exclude) or false (do not exclude)	false	T

No.	Property	Trgt	Spec	Description	Specification range	Default	Error handling
68	systemBase lineExclus ion	М	0	For example, if the threshold type received from Performance Management is the upper limit, this property specifies whether lower-limit events are to be excluded in out-of-range value detection.	true (exclude) or false (do not exclude)	false	Т
69	urHost	U	R	Specifies the host name of SLM - UR.	ASCII codes $0 \times 20$ to $0 \times 7e$ (excluding control characters) and a length of 1 to 256 bytes (permitted number of bytes depends on Windows). Characters that are not permitted in host names in Windows cannot be specified. None of the following addresses can be specified: • 0.0.0.0 • 127.0.0.1 • 255.255.255.25 5	None	Т
70	urNetworkAda pterAddress	U	R	Specifies the network adaptor address that the instance of SLMSLM - UR will connect to. When the configuration of the network interface of the host on which SLM - UR is installed has been changed, be sure to review the specified value by using the jslmurnals command. For details about the jslmurnals command, see 9.18 jslmurnals(displays the network adapter address and IP address) in 9. Commands.	An integer of 12 or less digits of single-byte hexadecimal alphanumeric characters. However, an error will occur when a network interface number that does not exist with the result of the jslmurnals command is specified.	None	T
71	urNetworkI nterfaceNu mber	U	R	Specifies the network interface number assigned by the capture module. If you have changed the network interface configuration on the host on which SLM - UR is installed, make sure that you use the jslmuripls command to check and, if necessary, revise the specified value. For details about the jslmuripls command, see 9.17 jslmuripls (displays network interface number	Integer from 1 to 60. An error results if the specified network interface number does not exist in the jslmuripls command execution results.	None	T

No.	Property	Trgt	Spec	Description	Specification range	Default	Error handling
71	urNetworkI nterfaceNu mber	U	R	and IP address) in 9. Commands.	Integer from 1 to 60. An error results if the specified network interface number does not exist in the jslmuripls command execution results.	None	Т

Legend:

Trgt: Target Spec: Specification M: SLM - Manager U: SLM - UR R: Specification is required O: Specification is optional D: If there is an error in the

D: If there is an error in the setting, SLM - Manager or SLM - UR assumes the default value upon startup.

T: If there is an error in the setting, SLM - Manager or SLM - UR terminates.

#### #1

If you want to run SLM - UR in a cluster configuration, make sure the path points to a shared disk so the access log will be switched over when node switching occurs.

#### #2

The value is not case sensitive.

#### #3

In the master/slave configuration, this property must be specified for a slave instance of SLM - Manager to identify the master instance of SLM - Manager. This property does not need to be specified for an instance of SLM - Manager in the single-manager configuration or for the master instance of SLM - Manager in the master/slave configuration.

# (2) Supplementary information

• The system definition files to be edited (jplitslm.properties or jplitslmur.properties) are stored at the following locations:

For SLM - Manager:

SLM-Manager-installation-folder\mgr\conf\jplitslm.properties

For SLM - UR:

*SLM-UR-installation-folder*\ur\conf\jplitslmur.properties

• The following shows example definitions in the system definition files:

#### For SLM - Manager:

```
managerHost=192.168.2.109
rmiManagerPort=20904
```

#### For SLM - UR:

```
managerHost=192.168.2.109
rmiManagerPort=20904
urHost=192.168.2.109
```

```
5. Preparations Before Starting
```

• For details about the port numbers used by SLM, see A. List of Port Numbers Used by SLM.

<sup>5.</sup> Preparations Before Starting

### 5.7.1 Browser language settings

By configuring the browser language settings in SLM, you can change the language displayed in the browser.

# 5.7.2 Host language settings

By configuring the language and service settings of a host on which SLM is installed, you can change the language of the log data output by SLM and by the installer.

# (1) Language settings

The following three settings need to be configured:

- User locale
- System locale
- Locale ID of MUI (Multilingual User Interface)<sup>#</sup>

The above three settings must be set to the same language. If the set language is not the same, SLM will output a mix of Japanese and English, and garbled text might be displayed.

#

This setting is necessary only if you are using MUI.

# (2) Service settings

For each SLM service, you must change the service logon account from the local system account to the user account of the currently logged-in user.

<sup>5.</sup> Preparations Before Starting



# **Preparations Before Starting (Cluster System)**

This chapter explains the preparations before starting SLM in a cluster system, including installation, setup, and user settings. This chapter also explains optional preparations, such as linking with JP1/ IM to report monitoring results by a means such as email, linking with Performance Management to monitor hosts and middleware providing services, and how to migrate to a cluster system. The cluster systems considered in this chapter are *node switching systems* whose purpose is to achieve high availability (HA), not cluster systems whose purpose is load distribution.

#### 6.1 Overview of cluster systems

SLM - Manager and SLM - UR can be run in cluster systems intended for achieving high availability.

A cluster system consists of multiple server systems that are linked together to run as a single system. The purpose of such a system is to ensure seamless operation in the event of a server failure by continuing business operations on another server.

By running SLM - Manager in a cluster system, you can continue monitoring the status of services, even when a failure occurs in SLM - Manager. If the service performance obtained as monitoring results is managed by using a shared disk, the service performance from before a failure can be inherited.

Running SLM - UR in a cluster system makes it possible to continue collecting HTTP packets when a failure occurs in SLM - UR.

The overview and components of a cluster system for SLM - Manager and SLM - UR are the same as for a cluster system supported by JP1/Base. For details, see the *JP1/Base User's Guide* as necessary

## 6.1.1 Prerequisites for cluster system operations

SLM can operate in a logical host environment in a cluster system that supports failover. The prerequisites for running SLM in a logical host environment are that the allocation, deletion, and operation monitoring of the shared disk and logical IP addresses must be managed routinely by the cluster software.

SLM supports Windows Server Failover Cluster as the cluster software.

#### Important

Depending on the system configuration and environment setup, a cluster software program that is supported by SLM might not satisfy the prerequisites described here. Evaluate the system configuration and environment setup to make sure that all the prerequisites are satisfied.

# (1) Prerequisites for the logical host environment

To run SLM in a logical host environment, the following prerequisites for the shared disk and logical IP addresses must be satisfied.

Table 6-1:	Prereau	isites for t	the logical	host environr	nent
	1 101040		and logiour		

Logical host component	Prerequisites
Shared disk	<ul> <li>A shared disk that can inherit data from the active server to the standby server is available.</li> <li>The shared disk is allocated before SLM is started.</li> <li>Allocation of the shared disk is not released while SLM is running.</li> <li>Allocation of the shared disk is released after SLM has stopped.</li> <li>The shared disk is controlled in such a manner that it will not be accessed improperly from multiple nodes.</li> </ul>
	<ul> <li>Files are protected by means such as a file system with a journal function so that files are not deleted by events such as system shutdown.</li> <li>File contents are guaranteed and inherited in the event of a failover.</li> <li>Forced failover is supported, even while a process is using the shared disk.</li> </ul>

Logical host component	Prerequisites
Shared disk	• If a shared disk failure is detected, a program such as cluster software will manage the recovery processing, and there will be no need for SLM to be aware of the recovery processing. If SLM needs to be started or stopped as an extension of recovery processing, the cluster software must issue the stop and start requests to SLM.
Logical IP addresses	• Inheritable logical IP addresses can be used for communication.
	• A unique logical IP address can be obtained from any logical host name.
	• The logical IP addresses have been allocated before SLM is started.
	• The logical IP addresses will not be deleted while SLM is running.
	• While SLM is running, the correspondence between logical host names and logical IP addresses will not be changed.
	• The logical IP addresses will be deleted after SLM has stopped.
	• If a network failure is detected, a program such as cluster software will manage the recovery processing, and there will be no need for SLM to be aware of the recovery processing. If SLM needs to be started or stopped as an extension of recovery processing, the cluster software must issues the stop and start requests to SLM.

# (2) Prerequisites for the physical host environment

In a cluster system that runs SLM on a logical host, each server's physical host environment must satisfy the prerequisites described below.

Table 6-2.	Prerequisites	for the nh	vsical host	environment
	1 I EI E Y UISILES	ioi uie pii	ysical nost	environment

Physical host component	Prerequisites
Server	<ul> <li>The cluster consists of two server systems.</li> <li>Sufficient CPU performance is available for the processing that will be performed (for example, if multiple logical hosts are started, there is adequate CPU performance).</li> <li>Sufficient real memory capacity is available for the processing that will be performed (for example, if multiple logical hosts are started, there is adequate real memory capacity).</li> </ul>
Disk	• Files are protected by a means such as a file system with a journal function so that files are not deleted during events such as system shutdown.
Network	<ul> <li>Communications can be performed using IP addresses corresponding to the physical host names (results of the hostname command) (a program such as the cluster software is not able to change settings that will disable communications).</li> <li>While SLM is running, the correspondence between host names and IP addresses will not be changed (by programs such as the cluster software or the name server).</li> <li>A LAN board supporting host names is given the top priority by the network bind settings (no other LAN board, such as one for heartbeat, is given the top priority).</li> </ul>
OS and cluster software	<ul> <li>The cluster software and its version are supported by SLM.</li> <li>The patches and service packs required by SLM and the cluster software have already been applied.</li> <li>Each server's environment is set up appropriately so that the same processing can continue in the event of a failover.</li> </ul>

# (3) Scope of SLM support

When SLM is run on a logical host in a cluster system, SLM controls only itself. The logical host environment (including shared disk allocation and inheritance of logical IP addresses) is managed by the cluster software.

If the prerequisites for the logical host environment and the physical host environment are not satisfied or there is any problem in controlling the logical host environment, SLM will not respond to problems that arise from SLM operations. For troubleshooting, see the documentation for the cluster software and the OS that control the logical host environment.

<sup>6.</sup> Preparations Before Starting (Cluster System)

# 6.1.2 SLM system configuration in a cluster system

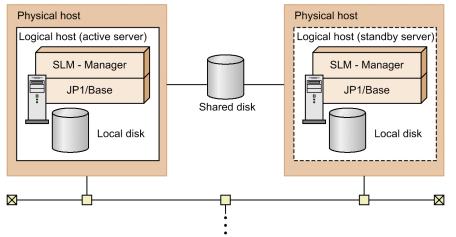
To run SLM in a cluster system, the system configuration must satisfy the following conditions:

- The logical hosts require a shared disk and logical IP addresses that can be inherited from the active server to the standby server. The shared disk and logical IP addresses must satisfy the conditions described in 6.1.1 Prerequisites for cluster system operations.
- The same OS must be used throughout the cluster system. Failover between different OSs is not supported.
- The cluster system must have an active-standby configuration.

This following subsections explain the system configuration for running SLM - Manager and SLM - UR in a cluster system.

# (1) System configuration for SLM - Manager

This subsection explains a system configuration example for SLM - Manager in a cluster system. For details about the system configuration for JP1/Base in a cluster system, see the *SLM/Base User's Guide*. If you run JP1/Base with a cluster configuration, you must specify the logical host name of JP1/Base in the jbsHostName property in SLM - Manager's system definition file (jplitslm.properties).





SLM - Manager places the information that is to be inherited from the active server to the standby server in the event of a failover in shared folders on the shared disk. The files to be placed in the shared folders are created when an environment is set up for SLM - Manager on the logical host. If there are no shared folders when an environment is set up for SLM - Manager on the logical host. If there are no shared folders when an environment is set up for SLM - Manager on the logical host.

A file system area for the database is placed on the shared disk. The name that is used for the folders is shown below.

Folder name for the database file system area:

*shared-folder*<sup>#</sup>\JP1SLM\database

#

A different shared folder must be specified at setup for each logical host.

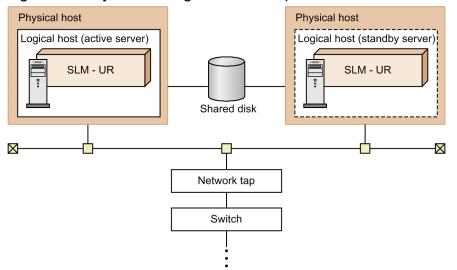
Only the SLM system information and performance data for monitored services are stored in the database file system area on the shared disk. The other file system areas used by SLM are created on local disks of the individual logical hosts.

<sup>6.</sup> Preparations Before Starting (Cluster System)

# (2) System configuration for SLM - UR

The following figure shows an example of a system configuration for SLM - UR in a cluster system.

Figure 6-2: System configuration example for SLM - UR in a cluster system



Note that SLM - UR uses the shared disk so that any access logs will be switched over to the standby server in the event of a failover. To determine whether a shared disk is required in the system configuration, check the cluster software specifications, as well as the destination path where the files than make up the access logs are to be recorded.

When SLM - UR is run in a cluster system, a *network tap* that copies HTTP packets passing through the switch's mirror ports is required between SLM - UR and the switch. The network tap copies the HTTP packets that pass the switch and sends them to the individual SLM - URs that make up the cluster system.

# 6.1.3 Failover timing

Failover occurs at the following times:

- When SLM detects a failure that results in failover
- When the cluster software detects a failure that results in failover

The table below describes the failures that are detected by SLM as resulting in failover. When SLM detects such a failure, it terminates the Windows services and notifies the cluster software of the failure.

Table 6-3: Failures detected by SLM as resulting in failover

No.	Status	Failure	Description
1	All statuses	Abnormal process termination	An SLM process terminated abnormally.
2		Memory shortage	A memory shortage occurred in SLM. This results in the same status as 1 above because the corresponding process terminates abnormally.
3	Monitoring of services is underway	Communication error	A communication error occurred while SLM was monitoring services and all retry attempts failed. This results in the same status as 1 above because the source process terminates abnormally.

<sup>6.</sup> Preparations Before Starting (Cluster System)

No.	Status	Failure	Description
4	Monitoring of services is underway	Database access error <sup>#</sup>	A database access error occurred while SLM was monitoring services and all retry attempts failed. This results in the same status as 1 above because the source process terminates abnormally.

#

Not applicable to SLM - UR.

The failures detected by the cluster software depend on cluster software specifications. For details, see the cluster software documentation.

### 6.1.4 Status after failover

This subsection explains the monitoring status after failover that occurred when SLM was monitoring or detecting monitored services.

### (1) Status of monitoring of monitored services before and after failover

If failover occurs while SLM is monitoring monitored services, the monitoring continues.

The following table shows the status of monitoring of monitored services before and after failover.

No.	No. Monitoring status before failover	Monitoring status after failover	
		Failover that occurs on SLM - Manager	Failover that occurs on SLM - UR
1	Start	Start	Start
2	Stop	Stop	Stop
3	Starting		Stop <sup>#1</sup>
4	Stopping	Start	Start <sup>#2</sup>

Table 6-4: Status of monitoring of monitored services before and after failover

#1

If failover of SLM - UR is completed before a monitoring start instruction is sent from SLM - Manager to SLM - UR since the user initiated monitoring start processing, the monitoring start processing continues.

#2

If failover of SLM - UR is completed before a monitoring stop instruction is sent from SLM - Manager to SLM - UR since the user initiated monitoring stop processing, the monitoring stop processing continues.

If failover occurs on SLM - Manager, the following information is inherited to the target environment after failover:

• Service performance displayed in the Home window or Real-time Monitor window is not restored in the target environment after failover; this includes the icons indicating the status of services, response times being monitored, throughput, and error rate values. If SLM is linked with Performance Management, the system performance is also not restored in the target environment after failover; this includes the icons indicating the status of monitoring items, measurement values of monitoring items, and availability monitoring status. The purpose of this is minimize the amount of time required for failover processing because it takes time to load service performance into memory.

<sup>6.</sup> Preparations Before Starting (Cluster System)

SLM cannot monitor services while failover processing is underway. If failover occurs on SLM - Manager or SLM
 UR while services are being monitored, service performance is not collected while the failover processing is underway, and service performance for that period will be missing.

# (2) Status of detecting monitored services before and after failover

If failover occurs while SLM is detecting monitored services, the detection status depends on whether failover occurred on SLM - Manager or SLM - UR and the number of SLM - URs in the system that are detecting monitored services.

The following table shows the status of detecting monitored services before and after failover.

Table 6-5: Status of detecting monitored services before and after failover

No.	Detection status before	Detection status after failover	
	failover	Failover that occurs on SLM - Manager	Failover that occurs on SLM - UR
1	Detecting	Stopped	<b>Detecting</b> or <b>Stopped</b> <sup>#</sup>
2	Stopped		Stopped

#

When failover occurs on SLM - UR while it is detecting monitored services, the detection processing is not restarted on the SLM - UR resulting in failover. If one or more SLM - URs are detecting monitored services in the system configuration in addition to the one resulting in failover, the status is **Detecting**.

If there are no more SLM - URs detecting monitored services other than the one resulting in failover, the status is **Stopped**.

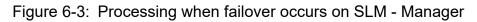
If failover occurs simultaneously on both SLM - Manager and SLM - UR, the status after failover of detecting monitored services is **Stopped**.

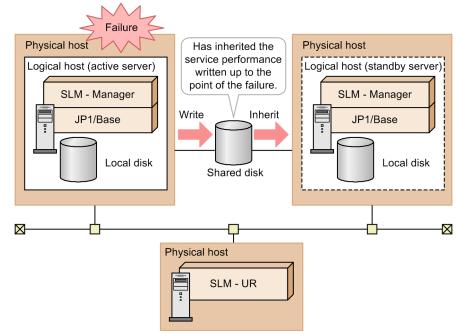
### 6.1.5 Processing performed when failover occurs on SLM - Manager

When failover occurs on SLM - Manager, the service performance information that has been written onto the shared disk by SLM - Manager on the active server up to that point is inherited by SLM - Manager on the standby server. The standby server resumes business operations on the basis of the inherited information. However, monitored-service detection processing is not resumed.

The following figure shows the processing that is performed when failover occurs on SLM - Manager.

<sup>6.</sup> Preparations Before Starting (Cluster System)





When failover occurs, the service performance is inherited, but the icons indicating error and warning statuses displayed on the window are not inherited. When the service is restarted after failover processing, the service performance is reanalyzed and the appropriate icons are displayed based on the analysis results.

The following subsections explain the failover processing flows depending on the timing of the failover.

# (1) While neither monitoring nor detection of monitored services is being performed

When failover occurs on SLM - Manager while neither monitoring nor detection of monitored services is being performed, only the connection to SLM - UR is restored after SLM - Manager is started on the standby server. Neither monitoring nor detection processing is started.

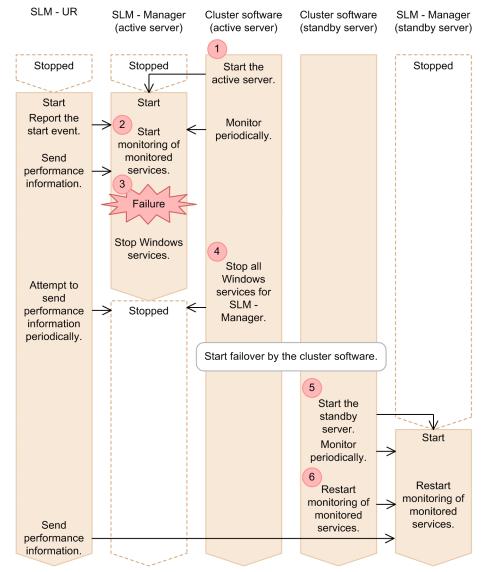
# (2) While monitored services are being monitored

When failover occurs on SLM - Manager while monitored services are being monitored, the monitoring status is restored to what it was immediately before the failure, on the basis of the service performance information in the database on the shared disk after SLM - Manager has started on the standby server.

The following figure shows the processing flow when failover occurs on SLM - Manager while monitored services are being monitored.

<sup>6.</sup> Preparations Before Starting (Cluster System)

# Figure 6-4: Processing flow when failover occurs on SLM - Manager while monitored services are being monitored



The following explains the processing flow shown in the figure, where the numbers correspond to the numbers in the figure:

1. The cluster software (active server) starts SLM - Manager (active server). The cluster software (active server) also starts periodic monitoring of server status.

Note that you must start SLM - UR manually. For details about how to start SLM - UR manually, see 2.1.2 Starting SLM - UR.

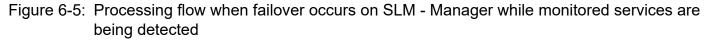
- 2. SLM Manager (active server) starts monitoring the monitored services.
- 3. Because a failure has occurred on SLM Manager (active server), the Windows services stop.
- 4. All Windows services for SLM Manager that have been registered into SLM Manager (active server) are stopped by the cluster software (active server), after which failover processing starts.
- 5. The cluster software (standby server) starts SLM Manager (standby server). The cluster software (standby server) also starts periodic monitoring of server status.
- 6. The cluster software (standby server) restarts monitoring of the monitored services by SLM Manager (standby server). The service performance collected by SLM UR is sent to SLM Manager (standby server).

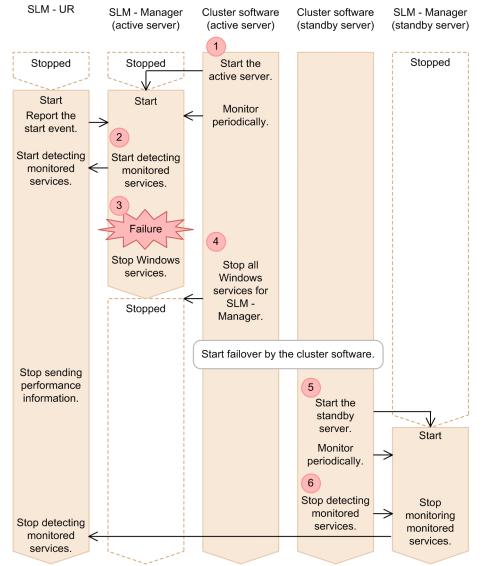
<sup>6.</sup> Preparations Before Starting (Cluster System)

# (3) While detection of monitored services is being performed

When failover occurs on SLM - Manager while detection of monitored services is being performed, the detection processing is canceled.

The following figure shows the processing flow when failover occurs on SLM - Manager while monitored services are being detected.





The following explains the processing flow shown in the figure, where the numbers correspond to the numbers in the figure:

1. The cluster software (active server) starts SLM - Manager (active server). The cluster software (active server) also starts periodic monitoring of server status.

Note that you must start SLM - UR manually. For details about how to start SLM - UR manually, see 2.1.2 Starting SLM - UR.

- 2. SLM Manager (active server) starts detecting monitored services.
- 3. Because a failure has occurred on SLM Manager (active server), the Windows services stop.

<sup>6.</sup> Preparations Before Starting (Cluster System)

- 4. All Windows services for SLM Manager that have been registered into SLM Manager (active server) are stopped by the cluster software (active server), after which failover processing starts.
- 5. The cluster software (standby server) starts SLM Manager (standby server). The cluster software (standby server) also starts periodic monitoring of server status.
- 6. The cluster software (standby server) stops detection of monitored services by SLM Manager (standby server). It also sends a notification to SLM UR indicating that detection of monitored services is stopped.

#### 6.1.6 Processing performed when failover occurs on SLM - UR

When failover occurs on SLM - UR, SLM - UR on the active server is terminated and SLM - UR on the standby server is started. Note that the shared disk does not contain any SLM - UR information that is to be inherited to the standby server.

After SLM - UR starts on the standby server, SLM - UR is connected to SLM - Manager. After that, SLM - UR starts its processing according to the business operations underway in SLM - Manager.

The following figure shows the processing that is performed when failover occurs on SLM - UR.

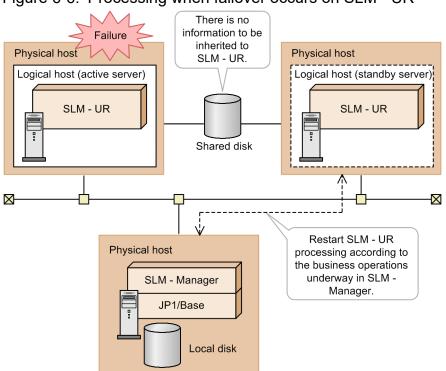


Figure 6-6: Processing when failover occurs on SLM - UR

The following subsections explain the failover processing flows depending on the timing of the failover.

# (1) While neither monitoring nor detection of monitored services is being performed

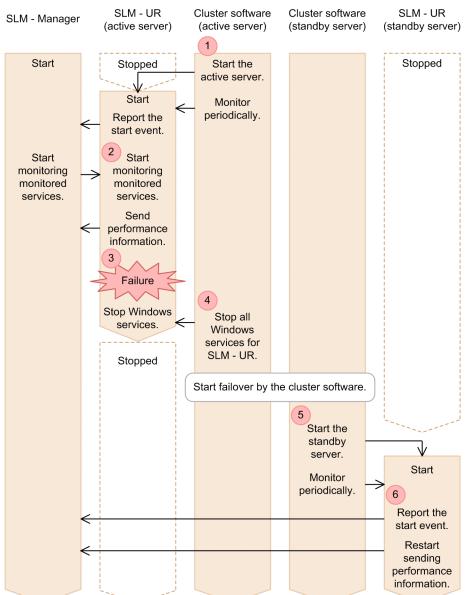
When failover occurs on SLM - UR while neither monitoring nor detection of monitored services is being performed, only connection to SLM - Manager is restored after SLM - UR is started on the standby server. Neither monitoring nor detection processing is started.

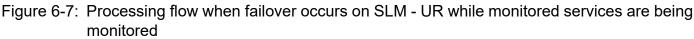
<sup>6.</sup> Preparations Before Starting (Cluster System)

# (2) While monitored services are being monitored

When failover occurs on SLM - UR while monitored services are being monitored, monitoring is restarted after SLM - UR has started on the standby server.

The following figure shows the processing flow when failover occurs on SLM - UR while monitored services are being monitored.





The following explains the processing flow shown in the figure, where the numbers correspond to the numbers in the figure:

- 1. The cluster software (active server) starts SLM UR (active server). The cluster software (active server) also starts periodic monitoring of server status.
- 2. Upon receiving a notification that SLM Manager has started monitoring the monitored services, SLM UR (active server) starts monitoring and sends performance information.

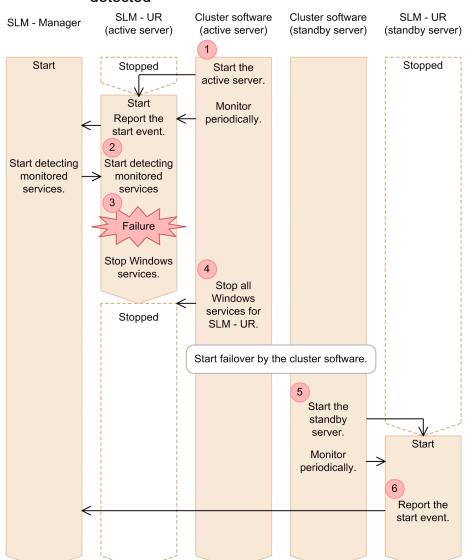
<sup>6.</sup> Preparations Before Starting (Cluster System)

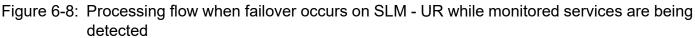
- 3. Because a failure has occurred on SLM UR (active server), the Windows services stop.
- 4. All Windows services for SLM UR that have been registered into SLM UR (active server) are stopped by the cluster software (active server) after which failover processing starts.
- 5. The cluster software (standby server) starts SLM UR (standby server). The cluster software (standby server) also starts periodic monitoring of server status.
- 6. A notification of the start event is sent from the started SLM UR (standby server) to SLM Manager and transmission of performance information is restarted.

# (3) While detection of monitored services is being performed

When failover occurs on SLM - UR while detection of monitored services is being performed, the SLM - Manager status changes from **Detecting** to **Stopped**. Once SLM - UR has started on the standby server, its connection to SLM - Manager is restored.

The following figure shows the processing flow when failover occurs on SLM - UR while monitored services are being detected.





6. Preparations Before Starting (Cluster System)

The following explains the processing flow shown in the figure, where the numbers correspond to the numbers in the figure:

- 1. The cluster software (active server) starts SLM UR (active server). The cluster software (active server) also starts periodic monitoring of server status.
- 2. Upon receiving a notification that SLM Manager has started detecting monitored services, SLM UR (active server) starts detection processing.
- 3. Because a failure has occurred on SLM UR (active server), the Windows services stop.
- 4. All Windows services for SLM UR that have been registered into SLM UR (active server) are stopped by the cluster software (active server), after which failover processing starts.
- 5. The cluster software (standby server) starts SLM UR (standby server). The cluster software (standby server) also starts periodic monitoring of server status.
- 6. A notification indicating that SLM UR (standby server) has started is sent to SLM Manager and connection is restored.

<sup>6.</sup> Preparations Before Starting (Cluster System)

# 6.2 Deploying SLM

This section explains the tasks that must be performed in order to use SLM in a cluster system.

You must perform the tasks described below before you configure your cluster system.

Table 6-6: Preparations for using SLM in a cluster system

No.	Task	Description
1	Prepare a shared disk.	Prepare a shared disk for sharing service performance information when the system is switched from the active server to the standby server.
		Before you set up the logical host environment, set up the shared disk so that it can be accessed from both the active server and the standby server.
2	Register host names and IP addresses (if a DNS server is not used).	<ul> <li>Register the host names and IP addresses of the following hosts into the hosts files on both the active system and the standby system:</li> <li>Physical hosts</li> <li>Logical hosts</li> </ul>
3	Set the time on the server machines.	Set the time on the server machines so that the time on the active and standby systems is synchronized.
4	Prepare JP1/Base.	Install JP1/Base on the physical host on which SLM - Manager is installed and set it up for operations in the cluster system.

To run SLM in a cluster system, you must set up the logical hosts in the active and standby systems and register the Windows services into the cluster software after you have installed SLM.

# 6.2.1 General procedure for deploying SLM

The figure below shows the general procedure for deploying SLM. Your tasks also include setup of JP1 users in JP1/ Base. The JP1 user setup procedure is the same as when SLM is run in a non-cluster system; for details, see 5.1.1 General procedure for deploying a new SLM.

Figure 6-9:	General procedure	fur using SLM in	a cluster system
J	-	5	,

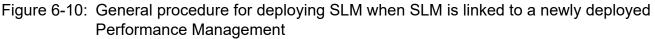
Tasks in the active system	Tasks in the standby system	Subsection
Install SLM on the physical host.	Install SLM on the physical host.	6.2.5
Set up the logical host.		6.2.6 6.2.7
	Set up the logical host.	6.2.8 6.2.9
Register the Windows services into the cluster software.		6.2.10

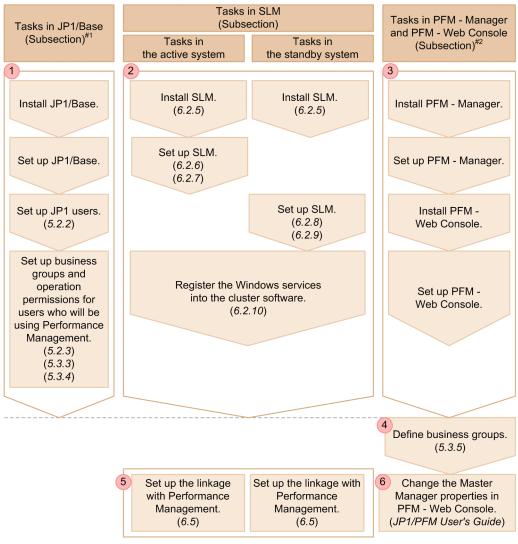
# 6.2.2 General procedure for upgrading SLM

Before you upgrade an SLM that has already been deployed, be sure to back up the data. You can then perform the tasks for deploying SLM.

# 6.2.3 General procedure for deploying SLM (when linking with a newly deployed Performance Management)

The figure below shows the general procedure for deploying SLM that is linked with a newly deployed Performance Management when an SLM linked with Performance Management is to run in a cluster configuration. Steps 1 through 3 in the figure can be performed in any order; the same applies to steps 5 and 6.





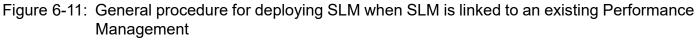
Note: In the manual name above, *JP1/Performance Management* is abbreviated as *JP1/PFM*.

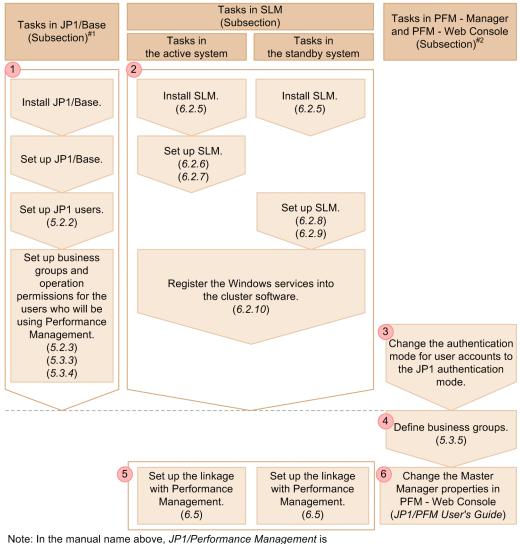
#1: For the tasks for which no subsection is indicated, see the *JP1/Base User's Guide*.

#2: For the tasks for which no subsection is indicated, see the JP1/Performance Management Planning and Configuration Guide. The procedure explained here is applicable to SLM that runs in a cluster configuration. For details about the deployment procedure when the Performance Management to be linked with SLM is also run in a cluster configuration, see the description of configuration and operation in a cluster system in the *JP1/Performance Management User's Guide*.

# 6.2.4 General procedure for deploying SLM (when linking with an existing Performance Management)

The figure below shows the general procedure for deploying SLM that is linked with an existing Performance Management when an SLM linked with Performance Management is to run in a cluster configuration. Steps 1 through 3 in the figure can be performed in any order; the same applies to steps 5 and 6.





abbreviated as *JP1/PFM*.

- #1: For the tasks for which no subsection is indicated, see the *JP1/Base User's Guide*.
- #2: For the tasks for which no subsection is indicated, see the JP1/Performance Management Planning and Configuration Guide.

The procedure explained here is applicable to SLM that is run in a cluster configuration. For details about the deployment procedure when Performance Management to be linked with SLM is run in a cluster configuration, see the description of configuration and operation in a cluster system in the *JP1/Performance Management User's Guide*.

## 6.2.5 Installing SLM

Installation of SLM is the same as when SLM is run in a non-cluster system. For details about how to install SLM, see 5.1.5 Installing SLM.

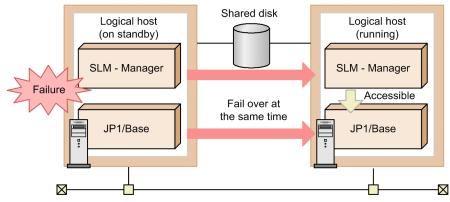
# (1) Supplementary information

- Do not install SLM on the shared disk.
- Install the same version of SLM on the local disks of the active and standby systems.
- Install SLM in folders with the same names on drives with the same names in both the active and standby systems.
- During installation, specify the same settings in both the active and standby systems.
- To use SLM Manager, JP1/Base is required. You must install JP1/Base on the physical machines on which SLM Manager is installed in both the active and standby systems. For details about how to install JP1/Base, see the *SLM/Base User's Guide*.
- When the logical host of JP1/Base is set up, the event database might not be created on the local disk, depending on settings, which will result in a setting that information not be inherited.
   Set up the logical host of JP1/Dass as that the securit database is inherited.

Set up the logical host of JP1/Base so that the event database is inherited. For details about JP1/Base setup, see the *SLM/Base User's Guide*.

• A JP1/Base environment must be configured on the same logical host as for SLM - Manager and set up to fail over when failover occurs on SLM - Manager. The following figure shows the configuration in which JP1/Base is configured on the same logical host.

Figure 6-12: Configuration in which JP1/Base is configured on the same logical host



If the JP1/Base environment is configured on a different logical host from the one used for SLM - Manager and failover occurs only on the JP1/Base logical host, the JP1/Base functions will no longer be accessible from JP1/ Software Distribution Manager. As a result, SLM - Manager's login function and the JP1 event issuance function will become unavailable.

# (2) Next task

• 6.2.6 Setting up the logical host in the active system (SLM - Manager)

<sup>6.</sup> Preparations Before Starting (Cluster System)

## 6.2.6 Setting up the logical host in the active system (SLM - Manager)

You set up SLM - Manager as the logical host in the active system.

You can set up either SLM - Manager first or SLM - UR first.

This subsection explains how to set up SLM - Manager.

# (1) Before you start

- Before you start the setup, install the SLM Manager that is to be set up. For details about how to install SLM, see 6.2.5 Installing SLM.
- Verify that the following three Windows services have stopped:
  - SLM Manager service SLM Manager DB Cluster Service (service name: HiRDBClusterService JL0)
  - SLM Manager service SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service)
  - SLM Manager service SLM Manager Web Service (service name: JP1\_ITSLM\_MGR\_Web\_Service)

The other items to be verified are the same as when SLM is run in a non-cluster system; for details, see 5.1.6 Setting up SLM - Manager.

### (2) Procedure

To set up the logical host in the active system:

1. Create the options file required for setup.

For details about the options file, see 9.12 jslmmgrsetup (sets up SLM - Manager) in 9. Commands.

2. Store the created options file in a desired folder.

Make sure that the absolute path of the options file storage location does not exceed 255 bytes including the options file name (any name).

3. Execute the setup command.

The following shows the setup command that is to be executed:

*SLM-Manager-installation-folder*\mgr\bin\jslmmgrsetup -c online *absolute-path-of-options-file* For details about the setup command, see 9.12 jslmmgrsetup (sets up SLM - Manager) in 9. Commands.

If the command terminates normally, SLM - Manager has been set up to be used as the logical host in the active system.

# (3) Supplementary information

The supplementary information is the same as when SLM is run in a non-cluster system; for details, see 5.1.6 Setting up SLM - Manager.

# (4) Next task

• 6.2.7 Setting up the logical host in the active system (SLM - UR)

<sup>6.</sup> Preparations Before Starting (Cluster System)

# 6.2.7 Setting up the logical host in the active system (SLM - UR)

You set up SLM - UR as the logical host in the active system.

You can set up either SLM - UR first or SLM - Manager first.

# (1) Before you start

- Before you start the setup, install the SLM UR that is to be set up. For details about how to install SLM, see 6.2.5 Installing SLM.
- Verify that the following Windows service is stopped:
  - SLM UR service SLM User Response Service (service name: JP1\_ITSLM\_UR\_Service)

The other items to be verified are the same as when SLM is run in a non-cluster system; for details, see 5.1.7 Setting up SLM - UR.

# (2) Procedure

To set up the logical host in the active system:

1. Execute the command for checking the network interface number and IP address of the host on which SLM - UR has been installed.

Execute the following command:

SLM-UR-installation-folder\ur\bin\jslmuripls

For details about the command for checking the network interface number and IP address, see 9.17 jslmuripls (displays network interface number and IP address) in 9. Commands.

2. Create the options file required for setup based on the information checked by executing the jslmuripls command.

For details about the options file, see 9.19 jslmursetup (sets up SLM - UR) in 9. Commands.

3. Store the created options file in a desired folder.

Make sure that the absolute path of the options file storage location does not exceed 255 bytes including the options file name (any name).

4. Execute the setup command.

The following shows the setup command that is to be executed:

SLM-UR-installation-folder\ur\bin\jslmursetup -c online absolute-path-of-options-file

For details about the setup command, see 9.19 jslmursetup (sets up SLM - UR) in 9. Commands.

If the command terminates normally, SLM - UR has been set up to be used as the logical host in the active system.

# (3) Supplementary information

The supplementary information is the same as when SLM is run in a non-cluster system; for details, see 5.1.7 Setting up SLM - UR.

# (4) Next task

• 6.2.8 Setting up the logical host in the standby system (SLM - Manager)

## 6.2.8 Setting up the logical host in the standby system (SLM - Manager)

You set up SLM - Manager as the logical host in the standby system.

You can set up either SLM - Manager first or SLM - UR first.

# (1) Before you start

- Switch the standby system from standby server to active server to make the shared disk accessible.
- Before you start the setup, install the SLM Manager that is to be set up. For details about the installation, see 6.2.5 Installing SLM.
- Verify that the following three Windows services are stopped:
  - SLM Manager service SLM Manager DB Cluster Service (service name: HiRDBClusterService JL0)
  - SLM Manager service SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service)
  - SLM Manager service SLM Manager Web Service (service name: JP1\_SLM\_MGR\_Web\_Service)

The other items to be verified are the same as when SLM is run in a non-cluster system; for details, see 5.1.6 Setting up SLM - Manager.

### (2) Procedure

To set up the logical host in the standby system:

- Create the options file required for setup.
   For details about the options file, see 9.12 jslmmgrsetup (sets up SLM Manager) in 9. Commands.
- Store the created options file in a desired folder. Make sure that the absolute path of the options file storage location does not exceed 255 bytes including the options file name (any name).
- 3. Execute the setup command.

The following shows the setup command that is to be executed:

*SLM-Manager-installation-folder*\mgr\bin\jslmmgrsetup -c standby *absolute-path-of-options-file* For details about the setup command, see 9.12 jslmmgrsetup (sets up SLM - Manager) in 9. Commands.

If the command terminates normally, SLM - Manager has been set up to be used as the logical host in the standby system.

### (3) Supplementary information

• Specify the same information in the options file that is specified in the argument of the jslmmgrsetup command as was specified for the active system. After you have executed the jslmmgrsetup command, make sure that you verify that the contents of SLM - Manager's system definition file are the same as the contents of SLM - Manager's system.

The other supplementary information is the same as when SLM is run in a non-cluster system; for details, see 5.1.6 Setting up SLM - Manager.

# (4) Next task

• 6.2.9 Setting up the logical host in the standby system (SLM - UR)

<sup>6.</sup> Preparations Before Starting (Cluster System)

### 6.2.9 Setting up the logical host in the standby system (SLM - UR)

You set up SLM - UR as the logical host in the standby system.

You can set up either SLM - UR first or SLM - Manager first.

### (1) Before you start

- Switch the standby system from standby server to active server to make the shared disk accessible.
- Before you start the setup, install the SLM UR that is to be set up. For details about the installation, see 6.2.5 Installing SLM.
- Verify that the following Windows service is stopped:
  - SLM UR service SLM User Response Service (service name: JP1\_ITSLM\_UR\_Service)

The other items to be verified are the same as when SLM is run in a non-cluster system; for details, see 5.1.7 Setting up SLM - UR.

## (2) Procedure

To set up the logical host in the standby system:

1. Execute the command for checking the network interface number and IP address of the host on which SLM - UR has been installed.

Execute the following command:

*SLM-UR-installation-folder*\ur\bin\jslmuripls

For details about the command for checking the network interface number and IP address, see 9.17 jslmuripls (displays network interface number and IP address) in 9. Commands.

2. Create the options file required for setup based on the information checked by executing the jslmuripls command.

For details about the options file, see 9.19 jslmursetup (sets up SLM - UR) in 9. Commands.

3. Store the created options file in a desired folder.

Make sure that the absolute path of the options file storage location does not exceed 255 bytes including the options file name (any name).

4. Execute the setup command.

The following shows the setup command that is to be executed:

*SLM-UR-installation-folder*\ur\bin\jslmursetup -c standby *absolute-path-of-options-file* For details about the setup command, see 9.19 jslmursetup (sets up SLM - UR) in 9. Commands.

If the command terminates normally, SLM - UR has been set up to be used as the logical host in the standby system.

## (3) Supplementary information

• Specify the same information in the options file that is specified in the argument of the jslmursetup command as was specified for the active system. After you have executed the jslmursetup command, make sure that you verify that the contents of SLM - UR's system definition file are the same as the contents of SLM - UR's system definition file in the active system.

The other supplementary information is the same as when SLM is run in a non-cluster system; for details, see 5.1.7 Setting up SLM - UR.

<sup>6.</sup> Preparations Before Starting (Cluster System)

## (4) Next task

• 6.2.10 Registering the Windows services into the cluster software

### 6.2.10 Registering the Windows services into the cluster software

You register the Windows services for SLM - Manager and SLM - UR into the cluster software.

### (1) Before you start

- Verify that your user account belongs to the OS's Administrators group.
- If at the time you register the Windows services into the cluster software you set the order in which the Windows services are to be started, use the order shown in the table below.
  - Windows services for SLM Manager

No.	Windows service	Dependency		
	Displayed name	Service name		
1	JP1/Base Event logical-host-name <sup>#1</sup>	JP1_Base_Event <i>logical-host-</i> name <sup>#1</sup>	<ul> <li>Logical IP address used by JP1/ Base</li> <li>Shared disk used by JP1/Base</li> </ul>	
2	JP1/Base logical-host-name <sup>#1</sup>	JP1_Base_ <i>logical-host-name</i> <sup>#1</sup>	Windows service for 1	
3	SLM - Manager DB Service <sup>#2</sup>	HiRDBEmbeddedEdition_JL0	<ul> <li>Logical IP address used by SLM <ul> <li>Manager</li> </ul> </li> <li>Shared disk used by SLM - Manager</li> </ul>	
4	SLM - Manager DB Cluster Service <sup>#2</sup>	HiRDBClusterService_JL0	Windows service for 3	
5	SLM - Manager Service	JP1_ITSLM_MGR_Service	Windows service for 4	
6	SLM - Manager Web Service <sup>#3</sup>	JP1_ITSLM_MGR_Web_Servic e	Windows service for 5	

#1

*logical-host-name* is the logical host name specified when JP1/Base is run in the cluster system. #2

If the cluster software is set so that, before failover is performed after the Windows service has stopped, starting the Windows services is retried on the same physical host, set the cluster software to fail over without retrying starting the Windows services.

#3

After you have registered the Windows service, perform the operations listed below, based on the OS you are using.

If the OS is Windows Server 2008 R2:

Open a command prompt with Administrators permissions, and then execute the following command:

Cluster res "JP1/SLM - Manager Web Service" /priv StartupParameters=""

If the OS is Windows Server 2012 or Windows Server 2016:

Execute PowerShell in the command prompt, and then execute the following command:

Get-ClusterResource "JP1/SLM - Manager Web Service" | Set-ClusterParameter - Name StartupParameters -value ""

After executing the command, display the Properties dialog box for **SLM - Manager Web Service** to verify that the startup parameter value is blank on the **General** tab.

• Windows services for SLM - UR

No.	Windows service	Dependency	
	Displayed name	Service name	
1	SLM - UR Response Service	JP1_ITSLM_UR_Service	<ul> <li>Logical IP address used by SLM - UR</li> <li>Shared disk used by SLM - UR</li> </ul>

• If you have configured the SLM - Manager and SLM - UR environments on the same logical host, set the cluster service to start SLM - Manager first and then start SLM - UR.

### (2) Procedure

For details about how to register the Windows services into the cluster software, see the applicable cluster software documentation.

### 6.2.11 Installing the HTML manual

Copying the HTML manual to a specified folder enables you to reference the HTML manual by clicking **Help** in the upper right corner of a window (or by clicking the **Help** button in the login window).

Installation of the HTML manual is the same as when SLM is run in a non-cluster system; for details, see 5.1.8 Installing the HTML manual.

## 6.2.12 Installing and setting up PFM - Manager and PFM - Web Console (working with Performance Management)

You install and then set up PFM - Manager and PFM - Web Console as the products required for linking with Performance Management.

The procedures for installing and setting up PFM - Manager and PFM - Web Console are the same as when SLM is run in a non-cluster system; for details, see 5.1.9 Installing and setting up PFM - Manager and PFM - Web Console (working with Performance Management).

### 6.2.13 Deleting the Windows services from the cluster software

If you delete the SLM environment from the cluster system, you must also delete the Windows services.

### (1) Before you start

• Verify that your user account belongs to the OS's Administrators group.

### (2) Procedure

Delete the Windows services for SLM that were registered in 6.2.10 Registering the Windows services into the cluster software.

For details about how to delete Windows services from the cluster software, see the cluster software documentation.

### (3) Next task

• 6.2.15 Undoing the setup of SLM on the logical hosts in the active and standby systems

# 6.2.14 Undoing the setup of PFM - Manager and PFM - Web Console and then uninstalling them (working with Performance Management)

When PFM - Manager and PFM - Web Console are no longer needed, you undo their setup, and then uninstall them. If you will be using Performance Management after its linkage with SLM has been released, there is no need to undo the setup or to uninstall Performance Management.

The procedures for undoing the setup and uninstalling PFM - Manager and PFM - Web Console are the same as when SLM is run in a non-cluster system; for details, see 5.1.10 Undoing the setup of and uninstalling PFM - Manager and PFM - Web Console (working with Performance Management).

## 6.2.15 Undoing the setup of SLM on the logical hosts in the active and standby systems

To delete the cluster system environment, you undo the setup of the logical hosts.

## (1) Before you start

• Switch the logical host in the active or standby system that is subject to unsetup to the active server. If you undo the setup without switching the logical host to the active server, unneeded files might be retained.

## (2) Procedure

The procedure for undoing the setup of logical hosts is the same in both the active and standby systems. This procedure is also the same as for undoing the setup of SLM - Manager and SLM - UR when SLM is run in a non-cluster system.

For details about how to undo the setup of SLM - Manager, see 5.1.11 Undoing the SLM - Manager setup. For details about how to undo the setup of SLM - UR, see 5.1.12 Undoing the SLM - UR setup.

## (3) Next task

• 6.2.16 Uninstalling SLM

## 6.2.16 Uninstalling SLM

Uninstallation of SLM is the same as when SLM is run in a non-cluster system. For details about the uninstallation procedure, see 5.1.13 Uninstalling SLM.

<sup>6.</sup> Preparations Before Starting (Cluster System)

### 6.3 Setting up the users in SLM

To use SLM, you must provide an authentication server (JP1/Base), and then use JP1/Base as the authentication server to set up the JP1 users and the operation permissions in SLM.

The procedure for setting up users in SLM is the same as when SLM is run in a non-cluster system; for details, see 5.2 User settings in SLM.

If you run SLM - Manager in a cluster system, you must also run a JP1/Base that is installed on the same machine in the cluster system. However, if you have configured the JP1/Base that is used as the authentication server on a separate machine, it is optional to use the authentication server in the cluster system.

For details about the settings for running JP1/Base in a cluster system, see the JP1/Base User's Guide.

6. Preparations Before Starting (Cluster System)

## 6.4 Setting up the users in Performance Management (working with Performance Management)

If you link SLM with Performance Management, you must set up the JP1 users in JP1/Base according to the user authentication mode used in Performance Management. Also in Performance Management, set up the business groups to be associated with the JP1 users.

The procedure for setting up users in Performance Management is the same as when SLM is run in a non-cluster system. See 5.3 User setup in Performance Management (working with Performance Management).

6. Preparations Before Starting (Cluster System)

### 6.5 Setting up a linkage between SLM and Performance Management

If you link SLM with Performance Management, you must edit the system definition files in SLM. The items that need to be edited are the same as when SLM is run in a non-cluster system; for details, see 5.4 Setting up a linkage between SLM and Performance Management.

If you run SLM in a cluster system, you must edit the system definition files in both the active and standby systems. Specify the same information in the system definition files in both the active and standby systems.

In Performance Management, the Master Manager properties must be changed in PFM - Web Console. For details about changing the Master Manager properties in PFM - Web Console, see the *JP1/Performance Management User's Guide*.

<sup>6.</sup> Preparations Before Starting (Cluster System)

## 6.6 Settings for reporting monitoring results by email (working with Performance Management)

When it is linked with JP1/IM (JP1/IM - Manager and JP1/IM - View), SLM can report monitoring results by email. This linking is optional. Evaluate whether you need to link with JP1/IM.

The settings for linking with JP1/IM are the same as when SLM is run in a non-cluster system; for details, see 5.5 Settings for reporting monitoring results by email (working with JP1/IM).

6. Preparations Before Starting (Cluster System)

### 6.7 Migrating to a cluster system

This section explains the tasks involved in migrating SLM from a non-cluster system environment to a cluster system environment.

Before you migrate SLM, you must change the SLM version in the non-cluster environment so that it matches the SLM version that will be used in the cluster system environment.

The procedure explained here assumes that the physical host used in the non-cluster system is migrated to the cluster system environment and then is used as the physical host in the active system, as shown in the figure below. The figure shows the procedure for SLM - Manager, but the same procedure applies to SLM - UR.

## Figure 6-13: Example of using the physical host in the non-cluster system as the physical host in the active system after migration (migrating SLM - Manager)

• Environment before migration Physical host SLM - Manager JP1/Base X  $\boxtimes$ Use the physical host used before migration as the physical host in the active system after migration. • Environment after migration Physical host Physical host (active system) (standby system) Logical host Shared disk Logical host SLM - Manager SLM - Manager JP1/Base JP1/Base  $\boxtimes$ X

### 6.7.1 Migrating SLM - Manager

This subsection explains the procedure for migrating SLM - Manager from a non-cluster system environment to a cluster system environment.

### (1) Before you start

- First, terminate SLM Manager operation, then perform the following preparations for migration:
  - 1. Verify that the Windows services listed below are running; if they are not running, start them: **SLM Manager DB Service**

<sup>6.</sup> Preparations Before Starting (Cluster System)

### **SLM - Manager Service**

### **SLM - Manager Web Service**

2. Export data from the database.

Use the jslmmgrexport command to export all the data that is to be migrated to the cluster environment. For details about the command, see 9.9 jslmmgrexport (exports service monitor information) in 9. Commands.

- 3. Use the cluster software to stop the Windows services for SLM Manager.
- 4. Undo the setup of SLM Manager.

Restore SLM - Manager to its pre-setup status. For details about undoing the setup of SLM - Manager, see 5.1.11 Undoing the SLM - Manager setup.

### (2) Procedure

To migrate SLM - Manager from a non-cluster system environment to a cluster system environment:

1. Set up the logical hosts in both the active and the standby systems, add the Windows services, and then set up the cluster system.

The procedure for setting up the cluster system is the same as for setting up a new cluster system.

For details about setting up a cluster system, see 6.2 Deploying SLM.

- Use the cluster software's functions to change the active system to the active server.
   For details about changing systems, see the cluster software documentation.
   If the active system has already been set up as the active server, skip this step.
- 3. Use the cluster software's functions to start SLM in the active system.
- 4. Import into the database in the active system the data that was exported from database earlier.

Use the jslmmgrimport command to import all the data that is to be migrated to the cluster environment. For details about the command, see 9.10 jslmmgrimport (imports service monitor information) in 9. Commands.

### 6.7.2 Migrating SLM - UR

This subsection explains the procedure for migrating SLM - UR from a non-cluster system environment to a cluster system environment.

### (1) Before you start

• First terminate SLM - UR, then undo the setup of SLM - UR in preparation for migration. For details about undoing the setup of SLM - UR, see 5.1.12 Undoing the SLM - UR setup.

### (2) Procedure

To migrate SLM - UR from a non-cluster system environment to a cluster system environment:

1. Set up the logical hosts in both the active and the standby systems, add the Windows services, and then set up the cluster system.

The procedure for setting up the cluster system is the same as for setting up a new cluster system.

For details about setting up a cluster system, see 6.2 Deploying SLM.

2. Use the cluster software's functions to change the active system to the active server. For details about changing systems, see the cluster software documentation.

<sup>6.</sup> Preparations Before Starting (Cluster System)

If the active system has already been set up as the active server, skip this step.

3. Use the cluster software's functions to start SLM in the active system.

<sup>6.</sup> Preparations Before Starting (Cluster System)

### 6.8 Notes about running SLM in a cluster system

• If you run SLM in a cluster system, you must specify restart in the managerStartMode property in the system definition file.

When you set up a logical host that is run in a cluster system, restart is set in the managerStartMode property depending on the command. After you have set up the logical host, do not change this property value to normal. If it is changed to normal, the monitoring of monitored services cannot be restarted after failover.

• If SLM - UR starts, stops, or fails over while failover processing is underway on SLM - Manager, a start or termination notification from SLM - UR to SLM - Manager might timeout. To avoid such a timeout, we recommend that you adjust the values of the announceRetryCount and announceRetryInterval properties in the system definition file to satisfy the following condition:

announceRetryCount property value  $\times$  announceRetryInterval property value > amount of time in seconds required from start to completion of SLM - Manager failover

- Whether SLM is run in a physical host environment or a logical host environment is determined after SLM has been set up. SLM cannot be run in both physical and logical environments at the same time. Also, SLM does not support running more than one logical host at a time.
- When the cluster environment setup is undone, database-related files might remain on the shared disk. If you do not need these files, delete them manually.
- If you want to set up as a standby host a host that has already been set up as the active host, or vice versa, make sure that you first undo the setup and then perform the setup again. The unsetup process deletes the existing data. Therefore, before you undo the setup, export data that you need. Import the data after you have finished setting up the host.
- When you set up logical hosts in a cluster environment, specify the same settings in the options files in both the active and standby systems.
- If you run SLM in a cluster environment, do not use the JP1/Base function for controlling the order in which Windows services are started. If you want to specify the order in which the Windows services for SLM and JP1/Base are started and stopped, use the cluster software's function for controlling the Windows service start sequence.

<sup>6.</sup> Preparations Before Starting (Cluster System)



## Troubleshooting

This chapter explains how to troubleshoot problems with SLM.

### 7.1 Troubleshooting

If a problem occurs in SLM, a message might be output to the window, event log, integrated trace log, or message log. In the event of a problem, check the displayed message and then take the appropriate corrective action, if possible.

In the following cases, you must collect data needed for determining the cause of the problem and then contact the system administrator:

- The displayed message cannot be handled.
- The corrective action taken based on the message does not resolve the problem.
- A problem arises, but no message is output.

This section explains how to check and handle messages that are output and how to collect the data needed for determining the cause of a problem.

### 7.1.1 Checking and handling the output messages

The SLM messages are output to the window, event log, integrated trace log, or message log.

If a message has been output, check the message to determine the nature of the problem. If the problem can be handled based on the information provided in the message, take the appropriate corrective action.

### (1) Before you start

• Check if a message has been output.

For details about troubleshooting when no message is output, see 7.1.6 Collecting the data needed for determining the cause of a problem.

### (2) Procedure

To check and handle an output message:

1. Check the message that has been output.

Messages are output to the window, event log, integrated trace log, or message log.

- To display the event logs, from the Windows **Start** menu, select **Administrative Tools**, **Event Viewer**, and then from the displayed Event Viewer window, select **Custom Views**, then **Administrative Events**.
- The integrated trace logs are output to the following location:

```
system-drive:\Program Files\HITACHI\HNTRLib2\spool\hntr2N<sup>#</sup>.log
system-drive:\Program Files(x86)\HITACHI\HNTRLib2\spool\hntr2N<sup>#</sup>.log
#: N is a number from 1 to 4.
```

• The message logs are output to the following location:

For SLM - Manager: SLM-Manager-installation-folder\mgr\logs\ For SLM - UR: SLM-UR-installation -folder\ur\logs\

2. If possible, take the appropriate corrective action based on the information provided in the message. For details about the messages, see 11.3 Messages.

```
7. Troubleshooting
```

Checking and handling an output message is now complete. However, if the message cannot be handled or the corrective action taken based on the message does not resolve the problem, you must collect data needed for determining the cause of the problem and contact the system administrator.

For details about how to collect the data needed for determining the cause, see 7.1.6 Collecting the data needed for determining the cause of a problem.

### (3) Related topics

- 7.2.2 Event logs
- 7.2.3 Integrated trace logs
- 7.2.4 Message logs
- 7.2.6 Notes about log files

### 7.1.2 Examples of handling problems that might occur in SLM

This subsection explains examples of handling problems that might occur in SLM.

No.	Description
1	The SLM - Manager service does not start.
2	The SLM - UR service does not start.
3	Cannot log in (the login window cannot be displayed).
4	An attempt was made to register a monitored service, but its URI is not detected.
5	The monitor settings for a monitored service cannot be changed.
6	Monitoring results exceeded the threshold or were off the baseline, but no Error or Warning event was displayed.
7	Error or Warning is displayed in the Real-time Monitor window although the numeric values are normal.
8	<b>Error</b> or <b>Warning</b> is displayed on the <b>Performance chart</b> tab in the <b>Event</b> and <b>Performance chart</b> tabs area of the Troubleshoot window for a time period when values do not appear to be exceeding the threshold or to be off the baseline.
9	The list of business groups is not displayed in <b>Business groups</b> even if the <b>Refresh configuration information</b> button is clicked in the <b>Configuration information settings</b> area of the <b>Settings</b> window.
10	The speed at which login processing is performed and performance graphs are displayed decreases.

### (1) The SLM - Manager service does not start

#### Cause:

The following are possible causes:

1. There is an error in one or more settings in the system definition file.

2. A port number is in conflict with another program.

### Corrective action:

The following describes the corrective action to take for each of the possible causes.

1. Check the values of the settings in the system definition file.

In the system definition file, check the settings required to start SLM - Manager. For details about the system definition file, see 5.6 Editing the system definition files to change settings.

<sup>7.</sup> Troubleshooting

2. Check the port number being used by SLM - Manager. If you need to change a port number, see the following subsections.

### Changing the port number in SLM - Manager

- -8.6.1 Changing SLM Manager's RMI communication port number
- -8.6.2 Changing SLM UR's RMI communication port number
- -8.6.3 Changing the listen port number of the SLM Manager embedded database
- -8.6.4 Changing the listen port number of the SLM Manager embedded Web server

-8.6.5 Changing the port number of the internal communications port of the SLM - Manager embedded Web server

-8.6.6 Changing the port number of the completion-message receiving port of the SLM - Manager embedded Web server

### (2) The SLM - UR service does not start

#### Cause:

The following are possible causes:

- 1. SLM Manager is not running.
- 2. There is an error in one or more settings in the system definition file.
- 3. A port number is in conflict with another program.

#### Corrective action:

The following describes the corrective action to take for each of the possible causes.

- 1. Check whether SLM Manager has started. If SLM Manager has not started, take the corrective action described in (1) The SLM Manager service does not start.
- 2. Check the values of the settings in the system definition file.

In the system definition file, check the settings required to start SLM - UR. For details about the system definition file, see 5.6 Editing the system definition files to change settings.

3. Check the port number.

If you need to change the port number, see the following subsection.

### Changing the port number in SLM - UR

8.6.2 Changing SLM - UR's RMI communication port number

### (3) Cannot log in (the login window cannot be displayed)

Cause:

The following are possible causes:

• No firewall has been set up.

Corrective action:

The following describes the corrective action to take for each of the possible causes.

1. Specify the port release setting in the firewall.

For SLM - Manager:

Release the port numbers specified in the psb\_Listen and manager\_port definition items in the options file that was used during setup. If you change the settings in the options file, you must also change the firewall settings.

For details about the options file, see 9.12 jslmmgrsetup (sets up SLM - Manager) in 9. Commands.

<sup>7.</sup> Troubleshooting

For SLM - UR:

Release the port number specified in the ur\_port definition item in the options file that was used during setup. If you change the setting in the options file, you must also change the firewall setting. For details about the options file, see 9.19 jslmursetup (sets up SLM - UR) in 9. Commands.

## (4) An attempt was made to register a monitored service, but its URI is not detected

Cause:

The following are possible causes:

- 1. The network interface number is not valid.
- 2. The browser used for the actual access is running on a different host from the host running the browser displaying the window for registering monitored services.
- 3. SLM UR processing for detecting the monitored service to be registered has failed (the KNAS15719-W message is output).

Corrective action:

The following describes the corrective action to take for each of the possible causes.

1. Use the jslmuripls command to check the interface number of the network device and specify the network interface number used by SLM - UR.

For details about the jslmuripls command, see 9.17 jslmuripls (displays network interface number and IP address) in 9. Commands.

- 2. On the host running the browser that is displaying the window for registering monitored services, open another tab or start another browser for the actual access.
- 3. Recover the status of the SLM UR where the error occurred and then re-execute service detection. You can identify the SLM UR where the processing error occurred from the KNAS15719-W message that was output around the time the service detection error occurred.

### (5) The monitor settings for a monitored service cannot be changed

Cause:

When you wish to change the following settings, monitoring of the monitored service you wish to change the settings of is not stopped.

- Whether SLO monitoring has been implemented
- Whether to monitor trends
- Whether predictive error detection has been implemented
- Period of analysis of predictive error detection

Corrective action:

Stop monitoring the monitored service whose settings are to be changed. For details about how to stop monitoring, see 4.2.2 Stopping monitoring.

## (6) Monitoring results exceeded the threshold or were off the baseline, but no Error or Warning event was displayed

The **Error** and **Warning** events are not displayed for a period after monitoring begins because a certain amount of service performance must be collected before monitoring results can be obtained.

<sup>7.</sup> Troubleshooting

The following shows when display of events starts for each type of monitoring:

- Threshold value monitoring: 60 seconds after monitoring begins
- Out-of-range value detection: 60 seconds after monitoring begins
- Trend monitoring: When 30% of the period subject to trend monitoring specified in the **Monitor settings** area of the Settings window has elapsed (for example, if the specified value is 1 hour, display of events starts when 18 minutes have elapsed)

If monitoring is stopped and then restarted, events are not displayed until the above times have elapsed since the restart.

## (7) Error or Warning is displayed in the Real-time Monitor window although the numeric values are normal

Even if the current numeric values are normal, the display of **Error** or **Warning** remains until the status resulting in the **Error** and **Warning** is released. By default, the display of **Error** or **Warning** remains until the number of error data items in the past one minute becomes less than  $S \times 10 \div 100$  (rounded up), where S is the number of service performance items measured in 60 seconds.

### (8) Error or Warning is displayed on the Performance chart tab in the Event and Performance chart tabs area of the Troubleshoot window for a time period when values do not appear to be exceeding the threshold or to be off the baseline

Cause:

You might be looking at a graph whose display period is set to 10 minutes or more.

When the display period is 10 minutes or more, a graph is plotted to show a summary of maximum values in a specific period so that the number of data items becomes 60. Therefore, the actual times of the error and warning events might appear to be shifted on the graph.

Corrective action:

Check the timing of events by using a graph with the display period set to one minute.

### (9) The list of business groups is not displayed in Business groups even if the Refresh configuration information button is clicked in the Configuration information settings area of the Settings window

Cause:

The operation permission for PFM (JP1\_PFM\_Operator) might not be added to the operation permissions of the SLM user for the JP1 resource groups.

### Corrective action:

For the SLM user, add the operation permission for JP1/PFM (not JP1\_PFM\_Admin, but JP1\_PFM\_Operator). For details about how to set up users who use PFM, see 5.3.3 Setting up the users who will be using Performance Management (PFM authentication mode), or 5.3.4 Setting up the users who will be using Performance Management (JP1 authentication mode).

# (10) The speed at which login processing is performed and performance graphs are displayed decreases

Cause:

Storage efficiency might have decreased and processing might be delayed for the database.

Corrective action:

Execute the command for cleaning up the database (jslmmgrdbcleanup).

For details about the command for cleaning up the database, see 9.8 jslmmgrdbcleanup (cleans up database) in 9. Commands.

### 7.1.3 Investigating the cause of a failover (cluster system)

You must investigate the cause of a failover that occurs when SLM is running in a cluster system. Failover occurs when an event that leads to failover occurs on the active server. For the types of failures that result in failover, see 6.1.3 Failover timing.

## (1) Before you start

• Check if a message has been output.

For details about troubleshooting when no message is output, see 7.1.6 Collecting the data needed for determining the cause of a problem.

## (2) Procedure

To investigate the cause of a failover:

1. Check the message output at the active server.

Messages are output to the cluster software's logs in addition to the SLM - Manager window, event log, integrated trace log, or message log.

- For details about the cluster software's logs, see the cluster software documentation.
- For details about the event log, integrated trace log, and message log output destinations, see 7.1.1 Checking and handling the output messages.
- 2. If possible, take the appropriate corrective action based on the information provided in the message. For details about the messages see 11.3 Messages.

Message checking and taking of corrective action are now complete. However, if the message cannot be handled or the corrective action taken based on the message does not resolve the problem, you must collect data needed for determining the cause of the problem and contact the system administrator.

For details about how to collect the data needed for determining the cause, see 7.1.6 Collecting the data needed for determining the cause of a problem.

## (3) Related topics

- 6.1.3 Failover timing
- 7.2.2 Event logs
- 7.2.3 Integrated trace logs

#### 7. Troubleshooting

JP1/Service Level Management Description

- 7.2.4 Message logs
- 7.2.6 Notes about log files

### 7.1.4 Handling failover errors (cluster system)

If failover from the active server to the standby server has failed, take the appropriate corrective action based on the cause of the failover error.

## (1) Procedure

To handle a failover error:

1. Check the cluster software's logs to determine the cause of the failover error.

The cause of a failover error is one of the following:

- A Windows service start error occurred on SLM's standby server
- A cluster software error occurred

If a Windows service start error occurred on SLM's standby server, go to step 2; if a cluster software error occurred, go to step 3.

2. Check the message output to the standby server's event log, integrated trace log, or message log, and eliminate the cause of the Windows service start error on the standby server.

For details about the output destinations of the event log, integrated trace log, and message log, see 7.1.1 Checking and handling the output messages. For details about the messages, see 11.3 Messages. After you have taken corrective action, go to step 4.

- 3. If failover occurred due to a cluster software error, check the cluster software's logs and eliminate the cause of the error.
- 4. Start the Windows services for SLM from the cluster software.

For details about the Windows services to be started, see 2.1.1 Starting SLM - Manager and 2.1.2 Starting SLM - UR.

If the Windows services start successfully on the standby server, handling of the failover error is complete. If the Windows services still do not start successfully on the standby server after the corrective action was taken on the basis of the message, collect the data needed for determining the cause of the error and contact the system administrator. For details about how to collect the data needed for determining the cause, see 7.1.6 Collecting the data needed for determining the cause of a problem.

### 7.1.5 Handling a shortage of database capacity

If a shortage of database capacity occurs while SLM - Manager is running, you must undo the SLM - Manager setup, extend the database area, and then set up SLM - Manager again.

You can determine whether there is a shortage of database capacity by checking the Windows event logs. From Windows **Start** menu, select **Administrative Tools**, then **Event Viewer**, and then check the **Applications** logs for the following messages:

<sup>7.</sup> Troubleshooting

JP1/Service Level Management Description

Table 7-1: Messages output in the event of a shortage of database capacity

No.	Туре	Source	Event	Message
1	Error	JP1_ITSLM_Manager_DB_Servi ce	30001	КҒРН22025-Е
2	Error	JP1_ITSLM_Manager_DB_Servi ce	30001	КҒРН22026-Е

If either of these messages has been output, take the appropriate corrective action by following the procedure described below.

## (1) Before you start

- Make a database backup. For details about how to back up the database, see 8.1.2 Backing up the database.
- Estimate the size of the database area required for storing data. For details about how to estimate the size of the database area, see How to estimate the size of the database area in 9.12 jslmmgrsetup (sets up SLM Manager) in 9. Commands. Provide as much free space as needed based on the estimation of the database area that is to be extended.

### (2) Procedure

The procedure differs depending on whether you must use the jslmmgrimport command (imports service monitor information) to change all or some of the following items: IP address of the web server that provide the services to be monitored, and the IP address, service group name, and service name of SLM - UR.

If you need past data but do not need to change the IP address, service group name, or service name by using the jslmmgrimport command (imports service monitor information), perform the following procedure:

1. Back up all definition files.

For details about how to back up the definition files, see 8.1.1 Backing up the definition files.

2. Back up the database.

Perform steps 1 to 5 in (2) Procedure in 8.1.2 Backing up the database.

- 3. Terminate the SLM Manager service SLM Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0).
- 4. Run the unsetup command for SLM Manager. For details about the unsetup command, see 9.13 jslmmgrunsetup (undoes SLM - Manager setup) in 9. Commands.
- 5. Create the options file (jplitslm\_setup.opt) needed for setting up SLM Manager and specify values for the following definition items:
  - hdb\_area\_size

The database size you estimated in (1) Before you start

• hdb\_area\_path (or if SLM is running in a cluster system, hdb\_share\_area\_path)

The path of an area that contains the amount of free space specified in the definition item hdb\_area\_size (the absolute path that you specified for hdb\_area\_path when you backed up the definition files in step 2)

For details about the options file, see 9.12 jslmmgrsetup (sets up SLM - Manager).

6. Run the setup command for SLM - Manager.

For details about the setup command, see 9.12 jslmmgrsetup (sets up SLM - Manager) in 9. Commands.

<sup>7.</sup> Troubleshooting

- 7. If necessary, change the startup method of SLM Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0) to Manual (the default setting is Automatic).
- 8. Compare the definition files that were created in step 6 with the backup definition files that were created in step 1, and then, update the definition files if necessary.
- 9. Make sure that the SLM Manager service SLM Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO) is started.
- 10. Restore the database.

Perform steps 5 to 7 in (2) Procedure in 8.1.5 Restoring the database.

If restoration of the database terminates normally, the database area has been expanded.

If any of the following conditions are met, perform the procedure described below.

- You need to use the jslmmgrimport command (imports service monitor information) to change all or some of the following items: the IP address, the service group name, and the service name.
- You do not need past data.
- 1. Back up all definition files.

For details about how to back up the definition files, see 8.1.1 Backing up the definition files.

2. Run the jslmmgrexport command to create an export file.

For details about the jslmmgrexport command, see 9.9 jslmmgrexport (exports service monitor information) in 9. Commands.

- 3. Terminate the SLM Manager service SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service).
- 4. Terminate the SLM Manager service SLM Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0).
- 5. Run the unsetup command for SLM Manager.

For details about the unsetup command, see 9.13 jslmmgrunsetup (undoes SLM - Manager setup) in 9. Commands.

- 6. Create the options file (jplitslm\_setup.opt) needed for setting up SLM Manager and specify values for the following definition items:
  - hdb\_area\_size

The database size you estimated in (1) Before you start

• hdb\_area\_path (or if SLM is running in a cluster system, hdb\_share\_area\_path) The path of an area that contains the amount of free space specified in the definition item hdb\_area\_size

For details about the options file, see 9.12 jslmmgrsetup (sets up SLM - Manager).

7. Run the setup command for SLM - Manager.

For details about the setup command, see 9.12 jslmmgrsetup (sets up SLM - Manager) in 9. Commands.

- 8. If necessary, change the startup method of SLM Manager DB Service (service name: HiRDBEmbeddedEdition JL0) to Manual (the default setting is Automatic).
- 9. Compare the definition files that were created in step 7 with the backup definition files that were created in step 1, and then, update the definition files if necessary.
- 10. Start the SLM Manager service SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service).
- 11. Start the SLM Manager service SLM Manager Web Service (service name: JP1\_ITSLM\_MGR\_Web\_Service).
- 12. Run the jslmmgrimport command to import the export file created in step 2.

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For details about the jslmmgrimport command, see 9.10 jslmmgrimport (imports service monitor information) in 9. Commands.

If the jslmmgrimport command terminates normally, the database area has been extended.

### 7.1.6 Collecting the data needed for determining the cause of a problem

You must collect data needed for determining the cause of a problem and then contact the system administrator in the following cases:

- The displayed message cannot be handled.
- The corrective action taken based on the message does not resolve the problem.
- There is a problem but no message is output.

This subsection explains how to collect the data needed for determining the cause of a problem.

If an error dialog box is displayed when an error has occurred, start collecting data while the dialog box is being displayed.

### (1) Procedure

To collect the data needed for determining the cause of a problem:

1. Obtain a thread dump.

Obtain the execution results of the following command:

For SLM - Manager:

```
SLM-Manager-installation-folder/mgr/system/psb/jdk/jre/bin/jheapprof -f -p process-ID
```

For SLM - UR:

```
SLM-UR-installation -folder/ur/system/psb/jdk/jre/bin/jheapprof -f -p process-ID
```

To specify *process-ID*, open Windows Task Manager's **Process** tab and specify the process ID of the following SLM process:

#### For SLM - Manager:

- cjstartweb.exe
- jslmmengine.exe (all instances of jslmmengine.exe)
- jslmmpcollect.exe
- jslmmRMI.exe
- jslmmUR.exe
- jslmmadaptor.exe
- jslmmdao.exe

#### For SLM - UR:

- jslmuengine.exe
- jslmuRMI.exe
- jslmuUR.exe

If there are multiple processes with the same name as an SLM process on the **Process** tab, right-click a candidate process, select **Properties** from the displayed context menu, and then check the location displayed in **Location** on the **General** tab. If the location is under the SLM installation folder, it is an SLM process.

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For example, if the SLM - Manager installation folder is C:\Program Files\HITACHI\JP1ITSLM, Location on the General tab for the SLM - Manager process cjstartweb.exe shows C:\Program Files\HITACHI \JP1ITSLM\mgr\system\psb\CC\web\bin.

If the process ID is not displayed on the **Process** tab, select **View**, **Select Columns**, and then select **PID (Process Identifier)**.

For details about the command for collecting thread dumps, see 7.2.5 Thread dumps.

2. Execute the data collection command.

Execute the following data collection command:

For SLM - Manager:

SLM-Manager-installation-folder\mgr\bin\jslmminfoget.bat

```
For SLM - UR:
```

SLM-UR-installation -folder\ur\bin\jslmurinfoget.bat

For details about the data collection command, see 9.14 jslmminfoget (collects data needed for investigating the cause of SLM - Manager errors) or 9.16 jslmurinfoget (collects data needed for investigating the cause of SLM - UR errors) in 9. Commands.

3. Collect OS statistical information.

To collect statistical information, use the Windows Performance Monitor. To display Performance Monitor, from the Windows **Start** menu, select **Administrative Tools**, and then **Performance Monitor**.

The following table lists the parameters that need to be collected as OS statistical information.

 Table 7-2:
 Parameters to be collected as OS statistical information

Object	Instance	Counter
Processor	_Total	%Processor Time
		%Privileged Time
		%User Time
Memory	None	Cache Bytes
		Cache Faults/sec
		Page Faults/sec
		Transition Faults/sec
Process	_Total	Handle Count
		Page Faults/sec
		Private Bytes
		Virtual Bytes
		Working Set

4. Record the details of the operation that was underway when the error occurred.

After you have collected data according to steps 1 through 3, record the details of the operation that was underway when the error occurred. You must record the following information:

- Details of the operation that was underway immediately before the error occurred
- Details of the error
- The time the error occurred
- The system configuration (OS version, host name, configuration of SLM Manager and SLM UR)

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- The error's reproducibility
- Login user name
- 5. Collect the error information displayed in the window.

Press the **PrintScreen** key while holding down the **Ctrl** key to obtain a screenshot of the error event. You must collect the following information:

- Error message output by SLM and OS
- Error dialog box
- Message issued by a command
- 6. Collect a user dump.

If an SLM process terminated due to an application error, open Windows Task Manager's **Process** tab while the error dialog box is being displayed, then right-click the terminated process. From the displayed context menu, select **Create Dump File** to collect a user dump.

The SLM processes are as follows:

For SLM - Manager:

- cjstartweb.exe
- jslmmengine.exe (all instances of jslmmengine.exe)
- jslmmpcollect.exe
- jslmmprocctrl.exe
- jslmmRMI.exe
- jslmmUR.exe
- jslmmadaptor.exe
- jslmmdao.exe

### For SLM - UR:

- jslmuengine.exe
- jslmuprocctrl.exe
- jslmuRMI.exe
- jslmuUR.exe

If there are multiple processes with the same name as an SLM process on the **Process** tab, right-click a candidate process, select **Properties** from the displayed context menu, and then check the location displayed in **Location** on the **General** tab. If the location is under the SLM installation folder, it is an SLM process.

For example, if the SLM - Manager installation folder is C:\Program Files\HITACHI\JP1ITSLM, Location on the General tab for the SLM - Manager process cjstartweb.exe shows C:\Program Files\HITACHI \JP1ITSLM\mgr\system\psb\CC\web\bin.

Note:

To collect an accurate user dump, keep the error dialog box displayed while you collect the dump.

7. Collect the log file from when SLM was installed.

You must obtain the log file from the time when SLM was installed only when installation of SLM has failed. If SLM installation failed, execute the commands shown below using a user account belonging to the OS's Administrators group to run the installer and collect the log file.

### For SLM - Manager:

cd SLM-Manager-installer-(MSI-file)-storage-folder msiexec.exe /i ITSLM\_MGR.msi /l\*vx JP1ITSLM\_MGR.log For SLM - UR:

cd SLM-UR-installer-(MSI-file)-storage-folder msiexec.exe /i ITSLM\_UR.msi /l\*vx JP1ITSLM\_UR.log

Also collect the following folder (including files under the folder):

For SLM - Manager:

%TEMP%<sup>#</sup>\Hitachi\JP1ITSLMM\hliclib

For SLM - UR:

%TEMP%<sup>#</sup>\Hitachi\JP1ITSLMU\hliclib

#:  $TEMP\$  is the path indicated by the TEMP environment variable.

Once you have collected all the necessary data, the task for collecting data needed for determining the cause of a problem is complete.

### (2) Related topics

- 7.2.2 Event logs
- 7.2.3 Integrated trace logs
- 7.2.4 Message logs
- 7.2.5 Thread dumps
- 7.2.6 Notes about log files

<sup>7.</sup> Troubleshooting

### 7.2 Log files

The following are the log files:

- Event log, integrated trace log, and message log that are output by SLM
- Thread dump of a thread running within SLM's Java process that is collected by executing the jheapprof command

This section explains the event log, integrated trace log, message log, and thread dumps.

## 7.2.1 Audit log

The audit log is a file to which a history of operations is output. The output data contains information about when operations were performed, who performed them, and what the operations were. SLM obtains information about the operations of users (operation of windows and execution of commands) as an audit log. An audit log that has been output can be utilized as materials for internal control and auditing.

## (1) Types of events output in the audit log

The types of events output in the audit log and the occurrence at which SLM outputs the audit log are shown in the following table. The event type is an indicator used within the audit log to categorize the events output to the audit log.

Event type	Description	Occurrence of output by SLM
Authentication	An event indicating successful/failed user authentication.	<ul> <li>A user logs in to SLM – Manager</li> <li>A user logs out from SLM – Manager</li> </ul>
ConfigurationAccess	An event indicating successful/failed implementation of an administrator or user action such as that for applying changes to settings information.	<ul> <li>Start/stop of service monitoring</li> <li>Start/stop of service detection</li> <li>Start/stop of web transaction detection</li> <li>Registration/deletion/reference of service</li> <li>Update/reference of monitoring settings</li> <li>Update/reference of configuration information</li> <li>Registration of monitor item settings for system performance</li> <li>Registration of availability monitor</li> <li>Registration/editing/deletion/re-sorting/ reference of Web transactions</li> <li>Addition/editing/deletion of template</li> <li>Output of CSV file for report</li> </ul>
ManagementAction	An event indicating the execution of an action or command.	Execution of the following commands • jslmmgrexport • jslmmgrimport • jslmmgrconfig • jslmreport • jslmmgrdbcleanup

Table 7-3: Types of events output in the audit log

JP1/Service Level Management Description

## (2) Output format of the audit log

This section explains the output format, output destination, output items, and an output example of the audit log.

### **Output format**

```
CALFHM x.x, output item 1 = value 1, output item 2 = value 2,..., output item n = value n
```

### Output destination

*SLM-Manager-installation-folder*\mgr\logs\audit\slmaudit**N**<sup>#</sup>.log

#: N represents a number between 1 to the number specified for the number of files.

The output file size and number thereof for the audit log can be changed with the system definition file (jplitslm.properties or jplitslmur.properties). For details, see 5.6.1 Editing the system definition files and 5.6.2 Editable definitions.

### **Output items**

The output items are categorized into the two following categories.

Common output items

Items commonly output by JP1 products that output audit logs.

• Fixed output items Items arbitrarily output by JP1 products that output audit logs.

Common output items

The values output in the common output items and the details of the items are shown in the following table.

Table 7-4: Common output items of the audit log

Item	Output items		Value	Description
number	Item name	Output attribute name	-	
1	Common specification identifiers	-	CALFHM	Indicator of the audit log format
2	Common specification revision number	-	<i>x.x</i>	Revision number for managing audit logs
3	Sequence number	seqnum	Sequence number	Sequence number of the audit log record In the case of a command, the sequence number will be 1.
4	Message ID	msgid	Kxxxnnn[n][n]-y	Message ID of the product
5	Date/time	date	YYYY-MM- DDThh:mm:ss.sssT ZD <sup>#</sup>	Output date/time and time zone of the audit log
6	Generated program name	progid	JP1SLM	Name of program in which the auditing event has been generated

ltem	Output items		Value	Description
number	Item name	Output attribute name	-	
7	Generated component name	compid	Manager	Name of component in which the auditing event has been generated
8	Generated process ID	pid	Process ID	Process ID of process in which the auditing event has been generated
9	Generated location	ocp:host	Host name	Host identification information of host in which the auditing event has been generated
10	Event type	ctgry	<ul> <li>Authentication</li> <li>ConfigurationA ccess</li> <li>ManagementAc tion</li> </ul>	Category of auditing event
11	Result of event	result	<ul><li>Success</li><li>Failure</li></ul>	Result of auditing event
12	Subject	subj:uid	JP1 user name	Information about the user who generated the auditing event
13	identification information	subj:euid	Windows login user name	

### (Legend)

-: None.

#:

T is a separator for the date and time.

TZD is a time zone specifier. One of the following is output.

+hh:mm: Indicates being ahead of the UTC by hh:mm.

-hh:mm: Indicates being behind the UTC by hh:mm.

Z: Indicates being identical to the UTC.

### Fixed output items

The values output in the fixed output items and the details of the items are shown in the following table.

### Table 7-5: Fixed output items of the audit log

Item number	Output items		Value	Description
	Item name	Output attribute name		
1	Object information	obj	<ul><li>View</li><li>Command</li></ul>	Subject of auditing event
2	Action information	op	<ul> <li>Login</li> <li>Logout</li> <li>Refer</li> <li>Re-sort</li> <li>Add</li> <li>Delete</li> <li>Update</li> <li>Start</li> <li>Stop</li> </ul>	Action information that generated the auditing event

Item number	Output items		Value	Description
	Item name	Output attribute name		
2	Action information	ор	• Command	Action information that generated the auditing event
3	Information about the output source	outp:host	Host name	Host identification information of host that has output the audit log common message
4	Free description	msg	Text of message corresponding to the message ID	Free description

### Output example

The following shows an output example of an audit log.

```
CALFHM 1.0, seqnum=1, msgid= KNAS09500-I, date=2015-01-01T15:00:00.000+09:00,
progid=JP1SLM, compid=Manager, pid=1234, ocp:host=host01, ctgry= Authentication, resu
lt=Success, subj:euid=user01, obj= WindowsService, op=Start, outp:host =host01, msg="
Logged in. User name = user01"
```

### (3) Settings for output of the audit log

The settings for output of the audit log are defined with the system definition file (jplitslm.properties). When not configured, the audit log will not be output. For details on how to edit the system definition file, see 5.6.1 Editing the system definition files.

The items to set with the system definition file are shown in the following table.

Table 7-6: Items to set with the system definition file

ltem number	Property	Specified content	Permitted range	Default value
1	loggerAuditEnable	Specifies whether to output the audit log.	true (output), or false (do not output)	false
2	loggerAuditFileCount	Specifies the maximum number of files for the audit log file.	Integer from 1 to 16 (units: number of files)	4
3	loggerAuditMaxFileSiz e	Specifies the maximum size of the audit log file.	Integer from 8192 to 4194304 (units: bytes)	1048576 (1MB)

### 7.2.2 Event logs

Event logs are log information reporting problems in the system and are intended for system administrators. They provide the minimum amount of information. SLM's event logs are output to Windows event logs.

To display event logs, from the Windows Start menu, select Administrative Tools, Event Viewer, and then from the displayed Event Viewer window, select Custom Views, then Administrative Events.

The following table describes the items displayed in the event logs.

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JP1/Service Level Management Description

No.	Displayed item	Description	
1	Log Name	Application is always displayed.	
2	Source	<ul> <li>Product name. One of the following is displayed:</li> <li>SLM - Manager</li> <li>SLM - UR</li> </ul>	
3	Date and Time	Event log output date and time (local time) in the following format: YYYY/MM/DD hh:mm:ss (year/month/date hour:minute:second)	
4	Event ID	ID assigned to each message	
5	Task Category	None is always displayed.	
6	Level	<ul> <li>Type of event log. One of the following is displayed:</li> <li>Information</li> <li>Warning</li> <li>Error</li> </ul>	
7	Keywords	Classic is always displayed.	
8	User	N/A is always displayed.	
9	Computer	Computer name	
10	OpCode	Nothing is displayed.	
11	More Information	Message output by SLM, in the following format: KNAS <i>nnnn-Z message</i> KNAS <i>nnnn-Z</i> : Message ID ( <i>nnnn</i> : message serial number; Z: message type) <i>message</i> : Message text	

### Table 7-7: Items displayed in the event logs

### 7.2.3 Integrated trace logs

Integrated trace logs are provided by Hitachi Network Objectplaza Trace Library (*HNTRLib2*) as collections of trace information output by individual programs at a specific output destination. They contain messages related to start and termination of SLM.

The output destinations of integrated trace logs are as follows:

```
system-drive: \Program Files \HITACHI \HNTRLib2 \spool \hntr2N^{\#}. log
```

```
system-drive:\Program Files(x86)\HITACHI\HNTRLib2\spool\hntr2N^{\#}.log
```

#: *N* is a number from 1 through 4.

The following tables describe the header information and the items output to the integrated trace logs.

### Table 7-8: Header information output to the integrated trace logs

No.	Header	Description	
1	OS information	Information about the OS on which HNTRLib2 is running.	
2	Host name Information about the host on which HNTRLib2 is running.		
3	Time zone	OS's time zone.	

No.	Header	Description
4	HNTRLib2 start time	Time HNTRLib2 started.

Table 7-9:	Items of	utput to	the integrated	l trace logs

No.	Output item	Description	
1	number (4 digits)	Each trace record's sequence number. This numbering is initialized for each process that outputs logs.	
2	date (10 bytes)	Date the trace was output, in the following format: <i>YYYY/MM/DD</i> (year/month/date)	
3	time (12 bytes)	Time (local time) the trace was output, in the following format: <i>hh</i> : <i>mm</i> : <i>ss</i> . <i>sss</i> ( <i>hour</i> : <i>minute</i> : <i>second</i> . <i>millisecond</i> )	
4	<i>application-program-name</i> (maximum of 16 bytes)	Name that identifies the application. The following application program names are output by SLM: JP1ITSLMProcCtrl JP1ITSLMView JP1ITSLMUsrResp JP1ITSLMWebSysAn JP1ITSLMPerColct JP1ITSLMRmiSrv JP1ITSLMRmiSrv JP1ITSLMDao JP1ITSLMAdaptor . command-identifier <sup>#</sup>	
5	pid	Process ID set by the OS	
6	tid	ID identifying the thread	
7	message-ID	Message identifier	
8	message-text	Message text	

#

If the message was output by a command, the identifier of the command is output. For the identifiers that are output, see the descriptions of functions in 9. Commands.

The log output time that is included in the integrated trace logs is based on the time zone of the process that output the log. Therefore, if you change the value of the TZ environment variable and start services or execute commands, the output time might not be based on the time zone of the OS.

Output example:

The following shows an output example of integrated trace log information:

```
**** Microsoft WindowsNT6.1(Build:7600) hostO1

TZ=(local)-9:00 2011/04/20 19:51:04.437 yyyy/mm/dd hh:mm:ss.sss

pid tid message-id message(LANG=0x0411)

0000 2011/04/20 19:53:57.639 JP1ITSLMView 000010FC J33D2EED KNAS15300-I

Logged in. User name = super
```

### 7.2.4 Message logs

Message logs are the log information containing the messages that are output by each process while SLM is running.

JP1/Service Level Management Description

By default, the message logs are output to the following folders:

For SLM - Manager: SLM-Manager-installation-folder\mgr\logs\
For SLM - UR:

SLM-UR-installation -folder\ur\logs\

You can change the size and number of message log files in the jplitslm.properties or jplitslmur.properties system definition file. For details, see 5.6.1 Editing the system definition files and 5.6.2 Editable definitions.

The following table lists and describes the message logs that are output by SLM - Manager.

No.	Message log	Description	Properties in related system definition file	Process that outputs the message log
1	ProcessCtrlMessageM $N^{\#}.\log$	This log is output by SLM - Manager service SLM - Manager Service (service name: JP1_ITSLM_MGR_Service). This is a log of the process that controls each child process.	<ul> <li>loggerMessageLo gLevel</li> <li>loggerProcessCt rlMessageFileCo unt</li> <li>loggerProcessCt rlMessageMaxFil eSize</li> </ul>	jslmmprocctrl
2	RmiServerMessageMN <sup>#</sup> . log	These logs are output by a child process that was started by the control process.	<ul> <li>loggerMessageLo gLevel</li> <li>loggerRmiServer MessageFileCoun t</li> <li>loggerRmiServer MessageMaxFileS ize</li> </ul>	jslmRMI
3	UserResponseMessage MN <sup>#</sup> .log		<ul> <li>loggerMessageLo gLevel</li> <li>loggerUserRespo nseMessageFileC ount</li> <li>loggerUserRespo nseMessageMaxFi leSize</li> </ul>	jslmmUR
4	SlaveMessageMN <sup>#</sup> .log		<ul> <li>loggerSlaveControlMe ssageFileCount</li> <li>loggerSlaveControlMe ssageMaxFileSize</li> </ul>	jslmmSlave
5	PerfCollectorMessag e <i>N</i> <sup>#</sup> .log		<ul> <li>loggerMessageLo gLevel</li> <li>loggerPerfColle ctorMessageFile Count</li> <li>loggerPerfColle ctorMessageMaxF ileSize</li> </ul>	jslmmpcollect

Table 7-10: Message logs output by SLM - Manager

JP1/Service Level Management Description

No.	Message log	Description	Properties in related system definition file	Process that outputs the message log
6	ViewMessageN <sup>#</sup> .log	These logs are output by a child process that was started by the control process.	<ul> <li>loggerMessageLo gLevel</li> <li>loggerViewMessa geFileCount</li> <li>loggerViewMessa geMaxFileSize</li> </ul>	cjstartweb
7	DaoMessageN <sup>#</sup> .log		<ul> <li>loggerDaoMessag eFileCount</li> <li>loggerDaoMessag eMaxFileSize</li> </ul>	jslmmdao
8	InputAdaptorCtrlMes sageN <sup>#</sup> .log		<ul> <li>loggerInputAdap torCtrlMessageF ileCount</li> <li>loggerInputAdap torCtrlMessageM axFileSize</li> </ul>	jslmmadaptor
9	CommandMessageMN <sup>#</sup> .lo g	This log is output by some SLM - Manager commands.	<ul> <li>loggerCommandMe ssageFileCount</li> <li>loggerCommandMe ssageMaxFileSiz e</li> </ul>	Each command process

#: N is a number from 1 through the specified number of files.

When SLM - Manager is in the master/slave configuration, SlaveMessageMN.log is output to both the master and slave instances of SLM - Manager. The message is not output when SLM - Manager is in the single-manager configuration.

The following table lists and describes the message logs that are output by SLM - UR.

Table 7-11: Message logs output by SLM - UR

No.	Message log	Description	Properties in related system definition file	Process that outputs the message log
1	ProcessCtrlMessageU RN <sup>#</sup> .log	This log is output by SLM - Manager service SLM - User Response Service (service name: JP1_ITSLM_UR_Service). This is a log of the process that controls each child process.	<ul> <li>loggerMessageLo gLevel</li> <li>loggerProcessCt rlMessageFileCo unt</li> <li>loggerProcessCt rlMessageMaxFil eSize</li> </ul>	jslmuprocctrl
2	RmiServerMessageURN <sup>#</sup> .log	These logs are output by a child process that was started by the control process.	<ul> <li>loggerMessageLo gLevel</li> <li>loggerRmiServer MessageFileCoun t</li> <li>loggerRmiServer MessageMaxFileS ize</li> </ul>	jslmRMI

No.	Message log	Description	Properties in related system definition file	Process that outputs the message log
3	UserResponseMessage URN <sup>#</sup> .log	These logs are output by a child process that was started by the control process.	<ul> <li>loggerMessageLo gLevel</li> <li>loggerUserRespo nseMessageFileC ount</li> <li>loggerUserRespo nseMessageMaxFi leSize</li> </ul>	jslmuUR
4	WebSystemAnalysisMe ssageN <sup>#</sup> .log		<ul> <li>loggerMessageLo gLevel</li> <li>loggerWebSystem AnalysisMessage FileCount</li> <li>loggerWebSystem AnalysisMessage MaxFileSize</li> </ul>	jslmWebSystemAn alysis

#: *N* is a number from 1 through the specified number of files.

The header information and items that are output to the message logs are the same as for integrated trace logs. For details about the header information and output items, see 7.2.3 Integrated trace logs.

### 7.2.5 Thread dumps

A thread dump is a file to which information about the threads running in a Java process is output.

This subsection explains the jheapprof command that is used to collect thread dumps.

jheapprof (outputs an extended thread dump with statistics by Hitachi class)

The following explains the function, format, and an example of the jheapprof command.

For the format of command explanations, see 9.1 Format of command explanations in 9. Commands.

Function

Outputs for Java processes extended thread dumps containing statistics by Hitachi class. From the statistics by Hitachi class, you can obtain the size of all instances under the members of the instances of each class.

Format

```
jheapprof [-i|-f] [-class class-name] [-explicit|-noexplicit] [-fullgc|-copygc|-
nogc] -p process-ID
```

Execution permission

None

Storage folder

-For SLM - Manager: SLM-Manager-installation-folder\mgr\system\psb\jdk\jre\bin\ -For SLM - UR: SLM-UR-installation -folder\ur\system\psb\jdk\jre\bin\

#### Arguments

--i

Specifies that the user is to be asked whether this command is to be executed on the process with the specified process ID.

If the -f option is omitted, this option is assumed, even if it is omitted.

--f

Specifies that the user is not be asked whether this command is to be executed on the process with the specified process ID.

--class class-name

Specifies that the structure of the classes that have the class (instance) with the specified class name is to be output to the thread dump as members in list format. You must enclose the package name of the specified class in double quotation marks (").

--explicit

Specifies that an explicit heap is to be included as a target of the instance statistics function. If this option is specified together with the -noexplicit option, the last option specified takes effect. Note that there is no need to specify this option in SLM.

--noexplicit

Specifies that an explicit heap is not to be included as a target of instance statistics function. If this option is specified together with the -explicit option, the last option specified takes effect. Note that there is no need to specify this option in SLM.

--fullgc

Specifies that a full garbage collection is to be performed before statistics information is output.

If this option is specified together with the -copygc or -nogc option, the last option specified takes effect.

Specifies that a copy garbage collection is to be performed before statistics information is output.

If this option is specified together with the -fullgc or -nogc option, the last option specified takes effect.

Specifies that a garbage collection is not to be performed before statistics information is output.

If this option is specified together with the -fullgc or -copygc option, the last option specified takes effect.

--p process-ID

Specifies the process ID of the Java program for which statistics by Hitachi class are to be output.

Notes:

This command cannot be executed more than once on the same Java process. If you want to execute this command on the same Java process more than once, wait until the extended thread dump with statistics by Hitachi class has been output by the first execution of the jheapprof command before executing the command again.

When a Java process starts, it uses MailSlot to initialize communication. If initialization fails, the Java process outputs a message and cancels the processing.

This command can be executed by a user who is not the owner of the Java process whose process ID is specified in the argument.

When any of the following messages is output, an extended thread dump with statistics by Hitachi class has not been output.

No.	Error message	Description
1	<pre>usage: jheapprof [-f -i] [-class classname] [-explicit -noexplicit] [- fullgc -copygc -nogc] [-garbage - nogarbage] [-rootobjectinfo -</pre>	An invalid argument was specified in the command.

No.	Error message	Description		
1	<pre>norootobjectinfo] [-rootobjectinfost size] -p process-id jheapprof</pre>	An invalid argument was specified in the command.		
2	jheapprof: illegal option option	An invalid option was specified in the jheapprof command.		
3	<pre>process-ID: Now processing previous request, this request canceled</pre>	The process whose process ID was specified in the argument of the jheapprof command is already outputting statistics by Hitachi class.		
4	process-ID: Not owner	0 is specified as the process ID in the argument of the jheapprof command.		
5	jheapprof: can't create work file at temporary directory, this request canceled	An extended thread dump with statistics by Hitachi class could not be output, because the command does not have view or write permission for the temporary files folder. The reques to output an extended thread dump with statistics by Hitach class has been canceled.		
6	jheapprof: can't get temporary directory, this request canceled	An extended thread dump with statistics by Hitachi class could not be output, because the command was not able to fetch data from the temporary files folder. The request to output extended thread dump with statistics by Hitachi class has been canceled.		
7	jheapprof: please delete <i>name-of-file-that-could-not-be-deleted</i> in <i>full-path-of-file-that-could-not-be-deleted</i>	When the jheapprof command terminated, the internal file could not be deleted. Delete the indicated file on the indicated full path.		
8	jheapprof: unexpected error occurred: < <i>cause-of-error</i> >	An unexpected error occurred during execution of the jheapprof command. The following information might be displayed as the cause of the error: malloc systemcall fail (errno=Y): A shortage of work memory occurred. close systemcall fail (errno=Y): An object close error occurred.		
9	<pre>jheapprof: can't communicate with process <pre>/process-ID&gt;</pre></pre>	Communication failed due to an error because there was a problem in the process whose process ID was specified in the argument of the jheapprof command. Or, the process whose process ID was specified in the argument of the jheapprof command was not found.		
10	<process-id>: Timeout occurred. Java process not responding</process-id>	The process whose process ID was specified in the argume of the jheapprof command did not send a response to termination of the process for output of statistics by Hitac class within a specific amount of time.		

#### Return value

Return value	Description
0	The command terminated normally.
1	An error occurred in the command.
2	There was no response to termination of the process for output of statistics by Hitachi class within a specific amount of time.

#### Example

This example obtains an extended thread dump with statistics by Hitachi class of a Java program whose process ID is 8662:

jheapprof -p 8662

When this command executes, the following message is output asking whether an extended thread dump with statistics by Hitachi class is to be output:

Force VM to output HitachiJavaHeapProfile: ? (y/n)

To output an extended thread dump with statistics by Hitachi class, enter Y or Y. If any other character is entered, the command terminates without outputting an extended thread dump with statistics by Hitachi class.

Force VM to output HitachiJavaHeapProfile: ? (y/n)y

When an extended thread dump with statistics by Hitachi class is output, the running Java program displays the following message:

Writing Java core to javacore8662.030806215140.txt... OK

This Java program outputs an extended thread dump with the following file name in the current folder and then continues its processing:

javacoreprocess-ID.date-and-time.txt

#### 7.2.6 Notes about log files

• Message logs are not output until the settings of all properties related to log output (beginning with logger) have been read successfully from the system definition file (jplitslm.properties or jplitslmur.properties).

If settings related to log output cannot be read successfully, SLM does not output log information to log files. When SLM is unable to output information to event logs, it terminates.

- If an invalid value, such as an out-of-range value, is specified in a system definition file property related to log output (beginning with logger), SLM Manager or SLM UR assumes the default value and continues operation.
- If you change the value of a system definition file property related to log output (beginning with logger) after the applicable properties have been read from the system definition file successfully, the change does not take effect until the process has been restarted.
- If you change the value of any of the following system definition file properties, then before SLM is started you must move the folders and files that were output before the change was made to provide an empty system folder inside the message log output folder:
  - loggerCommandMessageFileCount
  - loggerCommandMessageMaxFileSize
  - loggerProcessCtrlMessageFileCount
  - loggerProcessCtrlMessageMaxFileSize
  - loggerWebSystemAnalysisMessageFileCount
  - loggerWebSystemAnalysisMessageMaxFileSize
- For output of log files, SLM uses the default character encoding of the host on which SLM is running. Characters that are not supported by the default character encoding of the host on which SLM is running will result in garbled strings in the log files (garbled information in the log files).

<sup>7.</sup> Troubleshooting



# Maintenance

This chapter explains SLM maintenance tasks, including backing up and restoring SLM definition files (system definition files and system configuration properties files), databases, and access logs, as well as migrating definition information and databases when replacing computers.

#### 8.1 Backing up and restoring definition files, databases, and access logs

To be able to restore definition files (system definition files and system configuration properties files), databases, and access logs in the event of a problem in SLM, you must first have made backups.

#### 8.1.1 Backing up the definition files

The following are the SLM definition files:

- System definition files: jplitslm.properties and jplitslmur.properties
- System configuration properties file: system\_config.properties

You must back up these definition files manually.

This subsection explains how to back up the definition files.

We recommend that you always back up the system definition files after you have edited them.

## (1) Before you start

• Verify that setup of the applicable SLM - Manager or SLM - UR has been completed.

For details about how to set up SLM - Manager, see 5.1.6 Setting up SLM - Manager; for details about how to set up SLM - UR, see 5.1.7 Setting up SLM - UR.

## (2) Procedure

To back up the definition files:

1. Copy the definition files to a desired location.

Copy the following definition files:

Definition files for SLM - Manager:

- SLM-Manager-installation-folder \ mgr \conf \jplitslm.properties
- SLM-Manager-installation-folder \ mgr \sdpengine \analysis  $N^{\#}$  \conf
- \system\_config.properties
- #: N is a number from 1 through 10.

Definition files for SLM - UR:

- *SLM-UR-installation-folder*\ur\conf\jp1itslmur.properties
- *SLM-UR-installation-folder*\ur\sdpengine\collector\conf\system\_config.properties
- *SLM-UR-installation-folder*\ur\sdpengine\collector2\conf \system\_config.properties
- SLM-UR-installation-folder \ ur \ sdpengine \ recorder \ conf \ system config.properties

When you have finished copying the definition files, the task of backing up the definition files is complete.

#### (3) Supplementary information

• You can back up the definition files regardless of whether SLM - Manager or SLM - UR services are running.

## (4) Related topics

• 8.1.4 Restoring the definition files

#### 8.1.2 Backing up the database

A command is used to back up a database.

This subsection explains how to back up a database.

We recommend that you back up your database periodically.

# (1) Before you start

- Verify that setup of SLM Manager and SLM UR has been completed.
- For details about how to set up SLM Manager, see 5.1.6 Setting up SLM Manager; for details about how to set up SLM UR, see 5.1.7 Setting up SLM UR.

# (2) Procedure

To back up the database:

- 1. Terminate all SLM URs that are connect to the SLM Manager whose database is to be backed up. For details about how to terminate SLM - UR, see 2.1.3 Terminating SLM - UR.
- 2. On the host on which the SLM Manager whose database is to be backed up is installed, from the Windows **Start** menu, select **Administrative Tools**, and then **Services**.
- 3. Stop the SLM Manager service SLM Manager Web Service (service name: JP1\_ITSLM\_MGR\_Web\_Service) of the SLM Manager whose database is to be backed up.
- 4. Stop the SLM Manager service SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service) of the SLM Manager whose database is to be backed up.
- 5. Execute the database backup command. Execute the following backup command:

jslmdbcopy absolute-path-of-backup-file

For details about the backup command, see 9.4 jslmdbcopy (backs up database) in 9. Commands.

- 6. Start the SLM Manager service SLM Manager Service that was stopped in step 4.
- 7. Start the SLM Manager service SLM Manager Web Service that was stopped in step 3.
- Start all SLM URs that were terminated in step 1.
   For details about how to start SLM UR, see 2.1.2 Starting SLM UR.

If the database backup command terminates normally and SLM - Manager and the SLM - URs start, the task of backing up the database is complete.

# (3) Supplementary information

If you cannot end the SLM - Manager service in a short cycle, as shown in the following operation example, we recommend using a combination of the database backup command and the export command of monitor information to back up the database:

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- Back up the database by using the jslmdbcopy command every month.
- Back up the database by using the jslmmgrexport command (by specifying the argument -t 7) every week.

If data stored in the product goes missing due to, for example, a system failure, perform the following procedure to restore the data:

- 1. Stop the monitoring of the monitoring target services.
- 2. Stop the following services:
  - SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service)
  - SLM Manager Web Service (service name: JP1\_ITSLM\_MGR\_Web\_Service)
- 3. Use the jslmdbrstr command to restore the file output by the recently executed jslmdbcopy command.
- 4. Start the services that were stopped in step 2.
- 5. Use the jslmmgrimport command to chronologically import the files that were output by the jslmmgrexport command, beginning with the first files output after the most recent execution of the jslmdbcopy command.
- 6. Start monitoring the monitoring target services.

#### (4) Related topics

• 8.1.5 Restoring the database

#### 8.1.3 Backing up the access logs

Access logs are backed up by executing the standard OS commands for copying files and folders.

This subsection explains how to back up the access logs.

#### (1) Before you start

Verify that the setup of SLM - Manager and SLM - UR has been completed.
 For details about how to set up SLM - Manager, see 5.1.6 Setting up SLM - Manager; for details about how to set up SLM - UR, see 5.1.7 Setting up SLM - UR.

#### (2) Procedure

- 1. Stop the service monitoring that is to be backed up and terminate SLM UR.
- 2. Using the standard OS commands for copying files and folders, make a backup copy of the http folder that is in the folder specified for accessLogFilePath in *SLM-UR-installation-folder*\ur\conf \jplitslmur.properties.
- 3. Restart SLM UR.

For details about how to start SLM - UR, see 2.1.2 Starting SLM - UR.

Once SLM - UR starts, the task of backing up the access logs is complete.

## (3) Related topics

• 8.1.7 Restoring the access logs

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#### 8.1.4 Restoring the definition files

If you have a backup of the definition files (system definition files and system configuration properties file) and a problem occurs in SLM itself, you can restore the environment to its status before the problem occurred.

You must restore definition files manually.

This subsection explains how to restore the definition files.

# (1) Before you start

• Verify that you have backed up the SLM - Manager or SLM - UR system definition files that are to be restored.

## (2) Procedure

To restore the definition files:

- 1. Terminate the SLM Manager or SLM URs whose definition files are to be restored.
  - If the definition files to be restored belong to SLM Manager, terminate all SLM URs connected to SLM Manager and then terminate SLM Manager.
     For details about how to terminate SLM UR, see 2.1.3 Terminating SLM UR; for details about how to terminate SLM UR, see 2.1.4 Terminating SLM Manager.
  - If the definition files to be restored belong to an SLM UR, terminate only that SLM UR. For details about how to terminate SLM - UR, see 2.1.3 Terminating SLM - UR.
- 2. Copy the backup of the definition files to the correct folders to overwrite the existing data.

The copy destinations are as follows:

If the definition files to be restored belong to SLM - Manager:

- *SLM-Manager-installation-folder*\mgr\conf\jplitslm.properties
- SLM-Manager-installation-folder \ mgr \ sdpengine \ analysis  $N^{\#}$  \ conf
- \system\_config.properties

#: N is a number from 1 through 10.

If the definition files to be restored belongs to an SLM - UR:

- *SLM-UR-installation-folder*\ur\conf\jplitslmur.properties
- *SLM-UR-installation-folder*\ur\ sdpengine\collector\conf\system\_config.properties
- *SLM-UR-installation-folder*\ur\ sdpengine\collector2\conf
- \system\_config.properties
- *SLM-UR-installation-folder*\ur\sdpengine\recorder\conf\system\_config.properties

3. Start the SLM - Manager and SLM - URs whose definition files were restored.

- If the restored definition files belong to SLM Manager, start SLM Manager that was terminated in step 1 and then start the SLM URs that were also terminated in step 1.
   For details about how to start SLM Manager, see 2.1.1 Starting SLM Manager; for details about how to start SLM UR, see 2.1.2 Starting SLM UR.
- If the restored definition files belong to an SLM UR, start only that SLM UR. For details about how to start SLM - UR, see 2.1.2 Starting SLM - UR.

If SLM - Manager and SLM - URs with restored definition files start, the task of restoring the definition files is complete.

#### (3) Related topics

- 8.3.1 Migrating the SLM Manager definition information
- 8.3.2 Migrating the SLM UR definition information

#### 8.1.5 Restoring the database

If you have a backup of the database and a problem occurs in SLM itself, you can restore the environment to its status before the problem occurred.

A command is used to restore a database.

This subsection explains how to restore a database.

#### (1) Before you start

• Verify that you have backed up the database.

#### (2) Procedure

To restore the database:

- 1. Terminate all SLM URs connected to the SLM Manager whose database is to be restored. For details about how to terminate SLM - UR, see 2.1.3 Terminating SLM - UR.
- 2. On the host on which the SLM Manager whose database is to be restored is installed, from the Windows **Start** menu, select **Administrative Tools**, and then **Services**.
- 3. Stop the SLM Manager service SLM Manager Web Service (service name: JP1 ITSLM MGR Web Service) of the SLM Manager whose database is to be restored.
- 4. Stop the SLM Manager service SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service) of the SLM Manager whose database is to be restored.
- 5. Execute the database restore command. Execute the following restore command: jslmdbrstr absolute-path-of-backup-file For details about the restore command, see 9.5 jslmdbrstr (restores database) in 9. Commands.
- 6. Start the SLM Manager service SLM Manager Service that was stopped in step 4.
- 7. Start the SLM Manager service SLM Manager Web Service that was stopped in step 3.
- Start all SLM URs that were terminated in step 1.
   For details about how to start SLM UR, see 2.1.2 Starting SLM UR.

If the database restore command terminates normally and SLM - Manager and SLM - URs start, the task of restoring the database is complete

## (3) Related topics

• 8.3.3 Migrating the database

# 8.1.6 Synchronizing the environment setup for a restored database (working with Performance Management)

If SLM is linked with Performance Management, when you have restored the SLM database or the Performance Management database, you must ensure that these databases are synchronized.

This subsection explains the task that must be performed when the SLM database or the Performance Management database has been restored.

#### (1) Before you start

• Verify that you have backed up the SLM database.

#### (2) Procedure

The procedure for when the SLM database has been restored is not the same as the procedure for when the Performance Management database has been restored. If you have restored the Performance Management database, skip step 5.

To synchronize the environment setup for a restored database:

1. If PFM - Manager is not running, start it.

For details about how to start PFM - Manager, see the SLM/Performance Management User's Guide.

If SLM - Manager is not running, start it.
 For details about how to start SLM - Manager, see 2.1.1 Starting SLM - Manager.

3. Log in to SLM - Manager.

For details about how to log in, see 2.2.1 Logging in to SLM - Manager.

4. In the Settings window, display the **Configuration information settings** area, and then click the **Refresh configuration information** button.

The configuration information for SLM - Manager and PFM - Manager are synchronized.

Configuration information settings					
Service group Group	01 Service	Service01	Refresh configuration information		

5. If you have restored the SLM database, display the **Monitor settings** area and check the settings to see if the database has been restored correctly. If any settings are not correct, correct them.

Check the following:

- Whether the items to be monitored are selected correctly and whether the check boxes for the items that are not to be monitored are cleared
- Whether the threshold and predictive error detection settings are correct for the items that are to be monitored

If any settings are not correct, correct them, and then click the Save button.

6. In the **Start/Stop monitor** area, synchronize the monitoring status (started or stopped) between SLM and Performance Management.

Check all the monitored services whose monitoring is your responsibilities and determine which need monitoring and which do not, then synchronize their monitoring statuses. Perform the following tasks:

• Monitored services that need to be monitored

In the **Start/Stop monitor** area, click the **Start** button to start monitoring. If monitoring has already started, click the **Stop** button to stop monitoring, and then click the **Start** button to start monitoring. This will cause Performance Management's monitoring settings to become synchronized with SLM's most recent monitoring settings.

• Monitored services that do not need to be monitored

In the **Start/Stop monitor** area, click the **Stop** button to stop monitoring. If the monitoring is already stopped, click the **Start** button to start monitoring, and then click the **Stop** button to stop monitoring. As a result, monitoring stops in both SLM and Performance Management.

The task of synchronizing the environment setup for SLM and Performance Management databases is complete.

#### 8.1.7 Restoring the access logs

Access logs are restored by executing the standard OS commands for copying files and folders.

This subsection explains how to restore the access logs.

## (1) Before you start

• Verify that you have backed up the access logs.

#### (2) Procedure

- 1. Stop the service monitoring that was backed up and terminate SLM UR.
- 2. Using the standard OS commands for copying files and folders, copy the http folder that was backed up into the folder specified for accessLogFilePath in SLM-UR-installation-folder\ur\conf \jplitslmur.properties.

For details about backing up the access logs, see 8.1.3 Backing up the access logs.

3. Restart SLM - UR. For details about how to start SLM - UR, see 2.1.2 Starting SLM - UR.

Once SLM - UR starts, the task of restoring the access logs is complete.

#### 8.2 Cleaning up the database

If a lot of registration and deletion of monitored services has occurred in SLM or errors have occurred during database processing, unneeded data might remain in the database. If a space shortage occurs in the database, you might need to secure more free space by deleting this unneeded data (cleaning up the database).

This section explains how to clean up the database.

#### 8.2.1 Before you start

- Verify that setup of SLM Manager has been completed.
   For details about how to set up SLM Manager, see 5.1.6 Setting up SLM Manager.
- Verify that SLM Manager is running or the following services are running:
  - Service SLM Manager DB Service (service name: HiRDBEmbeddedEdition JL0)
  - Service SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service)

For details about how to start SLM - Manager, see 2.1.1 Starting SLM - Manager.

#### 8.2.2 Procedure

To clean up the database:

1. On the host on which the SLM - Manager whose database is to be cleaned up is installed, execute the database cleanup command.

Execute the following cleanup command:

jslmmgrdbcleanup

For details about the cleanup command, see 9.8 jslmmgrdbcleanup (cleans up database) in 9. Commands.

If the cleanup command terminates normally, the task of cleaning up the database is complete.

#### 8.3 Migrating definition information and databases

You can migrate definition information and databases to a different host than the one on which SLM is installed.

This section explains how to migrate SLM definition information and databases using the backup and restore processing that was explained in 8.1 Backing up and restoring definition files, databases, and access logs.

#### 8.3.1 Migrating the SLM - Manager definition information

This subsection explains how to migrate the SLM - Manager definition information from the host on which SLM - Manager is installed to another host.

#### (1) Before you start

Verify that you have backed up the definition files (system definition files and system configuration properties file) for the SLM - Manager whose definition files are to be migrated.

For details about how to back up the definition files, see 8.1.1 Backing up the definition files.

On the target host, install and set up SLM - Manager.
 For details about how to install and set up SLM - Manager, see 5.1.5 Installing SLM and 5.1.6 Setting up SLM - Manager.

#### (2) Procedure

To migrate the SLM - Manager definition information:

1. Terminate all SLM - URs connected to the SLM - Manager on the host to which the definition information is to be migrated.

For details about how to terminate SLM - UR, see 2.1.3 Terminating SLM - UR.

- 2. On the target host to which the definition information is to be migrated, from the Windows **Start** menu, select **Administrative Tools**, and then **Services**.
- 3. On the target host to which the definition information is to be migrated, stop the SLM Manager service SLM Manager Web Service (service name: JP1\_ITSLM\_MGR\_Web\_Service).
- 4. On the target host to which the definition information is to be migrated, stop the SLM Manager service SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service).
- 5. Copy the backup of the definition files to the correct folders on the target host.
  - Copy the backup to the following locations:
  - SLM-Manager-installation-folder\mgr\conf\jplitslm.properties

• *SLM-Manager-installation-folder*\mgr\sdpengine\analysis*N*<sup>#</sup>\conf \system config.properties

#: N is a number from 1 through 10.

6. Of the restored definition files, edit the jplitslm.properties system definition file.

In the jplitslm.properties system definition file, edit the managerHost and rmiManagerPort properties as appropriate for the migration target.

For details about how to edit the system definition file, see 5.6.1 Editing the system definition files.

7. Terminate the SLM - URs that are connected to the source SLM - Manager from which definition information was migrated.

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For details about the termination method, see 2.1.3 Terminating SLM - UR.

8. Edit the jplitslmur.properties system definition files for the SLM - URs that were terminated in step 1. In these system definition files, edit the managerHost and rmiManagerPort properties as appropriate for the migration target of SLM - Manager.
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For details about how to edit the system definition files, see 5.6.1 Editing the system definition files.

- 9. Terminate the source SLM Manager from which definition information was migrated. For details about the termination method, see 2.1.4 Terminating SLM - Manager.
- 10. Start the SLM Manager service SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service) that was stopped in step 4.
- 11. Start the SLM Manager service SLM Manager Web Service (service name: JP1\_ITSLM\_MGR\_Web\_Service) that was stopped in step 3.
- 12. Start all SLM URs that were terminated in step 1.For details about how to start SLM UR, see 2.1.2 Starting SLM UR.
- If SLM Manager and the SLM URs start, the task of migrating the SLM Manager definition information is complete.

#### (3) Next task

• 8.3.3 Migrating the database

#### (4) Related topics

- 8.3.2 Migrating the SLM UR definition information
- 8.6.1 Changing SLM Manager's RMI communication port number
- 8.6.3 Changing the listen port number of the SLM Manager embedded database
- 8.6.4 Changing the listen port number of the SLM Manager embedded Web server
- 8.6.5 Changing the port number of the internal communications port of the SLM Manager embedded Web server
- 8.6.6 Changing the port number of the completion-message receiving port of the SLM Manager embedded Web server

#### 8.3.2 Migrating the SLM - UR definition information

This subsection explains how to migrate the SLM - UR definition information from the host on which SLM - UR is installed to another host.

#### (1) Before you start

• Verify that you have backed up the definition files (system definition files and system configuration properties file) for the SLM - UR whose definition files are to be migrated.

For details about how to back up the definition files, see 8.1.1 Backing up the definition files.

On the target host, install and set up SLM - UR.
 For details about how to install and set up SLM - UR, see 5.1.5 Installing SLM and 5.1.7 Setting up SLM - UR.

## (2) Procedure

To migrate the SLM - UR definition information:

- 1. Terminate SLM UR on the target host to which the definition information is to be migrated. For details about how to terminate SLM - UR, see 2.1.3 Terminating SLM - UR.
- 2. Copy the backup of the definition files to the correct folders on the target host. Copy the backup to the following locations:
  - *SLM-UR-installation-folder*\ur\conf\jp1itslmur.properties
  - *SLM-UR-installation-folder*\ur\sdpengine\collector\conf\system\_config.properties
  - *SLM-UR-installation-folder*\ur\sdpengine\collector2\conf\system config.properties
  - *SLM-UR-installation-folder*\ur\sdpengine\recorder\conf\system\_config.properties
- 3. Of the restored definition files, edit the jplitslmur.properties system definition file. In the jplitslmur.properties system definition file, edit the following properties as appropriate for the migration target:
  - managerHost
  - rmiManagerPort
  - urHost
  - rmiUrPort
  - urNetworkInterfaceNumber

For details about how to edit the system definition file, see 5.6.1 Editing the system definition files.

- 4. Terminate the SLM UR on the source host from which the definition information was migrated. For details about the termination method, see 2.1.3 Terminating SLM - UR.
- 5. Start SLM UR on the target host to which the definition information was migrated. For details about how to start SLM - UR, see 2.1.2 Starting SLM - UR.

If SLM - UR starts, the task of migrating the SLM - UR definition information is complete.

#### (3) Related topics

- 8.3.1 Migrating the SLM Manager definition information
- 8.6.2 Changing SLM UR's RMI communication port number

#### 8.3.3 Migrating the database

This subsection explains how to migrate the database from a host on which SLM is installed to another host.

## (1) Before you start

- Verify that you have backed up the database. For details about how to back up the database, see 8.1.2 Backing up the database.
- Copy the database backup files to a desired location on the target host.
- Install and set up SLM Manager on the target host.

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For details about how to install and set up SLM - Manager, see 5.1.5 Installing SLM and 5.1.6 Setting up SLM - Manager.

## (2) Procedure

To migrate the database:

- 1. Terminate all SLM URs connected to the SLM Manager on the host to which the database is to be migrated. For details about how to terminate SLM - UR, see 2.1.3 Terminating SLM - UR.
- 2. On the target host to which the database is to be migrated, from the Windows **Start** menu, select **Administrative Tools**, and then **Services**.
- 3. On the target host to which the database is to be migrated, stop the SLM Manager service SLM Manager Web Service (service name: JP1\_ITSLM\_MGR\_Web\_Service).
- 4. On the target host to which the database is to be migrated, stop the SLM Manager service SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service).
- 5. On the target host to which the database is to be migrated, execute the database restore command. Execute the following restore command:

jslmdbrstr absolute-path-of-backup-file

For details about the restore command, see 9.5 jslmdbrstr (restores database) in 9. Commands.

- 6. Start the SLM Manager service SLM Manager Service that was stopped in step 4.
- 7. Start the SLM Manager service SLM Manager Web Service that was stopped in step 3.
- Start all SLM URs that were terminated in step 1.
   For details about how to start SLM UR, see 2.1.2 Starting SLM UR.

#### 8.3.4 Migrating the service monitor information in the database

The database on the host on which SLM - Manager is installed contains various data needed for monitoring monitored services.

If you migrate your system from a test environment to an actual operating environment or if you replace your machine due to a change in the system configuration, you must migrate the *service monitor information* (*monitored service management information and service performance*) that is stored in the database.

The management information for each monitored service that is included in the service monitor information is as follows:

- Name of the monitored service
- Name of the service group to which the monitored service belongs
- Host name and IP address of the Web server that provides the monitored service
- Relative URI of the monitored service
- IP address of the SLM UR that acquires service performance
- Monitoring item settings for the monitored service (including Web transactions)
- Business group definition information (business group definition information for SLM Manager that is associated with the monitored service; this information is applicable when SLM is linked with Performance Management)

- Availability monitoring information (availability monitoring information collected by PFM Agent for Service Response that is associated with the monitored service; this information is applicable when SLM is linked with Performance Management)
- Report template information

This subsection explains how to migrate the service monitor information in the database from the host on which SLM - Manager is installed to another host.

## (1) Before you start

- Verify that SLM Manager is running or the following services are running on the target host:
  - Service SLM Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0)
  - Service SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service)

For details about how to start SLM - Manager, see 2.1.1 Starting SLM - Manager.

On the target host, install and set up SLM - Manager.
 For details about how to install and set up SLM - Manager, see 5.1.5 Installing SLM and 5.1.6 Setting up SLM - Manager.

#### (2) Procedure

To migrate the service monitor information in the database:

1. On the source host, execute the service monitor information export command to create an export file.

Execute the following export command:

```
jslmmgrexport [ -g service-group-name -s service-name ]
```

-t { export-period | all | none }

```
-o output-file-name
```

```
[ -f ]
```

For details about the export command, see 9.9 jslmmgrexport (exports service monitor information) in 9. Commands.

2. Copy the export file to the target host.

Copy the export file to a desired location (using any method of copying).

- 3. On the target host, from the Windows Start menu, select Administrative Tools, and then Services.
- 4. Start the SLM Manager service SLM Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0).
- 5. Start the SLM Manager service SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service).
- 6. On the target host, execute the service monitor information import command to import the export file copied in step 2 (*import-data-file-name*).

Execute the following import command:

jslmmgrimport -i import-data-file-name

[ -g service-group-name -s service-name ]

[ -m [ IP-address-of-Web-server IP-address-of-SLM - UR ] ]

```
[-p]
```

For details about the import command, see 9.10 jslmmgrimport (imports service monitor information) in 9. Commands.

```
8. Maintenance
```

If the import command terminates normally, the task of migrating the service monitor information in the database is complete.

# (3) Supplementary information

• For the information listed below that is used when SLM is linked with Performance Management, the jslmmgrimport command processing depends on whether the migration target already contains the data to be imported.

No.	Information to be imported	Processing		
		The migration target contains the data to be imported	The migration target does not contain the data to be imported	
1	Business group definition information	Updates the business group definition information with the imported data. The check box settings for business groups are updated only if the check boxes are cleared in the existing data (if check boxes are selected in the exiting data, those check box settings are not updated).	Imports the data as is.	
2	Availability monitoring information	Updates the contents of measurement condition labels while maintaining the selection status of the availability monitoring information.	Imports the data as is and keeps the availability monitoring information unselected.	
3	Report template information	Updates the report template information with the imported data regardless of the default template or user-created templates.	Imports the data as is.	

Table 8-1: jslmmgrimport command processing

• If performance data is migrated from SLM version 09-51 or earlier, the monitoring item names are displayed as shown below.

#### Table 8-2: Monitoring item names when performance data is migrated

No.	SLM version					
	Monitoring item name in version 09-51	Monitoring item name in version 10-00				
1	Measured	Measured (max)				
2	SLO threshold value	Threshold				
3	Baseline	Baseline				

This section describes how to change the configuration of SLM - Manager from the single-manager configuration to the master/slave configuration, and vice versa.

#### 8.4.1 Changing from the single-manager configuration to the master/ slave configuration

This section explains how to change from the single-manager configuration to the master/slave configuration.

# (1) Procedure

#### Procedure

1. For SLM - Manager of the single-manager configuration, use the jslmmgrexport command to export the data of the database.

For details about the jslmmgrexport command, see 9.9 jslmmgrexport (exports service monitor information) in 9. Commands.

- 2. Use the jslmmgrexport command to export the data of the monitored services to be inherited to SLM Manager of the master/slave configuration.
- 3. Perform an unsetup of SLM Manager in the single-manager configuration.
- 4. To prevent the properties file from the single-manager configuration from being inherited, delete the following system definition file. SLM-Manager-installation-folder\mgr\conf\jplitslm.properties
- Creates a setup options file for the master/slave configuration.
   For details about the setup options file, see 9.12 jslmmgrsetup (sets up SLM Manager) in 9. Commands.
- 6. Set up the master and slave instances of SLM Manager and SLM Manager by using a new configuration that will become the master/slave configuration.
- 7. Set up SLM UR again to match the configuration of SLM Manager.
- 8. Import the data exported in steps 1 and 2 into the master instance of SLM Manager or the slave instance of SLM Manager.

The data to be imported must match the configuration of SLM - Manager and SLM - UR as set up in steps 4 and 5.

9. When the service to be imported is in the service monitoring configuration, import the service to the instance of SLM - Manager to which the instance of SLM - UR capable of collecting HTTP packets of the corresponding service is connected.

#### (2) Supplementary information

• When the IP address of SLM - UR has been changed, make changes with the -m option of the jslmmgrimport command when importing data.

For details about the jslmmgrimport command, see 9.10 jslmmgrimport (imports service monitor information) in 9. Commands.

8. Maintenance

#### 8.4.2 Changing from the master/slave configuration to the singlemanager configuration

This section explains how to change from the master/slave configuration to the single-manager configuration.

# (1) Procedure

#### Procedure

1. Use the jslmmgrexport command to export the data of monitored services from the master and slave instances of SLM - Manager in the master/slave configuration, to be inherited by an instance of SLM - Manager in the single-manager configuration.

For details about the jslmmgrexport command, see 9.9 jslmmgrexport (exports service monitor information) in 9. Commands.

- 2. Perform an unsetup of all instances of SLM Manager (master and slave) in the master/slave configuration.
- 3. To prevent the properties file from the time of the master/slave configuration from being inherited, delete the following system definition file.

*SLM-Manager-installation-folder*\mgr\conf\jplitslm.properties

- Creates a setup options file for the single-manager configuration.
   For details about the setup options file, see 9.12 jslmmgrsetup (sets up SLM Manager) in 9. Commands.
- 5. Set up SLM Manager to the single-manager configuration.
- 6. Set up SLM UR again to match the configuration of SLM Manager.
- 7. Import the data exported in step 1 into the instance of SLM Manager that was set up in steps 3 and 4.

## (2) Supplementary information

• When the IP address of SLM - UR has been changed, make changes with the -m option of the jslmmgrimport command when importing data.

For details about the jslmmgrimport command, see 9.10 jslmmgrimport (imports service monitor information) in 9. Commands.

#### 8.5 Renaming hosts

This section explains how to rename the hosts on which SLM - Manager and SLM - UR are installed.

#### 8.5.1 Renaming the SLM - Manager host

This subsection explains how to rename the SLM - Manager host.

Note that step 1 is required when SLM is linked with Performance Management. If your SLM is not linked with Performance Management, start with step 2.

#### (1) Before you start

If the host on which PFM - Manager is installed differs from the host on which SLM - Manager is installed, specify
the new host name for SLM - Manager in the PFM - Manager definition beforehand, and start PFM - Manager. If
PFM - Manager and SLM - Manager are installed on the same host, there is no need to specify the new host name
in the PFM - Manager definition beforehand, because the new host name is specified in the procedure described
below.

To specify the PFM - Manager definition, use PFM - Web Console's Master Manager properties. See the description of the configuration method for linking with SLM in the *SLM/Performance Management User's Guide*.

#### (2) Procedure

To rename the SLM - Manager host:

1. If PFM - Manager and SLM - Manager are installed on the same host, terminate the PFM - Manager that is linked with the SLM - Manager whose host is to be renamed.

For details about how to terminate PFM - Manager, see the SLM/Performance Management User's Guide.

- 2. Terminate all SLM URs connected to the SLM Manager on the host that is to be renamed. For details about how to terminate SLM - UR, see 2.1.3 Terminating SLM - UR.
- Terminate the SLM Manager whose host is to be renamed.
   For details about how to terminate SLM Manager, see 2.1.4 Terminating SLM Manager.
- 4. Rename the host.
- 5. Specify the new host name in the managerHost property in the jplitslm.properties system definition file for the SLM Manager.
- 6. Specify the new host name in the managerHost property in the jplitslmur.properties system definition file for each SLM UR.
- Start the SLM Manager that was terminated in step 3.
   For details about how to start SLM Manager, see 2.1.1 Starting SLM Manager.
- 8. Start all SLM URs that were terminated in step 2.

For details about how to start SLM - UR, see 2.1.2 Starting SLM - UR.

If the host on which PFM - Manager is installed differs from the host on which SLM - Manager is installed, the task of renaming the host is complete. If PFM - Manager and SLM - Manager are installed on the same host, go to step 9.

9. When PFM - Manager and SLM - Manager are installed on the same host, start the PFM - Manager that was terminated in step 1.

8. Maintenance

For details about how to start PFM - Manager, see the SLM/Performance Management User's Guide.

10. When PFM - Manager and SLM - Manager are installed on the same host, specify the new host name for SLM - Manager in the PFM - Manager definitions.

To specify the PFM - Manager definition, use PFM - Web Console's Master Manager properties. See the description of the configuration method for linking with SLM in the *SLM/Performance Management User's Guide*.

#### 8.5.2 Renaming the SLM - UR host

This subsection explains how to rename the SLM - UR host.

#### (1) Procedure

To rename the SLM - UR host:

- 1. Terminate the SLM UR whose host is to be renamed. For details about how to terminate SLM - UR, see 2.1.3 Terminating SLM - UR.
- 2. Rename the host.
- 3. Create the jplitslm\_setup.opt options file needed for setting up SLM UR and specify the new host name in the ur host definition item.

The absolute path for the storage of the created options file, including the options file name (any name) at the storage, must not exceed 255 bytes.

4. Execute the SLM - UR setup command.

Execute the following setup command:

*SLM-UR-installation-folder*\ur\bin\jslmursetup *absolute-path-of-options-file* 

For details about the setup command, see 9.19 jslmursetup (sets up SLM - UR) in 9. Commands.

Start the SLM - UR that was terminated in step 1.
 For details about how to start SLM - UR, see 2.1.2 Starting SLM - UR.

# 8.5.3 Renaming the PFM - Manager host specified in SLM (working with Performance Management)

This subsection explains how to change settings in SLM when the host on which PFM - Manager is installed is renamed.

#### (1) Procedure

To rename the PFM - Manager host specified in SLM:

1. Stop all monitored services.

For details about how to stop monitoring, see 4.2.2 Stopping monitoring.

2. Rename the PFM - Manager host.

For details about how to rename the PFM - Manager host, see the description of how to rename the PFM - Manager host in the *SLM/Performance Management Planning and Configuration Guide*.

JP1/Service Level Management Description

# Important

When you rename the PFM - Manager host, the following are also involved:

- PFM Manager host
- PFM Web Console host
- Monitoring agent's host
- Monitoring console

#### 3. Stop the following SLM - Manager services:

- SLM Manager Web Service (service name: JP1\_ITSLM\_MGR\_Web\_Service)
- SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service)

Stop SLM - Manager Web Service first and then stop SLM - Manager Service. There is no need to stop SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0).

For details about how to terminate SLM - Manager, see 2.1.4 Terminating SLM - Manager.

- 4. Specify the new PFM Manager host name in the pfmManagerHost property of the jplitslm.properties system definition file for SLM Manager.
- 5. Start the following SLM Manager services that were stopped in step 3:
  - **SLM Manager Service** (service name: JP1\_ITSLM\_MGR\_Service)
  - SLM Manager Web Service (service name: JP1\_ITSLM\_MGR\_Web\_Service)

Start SLM - Manager Service first and then start SLM - Manager Web Service.

For details about how to start SLM - Manager, see 2.1.1 Starting SLM - Manager.

6. Start monitoring the monitored services that were stopped in step 1.

#### 8.6 Changing port numbers

This section explains how to change port numbers used in SLM.

#### 8.6.1 Changing SLM - Manager's RMI communication port number

This subsection explains how to change SLM - Manager's RMI communication port number.

#### (1) Procedure

To change SLM - Manager's RMI communication port number:

- 1. Terminate all SLM URs connected to the SLM Manager whose RMI communication port number is to be changed. For details about how to terminate SLM - UR, see 2.1.3 Terminating SLM - UR.
- 2. Terminate the SLM Manager on the host whose RMI communication port number is to be changed. For details about how to terminate SLM - Manager, see 2.1.4 Terminating SLM - Manager.
- 3. Create the jplitslm\_setup.opt options file needed for setting up SLM Manager and specify the new RMI communication port number for the SLM Manager in the manager\_port definition item. The absolute path of the storage of the created options file, including the options file name (any name) at the storage,

must not exceed 255 bytes.

4. Create the jplitslm\_setup.opt options file needed for setting up SLM - UR and specify the new RMI communication port number for the SLM - Manager in the manager\_port definition item.

The absolute path of the storage of the created options file, including the options file name (any name) at the storage, must not exceed 255 bytes. If you create this options file on the same host as for SLM - Manager, store it at a different location from the file created in step 3.

5. Execute the SLM - Manager setup command.

Execute the following setup command:

*SLM-Manager-installation-folder*\mgr\bin\jslmmgrsetup *absolute-path-of-options-file* 

For details about the setup command, see 9.12 jslmmgrsetup (sets up SLM - Manager) in 9. Commands.

6. Execute the SLM - UR setup command.

Execute the following setup command:

SLM-UR-installation-folder/ur/bin/jslmursetup absolute-path-of-options-file

For details about the setup command, see 9.19 jslmursetup (sets up SLM - UR) in 9. Commands.

- 7. On the host whose RMI communication port number has been changed, change the port number release setting in the firewall.
- Start the SLM Manager that was terminated in step 2.
   For details about how to start SLM Manager, see 2.1.1 Starting SLM Manager.
- Start all SLM URs that were terminated in step 1.
   For details about how to start SLM UR, see 2.1.2 Starting SLM UR.

#### (2) Related topics

• A. List of Port Numbers Used by SLM

### 8.6.2 Changing SLM - UR's RMI communication port number

This subsection explains how to change SLM - UR's RMI communication port number.

# (1) Procedure

To change SLM - UR's RMI communication port number:

- 1. Terminate the SLM UR whose RMI communication port number is to be changed. For details about how to terminate SLM - UR, see 2.1.3 Terminating SLM - UR.
- 2. Create the jplitslm\_setup.opt options file needed for setting up SLM UR and specify the new RMI communication port number for the SLM UR in the ur\_port definition item.

The absolute path of the storage of the created options file, including the options file name (any name) at the storage, must not exceed 255 bytes.

- 3. Execute the SLM UR setup command. Execute the following setup command: SLM-UR-installation-folder\ur\bin\jslmursetup absolute-path-of-options-file For details about the setup command, see 9.19 jslmursetup (sets up SLM - UR) in 9. Commands.
- 4. On the host whose RMI communication port number has been changed, change the port number release setting in the firewall.
- Start the SLM UR that was terminated in step 1.
   For details about how to start SLM UR, see 2.1.2 Starting SLM UR.

#### (2) Related topics

• A. List of Port Numbers Used by SLM

# 8.6.3 Changing the listen port number of the SLM - Manager embedded database

This subsection explains how to change the listen port number of the SLM - Manager embedded database.

## (1) Procedure

To change the listen port number of the SLM - Manager embedded database:

1. Terminate all SLM - URs connected to the SLM - Manager whose embedded database listen port number is to be changed.

For details about how to terminate SLM - UR, see 2.1.3 Terminating SLM - UR.

- 2. Terminate the SLM Manager on the host whose embedded database listen port number is to be changed. For details about how to terminate SLM - Manager, see 2.1.4 Terminating SLM - Manager.
- 3. Create the jplitslm\_setup.opt options file needed for setting up SLM Manager and specify the new embedded database listen port number in the hdb\_port definition item. The absolute path of the storage of the created options file, including the options file name (any name) at the storage, must not exceed 255 bytes.
- 4. Execute the SLM Manager setup command.

Execute the following setup command:

*SLM-Manager-installation-folder*\mgr\bin\jslmmgrsetup *absolute-path-of-options-file* For details about the setup command, see 9.12 jslmmgrsetup (sets up SLM - Manager) in 9. Commands.

- Start the SLM Manager that was terminated in step 2.
   For details about how to start SLM Manager, see 2.1.1 Starting SLM Manager.
- 6. Start all SLM URs that were terminated in step 1.For details about how to start SLM UR, see 2.1.2 Starting SLM UR.

## (2) Related topics

• A. List of Port Numbers Used by SLM

# 8.6.4 Changing the listen port number of the SLM - Manager embedded Web server

This subsection explains how to change the listen port number of the SLM - Manager embedded Web server.

## (1) Procedure

To change the listen port number of the SLM - Manager embedded Web server:

- 1. From the Windows Start menu, select Administrative Tools, and then Services.
- 2. Stop the SLM Manager service SLM Manager Web Service (service name: JP1\_ITSLM\_MGR\_Web\_Service).
- 3. Create the jplitslm\_setup.opt options file needed for setting up SLM Manager and specify the new embedded Web server listen port number in the psb Listen definition item.

The absolute path of the storage of the created options file, including the options file name (any name) at the storage, must not exceed 255 bytes.

4. Execute the SLM - Manager setup command.

Execute the following setup command:

SLM-Manager-installation-folder\mgr\bin\jslmmgrsetup absolute-path-of-options-file

For details about the setup command, see 9.12 jslmmgrsetup (sets up SLM - Manager) in 9. Commands.

- 5. On the host on which the embedded Web server port number was changed, change the port number release setting in the firewall.
- 6. Start the SLM Manager service SLM Manager Web Service that was stopped in step 2.

# (2) Related topics

• A. List of Port Numbers Used by SLM

JP1/Service Level Management Description

# 8.6.5 Changing the port number of the internal communications port of the SLM - Manager embedded Web server

This subsection explains how to change the port number of the internal communications port of the SLM - Manager embedded Web server.

## (1) Procedure

To change the internal communications port number of the SLM - Manager embedded Web server:

1. Terminate all SLM - URs connected to the SLM - Manager whose embedded Web server listen port number is to be changed.

For details about how to terminate SLM - UR, see 2.1.3 Terminating SLM - UR.

- 2. From the Windows Start menu, select Administrative Tools, and then Services.
- 3. Stop the SLM Manager service SLM Manager Web Service (service name: JP1\_ITSLM\_MGR\_Web\_Service).
- 4. Stop the SLM Manager service SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service).
- 5. Create the jplitslm\_setup.opt options file needed for setting up the SLM Manager and specify the new embedded Web server internal communications port number in the psb\_connector\_port definition item. The absolute path of the storage of the created options file, including the options file name (any name) at the storage, must not exceed 255 bytes.
- 6. Execute the SLM Manager setup command.
  Execute the following setup command: SLM-Manager-installation-folder\mgr\bin\jslmmgrsetup absolute-path-of-options-file
  For details about the setup command, see 9.12 jslmmgrsetup (sets up SLM - Manager) in 9. Commands.
- 7. Start the SLM Manager service SLM Manager Service that was stopped in step 4.
- 8. Start the SLM Manager service SLM Manager Web Service that was stopped in step 3.
- Start the SLM UR that was terminated in step 1.
   For details about how to start SLM UR, see 2.1.2 Starting SLM UR.

#### (2) Related topics

• A. List of Port Numbers Used by SLM

# 8.6.6 Changing the port number of the completion-message receiving port of the SLM - Manager embedded Web server

This subsection explains how to change the port number of the completion-message receiving port of the SLM - Manager embedded Web server.

#### (1) Procedure

To change the completion-message receiving port number of the SLM - Manager embedded Web server:

1. Terminate all SLM - URs connected to the SLM - Manager whose embedded Web server completion-message receiving port number is to be changed.

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JP1/Service Level Management Description

For details about how to terminate SLM - UR, see 2.1.3 Terminating SLM - UR.

- 2. From Windows Start menu, select Administrative Tools, and then Services.
- 3. Stop the SLM Manager service SLM Manager Web Service (service name: JP1\_ITSLM\_MGR\_Web\_Service).
- 4. Stop the SLM Manager service SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service).
- 5. Create the jplitslm\_setup.opt options file needed for setting up the SLM Manager and specify the new embedded Web server completion-message receiving port number in the psb\_shutdown\_port definition item. The absolute path of the storage of the created options file, including the options file name (any name) at the storage, must not exceed 255 bytes.
- 6. Execute the SLM Manager setup command. Execute the following setup command: SLM-Manager-installation-folder\mgr\bin\jslmmgrsetup absolute-path-of-options-file For details about the setup command, see 9.12 jslmmgrsetup (sets up SLM - Manager) in 9. Commands.
- 7. Start the SLM Manager service SLM Manager Service that was stopped in step 4.
- 8. Start the SLM Manager service SLM Manager Web Service that was stopped in step 3.
- Start the SLM UR that was terminated in step 1.
   For details about how to start SLM UR, see 2.1.2 Starting SLM UR.

#### (2) Related topics

• A. List of Port Numbers Used by SLM

# 8.6.7 Changing the port number set in SLM for the PFM performance data receiving port (working with Performance Management)

This subsection explains the setting that must be changed in SLM when the port number for receiving performance data from Performance Management has been changed.

For details about how to change port numbers in Performance Management, see the JP1/Performance Management Planning and Configuration Guide.

#### (1) Before you start

• Verify that the port number used to send data has been changed in Performance Management and obtain the new port number. For details about how to change port numbers in Performance Management, see the description of installation and setup in the *SLM/Performance Management Planning and Configuration Guide*.

#### (2) Procedure

To change the port number set in SLM for the PFM performance data receiving port:

1. Stop all monitored services.

For details about how to stop monitoring, see 4.2.2 Stopping monitoring.

2. On the host on which the port number for the PFM performance data receiving port is to be changed, stop the following SLM - Manager services:

- SLM Manager Web Service (service name: JP1\_ITSLM\_MGR\_Web\_Service)
- SLM Manager Service (service name: JP1 ITSLM MGR Service)

Stop SLM - Manager Web Service first and then stop SLM - Manager Service. There is no need to stop SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0).

For details about how to terminate SLM - Manager, see 2.1.4 Terminating SLM - Manager.

- 3. Specify the new port number for the PFM performance data receiving port in the pfmReceivePort property in SLM Manager's jplitslm.properties system definition file.
- 4. Start the following SLM Manager services that were stopped in step 2:
  - SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service)
  - SLM Manager Web Service (service name: JP1\_ITSLM\_MGR\_Web\_Service)

Start SLM - Manager Service first and then start SLM - Manager Web Service.

For details about how to start SLM - Manager, see 2.1.1 Starting SLM - Manager.

5. Start monitoring the monitored services that were stopped in step 1.

# 8.6.8 Changing the port number set in SLM for PFM - Manager's communication port (working with Performance Management)

This subsection explains the setting that must be changed in SLM when the Performance Management communication port number used to communicate with SLM has been changed.

## (1) Procedure

To change the port number set in SLM for the PFM - Manager communication port:

1. Stop all monitored services.

For details about how to stop monitoring, see 4.2.2 Stopping monitoring.

2. In PFM - Manager, change the port number used to communicate with SLM.

For details about how to change communication port numbers in PFM - Manager, see the *SLM/Performance Management Planning and Configuration Guide*.

- 3. On the host on which the Performance Management communication port number is to be changed, stop the following SLM Manager services:
  - SLM Manager Web Service (service name: JP1\_ITSLM\_MGR\_Web\_Service)
  - SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service)

Stop SLM - Manager Web Service first and then stop SLM - Manager Service. There is no need to stop SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0).

For details about how to terminate SLM - Manager, see 2.1.4 Terminating SLM - Manager.

- 4. Specify the new Performance Management communication port number in the pfmManagerPort property in SLM Manager's jplitslm.properties system definition file.
- 5. Start the following SLM Manager services that were stopped in step 3:
  - SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service)
  - SLM Manager Web Service (service name: JP1\_ITSLM\_MGR\_Web\_Service)

Start SLM - Manager Service first and then start SLM - Manager Web Service.

For details about how to start SLM - Manager, see 2.1.1 Starting SLM - Manager.

6. Start monitoring the monitored services that were stopped in step 1.

#### 8.7 Changing the network interface number

If you have performed any of the following tasks in SLM - UR, you must check and, if necessary, revise the network interface number that was specified when SLM - UR was set up:

- Added or deleted network interface cards
- Changed network interface settings

This section explains how to change the network interface number in SLM - UR.

#### 8.7.1 Before you start

After you have performed any of the tasks listed below, execute the jslmuripls command to check the network interface number and IP address:

- Added or deleted network interface cards
- Changed network interface settings

When you obtain the network interface number, check its value against the urNetworkInterfaceNumber property value in SLM - UR's jplitslmur.properties system definition file to determine if the property value matches the network interface number of the network device that you want to monitor.

#### Note:

If the urNetworkInterfaceNumber property value matches the network interface number of the network device to be monitored, there is no need to change the network interface number.

#### 8.7.2 Procedure

To change the network interface number:

- 1. Terminate the SLM UR whose network interface number is to be changed. For details about how to terminate SLM - UR, see 2.1.3 Terminating SLM - UR.
- 2. Create the options file needed for the setup and specify in the ur\_ni\_number definition item the network interface number that you want to monitor.

For details about the options file, see 9.19 jslmursetup (sets up SLM - UR) in 9. Commands.

The absolute path of the storage of the created options file, including the options file name (any name) at the storage, must not exceed 255 bytes.

3. Execute the SLM - UR setup command.

Execute the following setup command:

SLM-UR-installation-folder/ur/bin/jslmursetup absolute-path-of-options-file

For details about the setup command, see 9.19 jslmursetup (sets up SLM - UR) in 9. Commands.

4. Start the SLM - UR that was terminated in step 1.

For details about how to start SLM - UR, see 2.1.2 Starting SLM - UR.

#### Related topics

5.6.2 Editable definitions

8. Maintenance

# 8.8 Settings needed when PFM - Agent or PFM - RM is upgraded (working with Performance Management)

If PFM - Agent or PFM - RM has been upgraded and the version of the data model has changed, you must obtain the configuration information in SLM - Manager and set up the monitoring items again.

For details about how to obtain the configuration information in SLM - Manager, see 3.2.7 Setting up the monitoring items for system performance as configuration information (working with Performance Management).

# 8.9 Applying changes made to definitions in Performance Management to SLM (working with Performance Management)

If definitions have been changed in Performance Management, you must apply the changes to SLM.

# 8.9.1 Applying changes to Performance Management configuration information to SLM

If any of the following tasks have been performed in Performance Management, you must apply the changes to the configuration information in SLM:

- Added or deleted business groups
- Added or deleted managed hosts
- · Added or deleted monitoring agents or PFM Agents for Service Response
- Added or deleted monitoring items

If the units of the metrics for a monitoring item are changed in Performance Management, you can also use the procedure explained here to apply the changes to SLM. However, the names of monitoring items that have already been registered cannot be changed with this procedure.

#### (1) Before you start

- Verify that you have the service group administrator permissions.
- Log in to SLM Manager.

For details about how to log in, see 2.2.1 Logging in to SLM - Manager.

#### (2) Procedure

This subsection provides an overview of the flow of the steps in the procedure. For details about each step, see 3.2.7 Setting up the monitoring items for system performance as configuration information (working with Performance Management).

To apply to SLM changes that have been made to Performance Management configuration information:

- 1. In the SLM window, click the Settings button.
- 2. In the Setting menu area, select the Configuration information settings.
- 3. From the Services list area, select a monitored service.
- 4. Click the **Refresh configuration information** button.

Configuration i	Configuration information settings				
Service group	Group01	Service	Service01	Refresh configuration information	

5. If business groups have been added or deleted in Performance Management, check and specify the associations between monitored services and business groups in **Business groups**.

<sup>8.</sup> Maintenance

# 8.9.2 Applying changes to PFM - Agent for Service Response definitions to SLM

If service measurement definitions for availability monitoring have been changed in PFM - Agents for Service Response, you must apply the changes to the configuration information to SLM.

This subsection explains the tasks that must be performed in SLM when service measurement definitions for availability monitoring have been changed.

## (1) Before you start

- Verify that you have the service group administrator permissions.
- Log in to SLM Manager.
   For details about how to log in, see 2.2.1 Logging in to SLM Manager.

## (2) Procedure

This subsection provides an overview of the flow of the steps in the procedure. For details about each step, see 3.2.8 Setting up the monitoring items for availability monitoring as configuration information (working with Performance Management).

To apply to SLM changes that have been made to definitions of PFM - Agents for Service Response:

- 1. In the SLM window, click the **Settings** button.
- 2. In the Setting menu area, select the Configuration information settings.
- 3. From the Services list area, select a monitored service.
- 4. Click the **Refresh configuration information** button.

Configuration i	nformation settings				
Service group	Group01	Service	Service01	(	Refresh configuration information

5. Click the **Availability monitor** tab and check and specify the associations between monitored services and business groups in **Measurement conditions**.

#### 8.9.3 Changing the URL of PFM - Web Console

If URL of PFM - Web Console has been changed, you must change the application definition in SLM.

#### (1) Procedure

To change the URL of PFM - Web Console:

1. Change the URL of PFM - Web Console.

For details about how to change the information constituting the URL of PFM - Web Console, such as host name and IP address, see the *SLM/Performance Management Planning and Configuration Guide*.

- 2. Stop the following SLM Manager services:
  - SLM Manager Web Service (service name: JP1\_ITSLM\_MGR\_Web\_Service)
  - SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service)

#### 8. Maintenance

Stop SLM - Manager Web Service first and then stop SLM - Manager Service. There is no need to stop SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0).

For details about how to terminate SLM - Manager, see 2.1.4 Terminating SLM - Manager.

- 3. Specify the new URL of PFM Web Console in the pfmWebConsoleURL property in SLM Manager's jplitslm.properties system definition file.
- 4. Start the following SLM Manager services that were stopped in step 2:
  - SLM Manager Service (service name: JP1 ITSLM MGR Service)
  - SLM Manager Web Service (service name: JP1\_ITSLM\_MGR\_Web\_Service)

Start SLM - Manager Service first and then start SLM - Manager Web Service.

For details about how to start SLM - Manager, see 2.1.1 Starting SLM - Manager.



# Commands

This chapter explains the syntax of the SLM commands.

#### 9.1 Format of command explanations

The following describes the items used to explain each command. Note that not all the items are used for some commands.

#### Function

Explains the function of the command.

#### Format

Shows the specification format of the command.

#### **Execution permission**

Explains the user permissions required to execute the command.

#### Storage folder

Shows the location at which the command is stored.

#### Arguments

Explains the command's arguments.

Arguments are case-sensitive (path specifications, however, are not case-sensitive).

#### Notes

Provides notes about the command.

For the notes common to all commands, see 9.3 Notes about command execution.

#### **Return value**

Explains the command's return values.

For details about messages displayed during command execution, see 11.3 Messages.

#### Example

Shows an example of specifying the command.

#### Example output

Shows an example of the command's output.

# 9.2 List of commands

The following table lists and provides an overview of the commands supported by SLM.

Table 9-1: List of co	mmands supported by SLM
-----------------------	-------------------------

No.	Command name	Target	Overview of function
1	9.4 jslmdbcopy (backs up database)	Mgr	Backs up the database used in SLM.
2	9.5 jslmdbrstr (restores database)	Mgr	Restores the database used in SLM.
3	9.6 jslmmgrconfig (setting a monitored service)	Mgr	Sets the monitored service.
4	9.7 jslmmgrconnect (connecting SLM - Manager)	Mgr	Requests a connection from the master instance of SLM - Manager to the slave instance of SLM - Manager to be connected to.
5	9.8 jslmmgrdbcleanup (cleans up database)	Mgr	Deletes unneeded data, including data that remained when monitored services were deleted and data that was created when database errors occurred.
6	9.9 jslmmgrexport (exports service monitor information)	Mgr	Exports service monitor information needed for data migration.
7	9.10 jslmmgrimport (imports service monitor information)	Mgr	Imports service monitor information that was exported by the jslmmgrexport command.
8	9.11 jslmmgrls (confirming the system management status of SLM - Manager)	Mgr	The system management status of SLM - Manager is displayed in the window of the command prompt.
9	9.12 jslmmgrsetup (sets up SLM - Manager)	Mgr	Creates an execution environment for SLM - Manager.
10	9.13 jslmmgrunsetup (undoes SLM - Manager setup)	Mgr	Discards the execution environment for SLM - Manager. This command is used when the settings specified during setup are to be changed without uninstalling SLM - Manager.
11	9.14 jslmminfoget (collects data needed for investigating the cause of SLM - Manager errors)	Mgr	Collects error information for SLM - Manager and information needed for error analysis.
12	9.15 jslmreport (outputs report data to a CSV file)	Mgr	Outputs report data stored in the database to a CSV file.
13	9.16 jslmurinfoget (collects data needed for investigating the cause of SLM - UR errors)	UR	Collects error information for SLM - UR and information needed fo error analysis.
14	9.17 jslmuripls (displays network interface number and IP address)	UR	Displays in the command prompt window the network interface number and IP address of the host on which SLM - UR is installed. The information displayed by this command is needed for setting up
15	9.18 jslmurnals(displays the network adapter address and IP address)	UR	SLM - UR.         The network adaptor address and IP address of the host on which SLM         - UR is installed is displayed in the window of the command prompt         The content displayed upon executing this command will be necessary         when setting up SLM - UR.
16	9.19 jslmursetup (sets up SLM - UR)	UR	Creates an execution environment for SLM - UR.
17	9.20 jslmurunsetup (undoes the SLM - UR setup)	UR	Discards the execution environment for SLM - UR. This command is used when the settings specified during setup are to be changed without uninstalling SLM - UR.

Legend:

Mgr: SLM - Manager UR: SLM - UR

# 9.3 Notes about command execution

This section provides notes that apply to all commands.

# Important

For the notes specific to the individual commands (including those that differ from the notes common to all commands), see *Notes* in the explanation of each command.

• If you specify a path in a command argument, you must specify an absolute path. The length of an absolute path must not exceed 255 characters. The following table shows the permitted characters and symbols.

No.	Characters and symbols	Remarks
1	Alphanumeric characters	
2	Space	<ul><li> If a path contains a space, enclose the entire path in double quotation marks (").</li><li> Folder names cannot begin or end with a space.</li></ul>
3	_(underscore)	
4	. (period)	
5	- (hyphen)	
6	: (colon)	Can be used only as the drive delimiter.
7	# (hash mark)	
8	@ (at mark)	
9	\ (backslash)	Can be used only as the folder delimiter.
10	() (parentheses)	

Table 9-2: Characters and symbols permitted for paths in command arguments

Legend:

--: No remarks

Note also that a path cannot contain a folder name or file name that includes a Windows reserved device name (such as AUX, CON, NUL, PRN, CLOCK\$, COM1 through COM9, LPT1 through LPT9).

- The commands listed below output messages to message logs as troubleshooting information during their execution. In the event of a problem, check the messages that have been output and take the appropriate corrective action. For details about the message logs, see 7.2.4 Message logs.
  - jslmmgrdbcleanup
  - jslmmgrexport
  - jslmmgrimport

• Do not specify the same file when simultaneously executing multiple commands that perform file input or output.

# Function

This command backs up the database used in SLM.

The database is configured on the host on which SLM - Manager is installed. To be prepared for problems that might occur on the host on which SLM - Manager is installed, we recommend that you execute this command periodically to back up the database.

Execute this command under the following conditions:

- The following SLM Manager services are stopped:
  - SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service)
  - SLM Manager Web Service (service name: JP1\_ITSLM\_MGR\_Web\_Service)
- The SLM Manager service SLM Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0) is running.

In the case of a cluster system, in addition to the above services, the SLM - Manager service **SLM** - **Manager DB Cluster Service** (service name: HiRDBClusterService\_JL0) must also be running. In a cluster system, execute this command on the active server (if the command is executed on the standby server, an error will result).

The command's execution results are output to the following file:

 ${\it SLM-Manager-installation-folder} \mbox{mgr} \logs\jslmdbcopy.log}$ 

For details about the messages displayed during command execution, see 11.3 Messages.

# Format

```
jslmdbcopy absolute-path-of-backup-file
```

# **Execution permission**

User account belonging to the Administrators group of the OS

# Storage folder

```
SLM-Manager-installation-folder\mgr\bin\
```

# Arguments

### absolute-path-of-backup-file

Specifies, enclosed in double quotation marks ("), the absolute path for the file to which the backup file is to be output.

Note that this absolute path must begin with a drive name (one character from A to Z or a to z or a colon (:)) and must consist of the characters A to Z, a to z, 0 to 9, underscore (\_), period (.), parentheses (()), backslash (\), and space. None of the following specifications is permitted:

• Specification in UNC representation

#### 9. Commands

JP1/Service Level Management Description

- Specification containing a network drive
- Specification of a drive name only
- Specification containing any of the following Windows and MS-DOS reserved words in folder and file names: CON, PRN, AUX, CLOCK\$, NUL, COM0, COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, COM9, LPT0, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, LPT9

If the backup file destination folder specified as the absolute path does not exist, create the folder before you execute the command.

Make sure that the specification does not include any special characters.

### Notes

- If a file already exists at the location specified in the argument when this command is executed, that file will be overwritten by the backup file output by the command.
- Do not execute commands other than the jslmminfoget command while this command is being executed.
- If execution of this command is canceled by pressing Ctrl+C, an incomplete backup file might be created under the folder specified in the argument. If this occurs, delete the corresponding file, stop the SLM Manager service SLM
   Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0), and then restart the service. To stop and start the service, from the Windows Start menu, select Administrative Tools, and then Services.
- If this command terminates with an error, stop the SLM Manager service SLM Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO), and then restart the service. To stop and start the service, from the Windows Start menu, select Administrative Tools, and then Services.
- If the specified backup file name contains any special character that requires enclosure in quotation marks at the command prompt, a command prompt syntax error message will be displayed and the command might terminate. In such a case, the return value will not necessarily be 1. The following are the applicable special characters: &, (), [], { }, ^, =, ;, !, ', +, , `, ~, <>, @, and |.
- The backup file name must differ from any folder name under the output destination folder specified in *absolute-path-of-backup-file*.
- Do not execute this command when SLM Manager has not been set up.
- If a backup file obtained in an SLM Manager environment is to be restored in another SLM Manager environment, the absolute path of the source RD area folder from which the backup file was obtained must match the absolute path of the target RD area folder to which the backup file is to be restored.
- This command does not apply to access logs. Access logs are backed up using the standard OS commands for copying files and folders. For details about how to make backups, see 8.1.3 Backing up the access logs.

# **Return value**

Return value	Description
0	Database backup processing terminated normally.
1	Database backup processing failed.

# Example

```
C:\Program Files\HITACHI\JP1ITSLM\mgr\bin\jslmdbcopy "C:\Users\Administrator\Desktop\
db\ITSLMBK01"
```

# Function

This command restores the database used in SLM.

In the event of a problem on the host on which SLM - Manager is installed, you can restore the environment in effect just before the problem occurred by executing this command.

Execute this command under the following conditions:

- The following SLM Manager services are stopped:
  - SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service)
  - SLM Manager Web Service (service name: JP1\_ITSLM\_MGR\_Web\_Service)
- The SLM Manager service SLM Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0) is running.

In the case of a cluster system, in addition to the above services, the SLM - Manager service **SLM** - **Manager DB Cluster Service** (service name: HiRDBClusterService\_JL0) must also be running. In a cluster system, execute this command on the active server (if the command is executed on the standby server, an error will result).

The command's execution results are output to the following file:

 ${\it SLM-Manager-installation-folder} \mbox{mgr} \mbox{logs} \mbox{jslmdbrstr.log}$ 

For details about the messages displayed during command execution, see 11.3 Messages.

### Format

```
jslmdbrstr absolute-path-of-backup-file
```

# **Execution permission**

User account belonging to the Administrators group of the OS

# Storage folder

```
SLM-Manager-installation-folder\mgr\bin\
```

# Arguments

#### absolute-path-of-backup-file

Specifies, enclosed in double quotation marks ("), the absolute path for the backup file that is to be restored.

Note that this absolute path must begin with a drive name (one character from A to Z or a to z or a colon (:)) and must consist of the characters A to Z, a to z, 0 to 9, underscore (\_), period (.), parentheses (()), backslash (\), and space. None of the following specifications is permitted:

- Specification in UNC representation
- Specification containing a network drive

- Specification of a drive name only
- Specification containing any of the following Windows and MS-DOS reserved words in folder and file names: CON, PRN, AUX, CLOCK\$, NUL, COM0, COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, COM9, LPT0, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, LPT9

Make sure that the specification does not include any special characters.

### Notes

- After this command has executed, the target database contains only the restored data.
- Do not execute commands other than the jslmminfoget command while this command is being executed.
- Do not cancel execution of this command by pressing Ctrl+C. If execution of the command is canceled by pressing Ctrl+C, the database area might become corrupted. If this command is canceled for some reason while its execution is underway, stop the SLM Manager service SLM Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0), and then restart the service. To stop and start the service, from the Windows Start menu, select Administrative Tools, and then Services.

If the SLM - Manager service **SLM - Manager DB Service** cannot be restarted successfully or SLM - Manager does not function normally, the database area might have become corrupted. In such a case, set up SLM - Manager again, and then re-execute this command to restore the database.

- If this command terminates with an error, stop the SLM Manager service SLM Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO), and then restart the service. To stop and start the service, from the Windows Start menu, select Administrative Tools, and then Services.
- If the specified backup file name contains any special character that requires enclosure in quotation marks at the command prompt, a command prompt syntax error message will be displayed and the command might terminate. In such a case, the return value will not necessarily be 1. The following are the applicable special characters: &, (), [], { }, ^, =, ;, !, ', +, , `, ~, <>, @, and |.
- Do not execute this command when SLM Manager has not been set up.
- If a backup file obtained in an SLM Manager environment is to be restored in another SLM Manager environment, the absolute path of the source RD area folder from which the backup file was obtained must match the absolute path of the target RD area folder to which the backup file is to be restored.

# **Return value**

Return value	Description
0	Database restore processing terminated normally.
1	Database restore processing failed.

# Example

C:\Program Files\HITACHI\JP1ITSLM\mgr\bin\jslmdbrstr "C:\Users\Administrator\Desktop\ db\ITSLMBK01"

# Function

This command has the following functions:

- Changing the monitoring configuration of a monitored service
- Obtaining Performance Management configuration information and system monitor item settings
- Updating Performance Management configuration information and system monitor item settings
- Obtaining the monitoring settings of a monitored service
- Updating the monitoring settings of a monitored service
- Adding a monitored service

This command is to be executed upon satisfying the following conditions:

- The following services of SLM Manager have been started.
  - Service SLM Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0)
  - Service SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service)
- Monitoring of the monitored service you wish to change the settings of is stopped.

Execute the command with the active server in the case of a cluster system. If the command is executed on the standby server, an error will result.

The only option that can be specified with the -t option when executing a command in relation to a slave instance of SLM - Manager is edit. Using an option other than edit results in an error.

When executing the command with set specified for the -t option, execute the command in advance upon specifying get for the -t option and specify the CSV file that is output as the argument. This prerequisite is to be executed for the -m option of each when specifying either config or monitor with the -m option. An error will occur if the command is not executed in advance with get specified for the -t option and the command is executed with set specified for the option.

The indicator "jslmmgrconfig" is configured to messages output to the message log by this command.

For details about the message log, see 7.2.4 Message logs.

For details about the messages that are output when commands are executed, see 11.3 Messages.

# Format

• Changing the monitoring configuration of a monitored service

```
jslmmgrconfig -t edit
    -g service-group-name -s service-name
    -c { service web-server-IP-address SLM-UR-IP-address URI | system }
```

• Obtaining the Performance Management configuration information and system monitor item settings

```
jslmmgrconfig -t get -m config
  -g service-group-name -s service-name
  [ -r ] -o CSV-file-path-of-output-destination [ -f ]
```

• Updating the Performance Management configuration information and system monitor item settings

jslmmgrconfig -t set -m config
 [ -f ] -i CSV-file-path-of-input-source

• Obtaining the monitoring settings of a monitored service

```
jslmmgrconfig -t get -m monitor
        -g service-group-name -s service-name
        -type { service | system } -o CSV-file-path-of-output-destination [
        -f ]
```

• Updating the monitoring settings of a monitored service

```
jslmmgrconfig -t set -m monitor
        -i CSV-file-path-of-input-source
```

#### • Adding a monitored service

```
jslmmgrconfig -t add
    [ -p { registration-destination-SLM-Manager-host-name | registration-
destination-SLM-Manager-IP-address } ]
    -g service-group-name -s service-name
    -c { service web-server-IP-address SLM-UR-IP-address URI | system }
```

### **Execution permission**

User account that belongs to the OS's Administrators group

### Storage folder

```
SLM-Manager-installation-folder\mgr\bin\
```

### Arguments

-g service-group-name

Specifies the name of the service group of the monitored service. A name beginning with a hyphen (-) cannot be specified.

-s service-name

Specifies the name of the monitored service. A name beginning with a hyphen (-) cannot be specified.

-c

Changes the monitoring configuration of the service to a different monitoring configuration. The following explains the specification method.

• service

Specified when adding a monitored service of the service monitoring configuration or when changing a monitored service of the system monitoring configuration to the service monitoring configuration. Specify the IP address of the web server, the IP address of the UR, and the URI in the following manner:

IP address of web server

Specifies the IP address of the web server providing the monitored service.

*IP address of SLM - UR* Specifies the IP address of SLM - UR. *URI* 

```
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```

Specifies the URI of the monitored service.

1 to 255 characters can be entered. You cannot enter spaces, ", #, <, >, ?, [, \, ], ^, `, {, |, }, or non-ASCII characters. The notation must conform to RFC 3986.

Enter a URI to which the user has full access.

Make sure that each URI ends with a slash (/). However, when the end of the URI detected immediately after is not a slash (/), as long as the URI is not edited, registration is possible as a monitored service with which all paths of the URI are subject to monitoring. A URI is specified in the following format:

#### authority path

The meanings of these values are as follows:

#### authority

Corresponds to *host*, *port*. The *host* must consist of 1 to 255 characters and if it exceeds 255 characters, only the first 255 characters are used. The *port* must be a numeric value between 0 and 65,535. If no *port* number is specified, all *port* numbers are targeted.

#### path

The path must consist of 1 to 255 characters and if it exceeds 255 characters, only the first 255 characters are used. Double-byte characters cannot be used. URL-encoded characters in UTF-8 can be used.

#### • system

Specified when changing the service monitoring configuration of a monitored service to the system monitoring configuration. The following items are deleted along with the change to the system monitoring configuration:

- Setting up service performance monitoring
- Web transactions
- Service performance information

When the access log function has been used prior to changing the monitoring configuration and the access log function will not be used with all monitored services registered after the change, it is necessary to manually delete the folder specified with the system definition property (accessLogFilePath) of SLM - UR and delete the specification of the property.

#### -o CSV-file-path-of-output-destination

Specifies the file path for the output destination of the obtained information. The obtained information is output in CSV format. An absolute file path can be specified for the file path name.

If the specified directory does not exist, an error will result.

If the specified output file already exists, the specification of the -f option is observed.

#### Output format of CSV file

The output format of the CSV file is as follows: The output format differs depending on the obtained information.

• When the Performance Management configuration information and system monitor item settings have been obtained

The output format when the Performance Management configuration information and system monitor item settings have been obtained is as follows:

```
service-group-name, service-name
Registor, Business group, Host, Monitored target, Monitor item, Key field 1, Key field
2, Key field 3, Key field 4, Key field 5, Key field 6, Key field 7, Key field 8, Key f
ield 9, Key field 10
Register-value, Business group-value, Host-value, Monitored target-value, Monitor it
em-value, Key field 1-value, Key field 2-value, Key field 3-value, Key field 4-value
```

The format information of the output format is as follows:

Table 9-3:	Format	information	of the	output format
	1 Ollinar	mormador	01 010	output format

Line number	Category	Description
Line 1	Service information	Information about service to be obtained
Line 2	Header information of data section	Item information of data section
Line 3 and following lines	Data section	Actual data placed in data section

Output information of the output format is as follows:

Table 9-4: Output information of the output format

Category	Item	Description
Service information	Service group name	Service group name subject to obtaining of monitoring configuration information
	Service name	Service name subject to obtaining of monitoring configuration information
Data section	Register value	The following value is output. 0: Not registered with specified service 1: Registered with specified service
	Business group value	Business group name
	Host value	Host name
	Monitored target value	Monitored target name
	Monitor item value	Monitor item name
	Key field 1 value to Key field 10 value	Key value Null characters are output when a key value has not been set.

• When the monitoring settings of a monitored service have been obtained

The output format when the monitoring settings of a monitored service (service monitoring settings or system monitoring settings) have been obtained is as follows:

Service monitoring settings

```
service-group-name, service-name, service, Period-value
Monitored target, Avg.response-Reg, Threshold, Trend monitor-Reg, Trend monitor, Thro
ughput-Reg, Threshold, Trend monitor-Reg, Trend monitor, Error rate-Reg, Threshold, Da
ys in baseline calculation, Days till start, Error Predict. Settings-Reg(Avg. resp
onse), Sensitivity (Avg. response), Correlated items, Error Predict. Settings-Reg(Th
roughput), Sensitivity (Throughput), Error Predict. Settings-Reg(Error rate), Sensit
ivity (Error rate)
Monitored target-value, Avg.response-Reg-value, Threshold-value, Trend monitor-Reg-
value, Trend monitor-value, Throughput-Reg-value, Threshold-value, Trend monitor-Reg
-value, Trend monitor-value, Error rate-Reg-value, Threshold-value, Days in baseline
calculation-value, Days till start-value, Error Predict. Settings-Reg(Avg. respon
se), Sensitivity (Avg. response), Correlated items, Error Predict. Settings-Reg(Thro
ughput), Sensitivity (Throughput), Error Predict. Settings-Reg(Error rate), Sensitiv
ity (Error rate)
```

The format information of the output format is as follows:

# Table 9-5: Format information of the output format

Line number	Category	Description
Line 1	Service information	Information about service to be obtained
Line 2	Header information of data section	Item information of data section
Line 3 and following lines	Data section	Actual data placed in data section

Output information of the output format is as follows:

# Table 9-6: Output information of the output format

Category	Item	Description
Monitoring settings	Service group name Service name service	The information about the service monitoring settings of the service referenced when the data is obtained.
Period of analysis of out-of-range value detection	Period value	Outputs one of the following for the configured period of analysis for out-of- range value detection: Short range: Past 60 days Long range: Past 5 years
Target	Monitored target value	<ul> <li>Outputs one of the following for the subject of service monitoring settings of the specified service:</li> <li>All Web Access</li> <li>Web transaction name The web transaction names are displayed in the order of registration.</li> </ul>
Monitoring flag	Avg. response-Reg value         Existence of average response time         Trend monitor-Reg value         Existence of average response time (trend monitor)         Throughput-Reg value         Existence of throughput         Trend monitor-Reg value         Existence of throughput         Trend monitor-Reg value         Existence of throughput (trend monitor)         Error rate-Reg value         Existence of error rate         Error Predict. Settings(Avg. response)         value         Existence of average response time (out-of-range value detection)         Error Predict. Settings(Throughput) value         Existence of throughput (out-of-range value detection)         Error Predict. Settings(Error rate) value         Existence of error rate	Information on whether monitoring is being implemented is output by using the following values: 0: Without monitoring flag 1: With monitoring flag
Value input	Threshold value         Threshold of average response time         Trend monitor value         Average response time (trend monitor)	The configured value is output.

Category	Item	Description
Value input	Threshold valueThreshold of throughputTrend monitor valueThroughput (trend monitor)Threshold valueThreshold of error rateDays in baseline calculation valueNumber of days of accumulation at baselineDays till start valueStart time	The configured value is output.
Sensitivity input	Sensitivity(Avg. response) valueSensitivity of response time of out-of- range value detectionSensitivity(Throughput) valueSensitivity of throughput of out-of- range value detectionSensitivity(Error rate) valueSensitivity of error rate of out-of- range value detection	Information on the sensitivity of monitoring settings is output using the following values: l: Low m: Medium h: High The value is not case-sensitive.
Correlated items	Correlated items value	The information set to be subject to correlation with the response time is output using the following values: NO: None TH: Throughput

#### System monitoring settings

Service group name, Service name, system, Period value Host Name, Monitored target Name, Monitor item Name, SLO monitor-Reg, Threshold, Time s exceeded, measured, Trend monitor-Reg, hours, Error Predict-Reg, Days in baseline c alculation, Days till start, Sensitivity, Times exceeded, measured, Select Host Name value, Monitored target Name value, Monitor item Name value, SLO monitor-Reg value, Threshold value, Trend monitor value, Times exceeded value, measured valu e, Trend monitor-Reg value, hours value, Error Predict-Reg value, Days in baseline c alculation value, Days till start value, Sensitivity value, Times exceeded value, me asured value, Select value

The format information of the output format is as follows:

#### Table 9-7: Format information of the output format

Line number	Category	Description
Line 1	Service information	Information about the service to be obtained
Line 2	Header information of data section	Item information of data section
Line 3 and following lines	Data section	Actual data placed in data section

Output information of the output format is as follows:

Category	Item	Description
Monitoring settings	Service group name Service name system	The information of the system monitoring settings of the service referenced when the data is obtained.
Period of analysis of out-of-range value detection	Period value	Outputs one of the following for the configured period of analysis for out-of- range value detection: Short range: Past 60 days Long range: Past 5 years
Target	Host Name value Monitored host name Monitored target Name value Monitored target name Monitor item Name value Monitor item name	The subjects of the system monitoring settings of the specified service.
Monitoring flag	SLO monitor-Reg value Existence of threshold value monitor Trend monitor-Reg value Whether to monitor trends Error Predict-Reg value Existence of out-of-range value detection	Information on whether monitoring is being implemented is output by using the following values: 0: Without monitoring flag 1: With monitoring flag
Value input	<ul> <li>Threshold value <ul> <li>Threshold</li> </ul> </li> <li>Times exceeded value <ul> <li>Number of times the threshold has</li> <li>been exceeded</li> </ul> </li> <li>measured value <ul> <li>Number of times the threshold has</li> <li>been measured</li> </ul> </li> <li>hours value <ul> <li>Number of trend monitor hours</li> </ul> </li> <li>Days in baseline calculation value <ul> <li>Number of days of accumulation at baseline</li> </ul> </li> <li>Days till start value <ul> <li>Start time out-of-range value detection</li> </ul> </li> <li>Times exceeded value <ul> <li>Number of times the out-of-range value detection has been exceeded</li> </ul> </li> </ul>	The configured value is output.
Sensitivity input	Sensitivity value	Information on the sensitivity of out-of- range value detection is output using the following values: l: Low m: Medium h: High

Table 9-8: Output information of the output format

Category	Item	Description
Sensitivity input	Sensitivity value	The value is not case-sensitive.
Reference selection	Select value	In the case of the system monitoring configuration, whether to select an item to serve as a reference for the creation of the baseline is output using the following values: 0: Do not select as a reference 1: Select as a reference

#### Output character code

Output is in the UTF-8 format.

#### -i CSV-file-path-of-input-source

Specifies the file path for the input source of the updated information. The file is input in the CSV format. An absolute file path can be specified for the file path name.

If the specified directory does not exist, an error will result.

#### Input format of CSV file

The input format of the CSV file is as follows: The input format differs depending on the information to be updated.

• When updating the Performance Management configuration information and system monitor item settings

The input format when updating the Performance Management configuration information and system monitor item settings is as follows:

```
service-group-name, service-name
Registor,Host,Business group,Monitored target,Monitor item,Key field 1,Key field
2,Key field 3,Key field 4,Key field 5,Key field 6,Key field 7,Key field 8,Key f
ield 9,Key field 10
Register-value,Business group-value,Host-value,Monitored target-value,Monitor it
em-value,Key field 1-value,Key field 2-value,Key field 3-value,Key field 4-value
,Key field 5-value,Key field 6-value,Key field 7-value,Key field 8-value,Key fiel
d 9-value,Key field 10-value,itemAddName-value
```

The format information of the input format is as follows:

#### Table 9-9: Format information of the input format

Line number	Category	Description
Line 1	Service information	Information about service to be updated
Line 2	Header information of data section	Item information of data section
Line 3 and following lines	Data section	Actual data placed in data section

Input information of the input format is as follows:

#### Table 9-10: Input information of the input format

Category	Item	Description
Service information	Service group name	Service group name subject to update
	Service name	Service name subject to update
Data section	Register value	Input the Register value using the following values: 0: Do not register with specified service

Category	Item	Description
Data section	Register value	1: Register with specified service 2: Delete from specified service
	Business group value	Business group name
	Host value	Host name
	Monitored target value	Monitored target name
	Monitor item value	Monitor item name
	Key field 1 value to Key field 10 value	Inputs a key value. Null characters are input when a key value has not been set.
	itemAddName value	Character string to add to the end of a monitored target name upon registration. The character string that combines the Monitored target value and the itemAddName value will be the monitor item name.
		The specification of this items will take effect only when specifying a key value. The specification will be ignored for monitor items not including a key value.
		A maximum of 1024 bytes of characters in UTF-8 format can be specified for this item.

• When updating the monitoring settings of a monitored service

The input format when the monitoring settings of a monitored service (service monitoring settings) are to be updated is as follows:

#### Service monitoring settings

service-group-name, service-name, service, Period-value Monitored target, Avg.response-Reg, Threshold, Trend monitor-Reg, Trend monitor, Thro ughput-Reg, Threshold, Trend monitor-Reg, Trend monitor, Error rate-Reg, Threshold, Da ys in baseline calculation, Days till start, Error Predict. Settings-Reg(Avg. resp onse), Sensitivity(Avg. response), Correlated items, Error Predict. Settings-Reg(Th roughput), Sensitivity(Throughput), Error Predict. Settings-Reg(Error rate), Sensit ivity(Error rate) Monitored target-value, Avg.response-Reg-value, Threshold-value, Trend monitor-Regvalue, Trend monitor-value, Throughput-Reg-value, Threshold-value, Trend monitor-Reg -value, Trend monitor-value, Error rate-Reg-value, Threshold-value, Days in baseline calculation-value, Days till start-value, Error Predict. Settings-Reg(Avg. respon se)-value, Sensitivity(Avg. response)-value, Correlated items-value, Error Predict. Settings-Reg(Throughput)-value, Sensitivity(Throughput)-value, Error Predict. Set tings-Reg(Error rate)-value, Sensitivity(Error rate)-value

Input information of the input format is as follows:

Line number	Category	Description
Line 1	Service information	Information about the service to be updated
Line 2	Header information of data section	Item information of data section
Line 3 and following lines	Data section	Actual data placed in data section

Input information of the input format is as follows:

Category	Item	Description
Monitoring settings	Service group name Service name service	The information about the service monitoring settings of the service to be referenced when the data is updated.
Period of analysis of out-of-range value detection	Period value	Inputs one of the following for the configured period of analysis for out-of- range value detection: Short range: Past 60 days Long range: Past 5 years
Target	Monitored target value	<ul> <li>Inputs one of the following for the subjects of the service monitoring settings of the specified service:</li> <li>All Web Access</li> <li>Web transaction name</li> </ul>
Monitoring flag	Avg. response-Reg valueExistence of average response timeTrend monitor-Reg valueExistence of average response time(trend monitor)Throughput-Reg valueExistence of throughputTrend monitor-Reg valueExistence of throughput (trend monitor)Error rate-Reg valueExistence of error rateError Predict. Settings(Avg. response)valueExistence of average response time (out-of-range value detection)Error Predict. Settings(Throughput) value Existence of throughput (out-of-range value detection)Error Predict. Settings(Error rate) value Existence of error rate	Information on whether to implement monitoring is input by using the following values: 0: Without monitoring flag 1: With monitoring flag 2: Release monitoring flag
Value input	Threshold value         Threshold of average response time         Trend monitor value         Average response time (trend monitor)         Threshold value         Threshold of throughput         Trend monitor value         Throughput (trend monitor)         Threshold value         Throughput (trend monitor)         Threshold of error rate         Days in baseline calculation value         Number of days of accumulation at baseline	Input the value you wish to update. If a value exceeding the upper limit is configured, an error results.

# Table 9-12: Input information of the input format

Category	Item	Description
Value input	Days till start value Start time	Input the value you wish to update. If a value exceeding the upper limit is configured, an error results.
Sensitivity input	Sensitivity(Avg. response) valueSensitivity of response time of out-of- range value detectionSensitivity(Throughput) value Sensitivity of throughput of out-of- range value detectionSensitivity(Error rate) value Sensitivity of error rate of out-of-range value detection	Information on the sensitivity of monitoring settings is input using the following values: l: Low m: Medium h: High The value is not case-sensitive.
Correlated items	Correlated items value	The information to set as being subject to correlation with the response time is input using the following values: NO: None TH: Throughput

#### System monitoring settings

Service group name, Service name, system, Period value Host Name, Monitored target Name, Monitor item Name, SLO monitor-Reg, Threshold, Time s exceeded, measured, Trend monitor-Reg, hours, Error Predict-Reg, Days in baseline c alculation, Days till start, Sensitivity, Times exceeded, measured, Select Host Name value, Monitored target Name value, Monitor item Name value, SLO monitor-Reg value, Threshold value, Trend monitor value, Times exceeded value, measured valu e, Trend monitor-Reg value, hours value, Error Predict-Reg value, Days in baseline c alculation value, Days till start value, Sensitivity value, Times exceeded value, me asured value, Select value

Input information of the input format is as follows:

Line number	Category	Description
Line 1	Service information	Information about the service to be updated
Line 2	Header information of data section	Item information of data section
Line 3 and following lines	Data section	Actual data placed in data section

Input information of the input format is as follows:

#### Table 9-14: Input information of the input format

Category	Item	Description
Monitoring settings	Service group name Service name system	The information of the system monitoring settings of the service to be referenced when the data is updated.
Period of analysis of out-of-range value detection	Period value	Inputs one of the following for the configured period of analysis for out-of- range value detection: Short range: Past 60 days Long range: Past 5 years

Category	Item	Description
Target	Host Name value Monitored host name Monitored target Name value Monitored target name Monitor item Name value Monitor item name	The subjects of the system monitoring settings of the specified service.
Monitoring flag	SLO monitor-Reg value Existence of threshold value monitor Trend monitor-Reg value Whether to monitor trends Error Predict-Reg value Existence of out-of-range value detection	Information on whether to implement monitoring is input by using the following values: 0: Without monitoring flag 1: With monitoring flag 2: Release monitoring flag
Value input	Threshold value ThresholdTimes exceeded value Number of times the threshold has been exceededmeasured value Number of times the threshold has been measuredhours value Number of trend monitor hoursDays in baseline calculation value Number of days of accumulation at baselineDays till start value Start time out-of-range value detection Number of times the out-of-range value detection has been exceeded	Input the value you wish to update. If a value exceeding the upper limit is configured, an error results.
Sensitivity input	Sensitivity value	Information on the sensitivity of monitoring settings is input using the following values: l: Low m: Medium h: High The value is not case-sensitive.
Reference selection	Select value	In the case of the system monitoring configuration, whether to select an item to serve as a reference for the creation of the baseline is input by using the following values: 0: Do not select as a reference 1: Select as a reference However, "1" can be specified for only one monitor item in a single file.

#### Input character code

Input is in the UTF-8 format.

-type

Specifies the monitoring settings to obtain. The following explains the specification method.

• service

Specified when obtaining service monitoring settings.

• system

Specified when obtaining system monitoring settings.

-f

The function of this option differs depending on whether the option specified at the same time is -t get or -t set.

- When the option specified at the same time is -t get Specified to overwrite the output file in cases when the output file specified with the -o option already exists. If the file exists in a case where this option has been omitted, an error will result.
- When the option specified at the same time is -t set

When a monitor item that does not exist on the database can be found on the CSV file for inputting the configuration information, register the monitor item after deleting the corresponding monitor item from the CSV file.

-r

When there is a monitor item that does exist in the configuration information of the registered service but does not exist in the configuration information of Performance Management, delete the monitor item from the registered service.

If the above difference exists in a case where this option has been omitted, an error will result.

-p

Specifies the instance of SLM - Manager for registration of the monitored service. The following explains the specification method.

- *Host name of SLM Manager at the registration destination* Specifies the host name of SLM - Manager at the registration destination.
- *IP address of SLM Manager at the registration destination* Specifies the IP address of SLM - Manager at the registration destination.

For the specification formats of the IP address and host name of SLM - Manager at the registration destination, see the specified range of managerHost described in (1) List of definitions that can be edited in SLM under 5.6.2 Editable definitions.

The options that can be specified with the -t option and the -m option are as follows.

### Table 9-15: List of options that can be specified with the -t option and the -m option

-t option									
and -m option	-g	-s	-С	-f	-0	-r	-i	-type	-р
-t edit	Required	Required	Required	Unavailabl e	Unavailabl e	Unavailabl e	Unavailab le	Unavailabl e	Unavailabl e

-t option	Options that can be specified								
and -m option	-g	-S	-C	-f	-0	-r	-i	-type	-р
-t get -m config	Required	Required	Unavailab le	Optional	Required	Optional	Unavailab le	Unavailabl e	Unavailabl e
-t get -m monitor	Required	Required	Unavailab le	Optional	Required	Unavailabl e	Unavailab le	Required	Unavailabl e
-t set -m config	Unavailabl e	Unavailabl e	Unavailab le	Optional	Unavailabl e	Unavailabl e	Required	Unavailabl e	Unavailabl e
-t set -m monitor	Unavailabl e	Unavailabl e	Unavailab le	Unavailabl e	Unavailabl e	Unavailabl e	Required	Unavailabl e	Unavailabl e
-t add	Required	Required	Required	Unavailabl e	Unavailabl e	Unavailabl e	Unavailab le	Unavailabl e	Optional

#### (Legend)

Required: Specifying this option is required. Optional: Specifying this option is optional. Unavailable: The option cannot be specified.

### Notes

- The following operations and statuses are mutually exclusive with this command:
  - Starting and stopping detection of monitored services
  - Registering and deleting monitored services
  - Starting and stopping detection of Web transactions
  - Registering and deleting Web transactions
  - Editing Web transactions (including re-sort)
  - A state where monitoring of the monitored service subject to being changed has been started
  - Starting monitoring and stopping monitoring of monitored services
  - Adding, editing, copying, and deleting report templates
  - Updating configuration information
  - Saving monitoring item settings for system performance
  - Setting up service performance monitoring
  - Setting up system performance monitoring
  - Setting up availability monitoring

If this command is executed while a mutually exclusive process is already being executed, the command results in an error and the processing thereof will interrupt. Similarly, if an attempt is made to start a mutually exclusive process while this command is being executed, such process will result in an error and be interrupted. However, depending on the options that are specified when executing the command, the process might not be interrupted due to not being mutually exclusive with the above operation.

- Do not execute commands other than the jslmminfoget command while this command is being executed.
- When the configuration is changed from the service monitoring configuration to the system monitoring configuration, service the performance information is discarded and only the system performance information will remain.

- To delete data on the database that has become unnecessary due to the change of the monitoring configuration, we recommend that after this command is executed, you execute the jslmmgrdbcleanup command.
- It is necessary to login again in order for the changes caused by the execution of this command to be reflected in the window. If actions are continued without logging in again, a message will be output indicating that an error has occurred with actions of the KNAS15011-E or the database and the system will return to the **login** window. In such case, login again and continue actions.
- In a master/slave configuration, if any service groups or services have the same name, do not specify such names when executing this command. If the command is executed in such manner, the service having the most recent registration date/time will be made subject to this command.
- Do not interrupt the execution of this command with the action to close the command prompt executing the command or by pressing Ctrl+C on the keyboard.
- As the processing of a rollback of the database is executed after the execution of a command is interrupted, executing a command that is mutually exclusive with this command or a window operation during the rollback process generates a database error. If a database error is generated upon execution of a command or window operation following an interruption of the execution of a command, try to execute the command again after waiting a while.
- When updating the monitoring settings of a monitored service with this command, specify the combination of the "host name", monitored target name", and "monitor item name" with the input source file of the updated information to be unique within the service.
- When updating the Performance Management configuration information and system monitor item settings with this command, specify the name with the input source file of the updated information so that the "monitor item name" after registration is not a duplicate.

# **Return values**

Return values	Description		
0	0 Setting of the monitored service terminated normally.		
1	Setting of the monitored service failed.		
130The process has been interrupted with <b>Ctrl+C</b> on the keyboard.			

# Example

• Changing the monitoring configuration of a monitored service

```
C:\Program Files\HITACHI\JP1ITSLM\mgr\bin\jslmmgrconfig -t edit -g GroupA -s Servi ceA -c service 10.150.100.10 10.150.200.20 10.150.200.10/
```

• Obtaining the Performance Management configuration information and system monitor item settings

```
C:\Program Files\HITACHI\JP1ITSLM\mgr\bin\jslmmgrconfig -t get -m config -g group1
-s service -f -r -o C:\ITSLM\result.csv
```

• Updating the Performance Management configuration information and system monitor item settings

```
C:\Program Files\HITACHI\JP1ITSLM\mgr\bin\jslmmgrconfig -t set -m config -f -i C:\
ITSLM\result.csv
```

• Obtaining the monitoring settings of a monitored service

```
C:\Program Files\HITACHI\JP1ITSLM\mgr\bin\jslmmgrconfig -t get -m monitor -g group
1 -s service -type service -f -o C:\ITSLM\result.csv
```

• Updating the monitoring settings of a monitored service

C:\Program Files\HITACHI\JP1ITSLM\mgr\bin\jslmmgrconfig -t set -m monitor -i C:\IT SLM\result.csv

#### • Adding a monitored service

C:\Program Files\HITACHI\JP1ITSLM\mgr\bin\jslmmgrconfig -p 172.17.2.99 -g Group1 - s newser -c service 172.17.2.99 172.17.2.99 172.17.2.99/

JP1/Service Level Management Description

# Function

Implements a connection request from the master instance of SLM - Manager to the slave instance of SLM - Manager targeted for the connection.

When the master instance of SLM - Manager has been abnormally terminated and the link between the master instance of SLM - Manager and a slave instance of SLM - Manager has been released, executing this command reestablishes the link.

This command is to be executed upon satisfying the following conditions:

- The following services of SLM Manager have been started.
  - SLM Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0)
  - **SLM Manager Service** (service name: JP1\_ITSLM\_MGR\_Service)

Execute the command with the active server in the case of a cluster system. If the command is executed on the standby server, an error will result.

When using the master/slave configuration of SLM – Manager, execute this command in relation to the master instance of SLM - Manager. If the command is executed with a slave instance of SLM - Manager, an error will result. Executing this command in SLM - Manager when using a single-manager configuration will also result in an error.

The indicator "jslmmgrconnect" is configured to messages output to the message log by this command.

For details about the message log, see 7.2.4 Message logs.

For details about the messages that are output when commands are executed, see 11.3 Messages.

# Format

jslmmgrconnect -a IP-address-or-host-name[ -p port-number]

# **Execution permission**

User account that belongs to the OS's Administrators group

# Storage folder

```
SLM-Manager-installation-folder\mgr\bin\
```

# Arguments

-a IP-address-or-host-name

Specifies the IP address or the host name of the slave instance of SLM - Manager subject to connection.

The IP address or host name is specified in the following format:

- ASCII codes 0x20 to 0x7e (excluding control characters)
- A length of 1 to 256 bytes (permitted number of bytes depends on Windows)

Characters that are not permitted in host names in Windows cannot be specified.

None of the following addresses can be specified:

- 0.0.0.0
- 127.0.0.1
- 255.255.255.255

An error will occur if the specified connection destination is an instance of SLM - Manager in the single-manager configuration or the master instance of SLM - Manager in the master/slave configuration.

#### -p port-number

Specifies the port number of the slave instance of SLM - Manager subject to connection.

Specify the port number as a number in the range from 5001 to 65535. "20904" is specified as the port number when this option is omitted.

Not specifying an IP address or host name with the -a option will result in an error.

### Notes

- This command and the following operations are mutually exclusive:
  - Registering and deleting monitored services
  - Registering and deleting Web transactions
  - Editing Web transactions (including re-sort)
  - Adding, editing, copying, and deleting report templates
  - Updating configuration information
  - Saving monitoring item settings for system performance
  - Setting up service performance monitoring
  - Setting up system performance monitoring
  - Setting up availability monitoring

If this command is executed while a mutually exclusive process is already being executed, the command results in an error and the processing thereof will interrupt. Similarly, if an attempt is made to start a mutually exclusive process while this command is being executed, such process will result in an error and be interrupted.

- Do not execute commands other than the jslmminfoget command or the jslmreport command while this command is being executed.
- Do not interrupt the execution of this command with the action to close the command prompt executing the command or by pressing Ctrl+C on the keyboard.
- As the processing of a rollback of the database is executed after the execution of a command is interrupted, executing a command that is mutually exclusive with this command or a window operation during the rollback process generates a database error. If a database error is generated upon execution of a command or window operation following an interruption of the execution of a command, try to execute the command again after waiting a while.

# **Return values**

Return values	Description		
0	Connection of SLM - Manager has been normally terminated.		
1	Connection of SLM - Manager has failed.		
130	The process has been interrupted with <b>Ctrl+C</b> on the keyboard.		

# Usage examples

# Function

This command deletes unneeded data, including the data that remained when monitored services were deleted and data that was created when database errors occurred. By deleting unneeded data, you can obtain free space for the database.

To ensure the efficient use of space in the database, we recommend that you clean up the database periodically (on a daily to weekly basis).

Execute this command while the following SLM - Manager services are running:

- SLM Manager DB Service (service name: HiRDBEmbeddedEdition JL0)
- SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service)

In a cluster system, execute this command on the active server (if the command is executed on the standby server, an error will result).

If the -r option is specified, this command deletes RD areas to which no monitored service is assigned. If the -r option is omitted, this command deletes any unneeded data in an RD area, but the RD area will remain and can be reused.

jslmmgrdbcleanup is set as the identifier in the messages that this command outputs to the message logs.

For details about the message logs, see 7.2.4 Message logs.

For details about the messages displayed during command execution, see 11.3 Messages.

# Format

```
jslmmgrdbcleanup [ -r ]
```

# **Execution permission**

User account that belongs to the OS's Administrators group

# Storage folder

```
SLM-Manager-installation-folder\mgr\bin\
```

# Arguments

-r

Deletes RD areas to which no monitored service is assigned, in addition to deleting unneeded data in the database.

# Notes

- Do not execute another command while this command is executing, except for the jslmminfoget command.
- This command does not apply to access logs. Access logs are deleted using the standard OS commands for deleting files and folders.
- If you delete a monitored service without executing the jslmmgrdbcleanup command, the RD area that was used by the applicable monitored service will not be reused. If no reusable RD area exists, a new RD area is created

<sup>9.</sup> Commands

when a monitored service is newly registered. When estimating the size of the database area, if there is no leeway in the number of monitored services, you must first delete a monitored service and then execute the jslmmgrdbcleanup command to make the RD area reusable.

• If you specify the -r option, do not register or delete any monitored services while this command is being executed.

# **Return value**

Return value	Description		
0	atabase cleanup processing terminated normally.		
1	Database cleanup processing failed.		
130	The process has been interrupted by pressing <b>Ctrl+C</b> .		

# Example

C:\Program Files\HITACHI\JP1ITSLM\mgr\bin\jslmmgrdbcleanup

# 9.9 jsImmgrexport (exports service monitor information)

### Function

This command exports service monitor information needed for data migration. This export processing can be performed for a single monitored service or for all monitored services.

Execute this command while the following SLM - Manager services are running:

- SLM Manager DB Service (service name: HiRDBEmbeddedEdition JL0)
- SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service)

In a cluster system, execute this command on the active server (if the command is executed on the standby server, an error will result).

jslmmgrexport is set as the identifier in the messages this command outputs to the message logs.

For details about the message logs, see 7.2.4 Message logs.

For details about the messages displayed during command execution, see 11.3 Messages.

### Format

```
jslmmgrexport [ -g service-group-name -s service-name ]
    -t { export-period | all | none }
    -o output-file-name
    [ -f ]
```

### **Execution permission**

User account that belongs to the OS's Administrators group

### Storage folder

```
SLM-Manager-installation-folder\mgr\bin\
```

### Arguments

-g service-group-name

Specifies the name of the service group to which the monitored service to be exported belongs. If a nonexistent service group name is specified, an error results. A name beginning with a hyphen (-) cannot be specified.

When you specify this option, you must also specify the -s option.

To export service monitor information for all monitored services, omit both this option and the -s option. However, if no monitored services have been registered in SLM, executing this command with this option and the -s option both omitted results in an error.

```
-s service-name
```

Specifies the name of the monitored service whose service monitor information is to be exported. If a nonexistent service name is specified, an error results. A name beginning with a hyphen (-) cannot be specified.

<sup>9.</sup> Commands

When you specify this option, you must also specify the -g option.

To export service monitor information for all monitored services, omit both this option and the -g option. However, if no monitored services have been registered in SLM, executing this command with this option and the -g option both omitted results in an error.

-t

Specifies the period for which service performance data is to be exported. The following explains the specification method.

• export-period

Specifies the number of days whose service performance data is to be exported.

The permitted value is from 1 through 60 (numeric characters). If the specified value is not within this range, an error results.

The command exports as many days' worth of past service performance data as specified here, using the time the date value changes as the reference. The data at the reference time is excluded. The time is based on the local time of the computer used to execute the command.

The following table shows the relationship between when the command is executed and the period subject to export processing.

### Table 9-16: Relationship between when the command is executed and the period subject to export processing

No.	Example specification	Command execution date and time	Reference date and time	Period subject to export processing
1	1	2011/11/15 00:00:00	2011/11/15 00:00:00	2011/11/14 00:00:00 through 2011/11/14 23:59:59
2	7	2011/11/15 12:34:56	2011/11/15 00:00:00	2011/11/08 00:00:00 through 2011/11/14 23:59:59
3	30	2011/11/15 23:59:59	2011/11/15 00:00:00	2011/10/16 00:00:00 through 2011/11/14 23:59:59

• all

Specifies that all service performance data that has been accumulated in the database is to be exported.

• none

Specifies that no service performance data is to be exported.

#### -0 output-file-name

Specifies as an absolute path the name of the output file to which the data is to be exported. Specification in UNC representation is not supported.

The command collects the data to be exported and then outputs it in binary format to the specified file.

The service performance information subject to export processing consists of real-time information and past information. After a period of a specific amount of time, service performance information is compressed and then retained as past information. Any information whose age is less than the specific amount of time is retained as real-time information without being compressed. Therefore, the size of the output file changes even when the service monitor information is the same because the amount of real-time data varies depending on when the command is executed.

-f

<sup>9.</sup> Commands

Specifies that if the output file specified in the -0 option already exists, that file is to be overwritten with the export data.

If this option is omitted and the specified output file already exists, the command results in an error.

### Notes

- This command's processing and the following operations are mutually exclusive:
  - Registering and deleting monitored services
  - Registering and deleting Web transactions
  - Editing Web transactions (including changing their order)
  - Adding, editing, copying, and deleting report templates
  - Updating configuration information
  - Saving monitoring item settings for system performance
  - Setting up service performance monitoring
  - Setting up system performance monitoring
  - Setting up availability monitoring

If this command is executed while any mutually exclusive processing is underway, the command results in an error and its processing is canceled. Similarly, if any mutually exclusive processing is launched while this command is executing, that processing results in an error and is canceled.

- Do not change the exported data. If the exported data is changed, it can no longer be used for import processing.
- Do not execute commands other than the jslmminfoget command or the jslmreport command while this command is being executed.
- Do not cancel execution of this command by closing the command prompt that is executing this command or by pressing Ctrl+C on the keyboard.
- If this command was canceled while its execution was underway, do not use the jslmmgrimport command to import the export data file that was partially created by this command.
- This command cannot be used to export access logs.
- The time required to perform the export processing depends on the amount of data to be exported. As the amount of data to be exported grows, so does the time required to perform the export processing.

To shorten the execution time of this command, specify one or both of the following to reduce the amount of data to be exported:

- Specify the -g option and the -s option to limit the monitored services to be exported.
- Specify the export period or none for the -t option to limit the number of days for which data is exported.

# Return value

Return value	Description	
0	Export processing terminated normally.	
1	Export processing failed.	
130	The process has been interrupted by pressing Ctrl+C.	

# Example

```
C:\Program Files\HITACHI\JP1ITSLM\mgr\bin\jslmmgrexport -g GroupA -s ServiceA -t 1 -o D:\data\itslm_export
```

# 9.10 jsImmgrimport (imports service monitor information)

# Function

This command imports service monitor information that was exported by the jslmmgrexport command.

You can import the data that was exported for a monitored service by the jslmmgrexport command as is or by specifying the name of a monitored service and the name of the service group to which the monitored service is to belong. If data was exported for all monitored services, you import that data without specifying a monitored service name or service group name.

For both import methods, the command processing depends on whether the name of an exported monitored service or the name of an exported service group to which the monitored service belongs that is contained in the data to be imported already exists at the import destination.

The following table describes the processing when service monitor information is imported.

No.	Data to be imported		or the name of the service group to which ntained in the data to be imported already	
		Exists <sup>#</sup>	Does not exist	
1	Monitored service management information	Data is imported according to the specified -m option.	Target data is imported as is.	
2	Performance data and list of events	Data is imported according to the specified -p option.		

Table 9-17: Processing when service monitor information is imported

#

If the import target already contains a monitored service with the same name as one that is in the data to be imported, monitoring of that monitored service must be stopped.

A monitored service added by import processing is applied to the windows at the time of login.

If you need to change definition information for a monitored service because the IP address of the Web server that provides the monitored service or the IP address of SLM - UR has changed, you can edit the definition information in the imported data. However, if the imported data was created by exporting information for all monitored services, the definition information cannot be edited.

Execute this command while the following SLM - Manager services are running:

- SLM Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0)
- **SLM Manager Service** (service name: JP1\_ITSLM\_MGR\_Service)

In a cluster system, execute this command on the active server (if the command is executed on the standby server, an error will result).

jslmmgrimport is set as the identifier in the messages this command outputs to the message logs.

For details about the message logs, see 7.2.4 Message logs.

For details about the messages displayed during command execution, see 11.3 Messages.

# Format

```
jslmmgrimport -i import-data-file-name
  [ -g service-group-name -s service-name ]
   [ -m [ IP-address-of-Web-server IP-address-of-SLM-UR ] ]
   [ -p ]
```

# **Execution permission**

User account that belongs to the OS's Administrators group

# Storage folder

SLM-Manager-installation-folder\mgr\bin\

# Arguments

#### -i import-data-file-name

Specifies as an absolute path the name of the file from which data is to be imported. Specification in UNC is not supported.

If the specified file does not exist, is not accessible, or does not contain valid data exported by the jslmmgrexport command, an error results.

#### -g service-group-name

Specifies the name of the service group to which the target monitored service belongs.

If both this option and the -s option are omitted, the command uses the appropriate value from the data that is to be imported as is.

If the data to be imported is for all monitored services, do not specify either the -s option or the -g option. If these options are specified in such a case, an error results.

You can specify for the name of the service group a name that differs from the one used for the export processing. However, the specified name must be a string of characters that does not include the characters ", /, [, ], ;, :, |, =, ,, +, ?, <, >, space, tab, machine-dependent characters, and control characters. If the specified name does not observe this limitation, an error results. Also, a name beginning with a hyphen (–) cannot be specified.

-s service-name

Specifies the name of the target monitored service.

This option can be omitted together with the -g option. If this option is omitted, the command uses the value from the data that is to be imported as is.

If the data to be imported is for all monitored services, do not specify either the -s option or the -g option. If these options are specified in such a case, an error results.

You can specify for the name of the monitored service a name that differs from the one used for the export processing. However, the specified name must be a string of no more than 64 characters that does not include the characters ", , , ', \, space, tab, machine-dependent characters, and control characters. If the specified name does not observe this limitation, an error occurs. Also, a name beginning with a hyphen (–) cannot be specified.

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-m

Specifies that if the import target already contains a monitored service with the same name as in the data to be imported, the imported data is to overwrite the management information for that monitored service.

If the import target contains a Web transaction with the same name as in the data to be imported, the display order in effect at the import target remains in effect. If the import target does not contain a Web transaction with the same name, the imported data is added following the Web transactions already registered at the import target.

If this option is omitted and the import target already contains both the name of the service group to which the monitored service specified in the -g option belongs and the name of the monitored service specified in the -g option, the command results in an error.

An error also occurs if import processing will result in the number of Web transactions for a service exceeding 10 (which is the maximum value).

This option is also used to change in the monitored service management information the IP address of the Web server that provides the monitored service and the IP address of SLM - UR. The following shows the specification method.

• IP address of Web server

Specify the new IP address of the Web server that will be providing the monitored service. The specification format is as follows:

XXX.XXX.XXX.XXX

Legend:

XXX: A number from 0 through 255

If the value is specified in any other format, an error results.

• IP address of SLM - UR

Specify the new IP address of SLM - UR. The specification format is as follows: *XXX*.*XXX*.*XXX*.*XXX*.

Legend:

XXX: A number from 0 through 255

If the value is specified in any other format, an error results.

When data exported for multiple monitored services is to be imported or the number of Web transactions per monitored service exceeds 10 as a result of import processing, specifying this option results in an error.

A service in a system monitoring configuration cannot be imported as a service in a service monitoring configuration by specifying the IP address of the Web server and the IP address of SLM - UR. Similarly, a service in a service monitoring configuration cannot be imported as a service in a system monitoring configuration.

-p

Specifies that service performance is to be imported.

When this option is specified and the import target contains a monitored service whose name is the same as a name in the data to be imported, this option overwrites with the imported data the performance of the existing monitored service within the range of the service performance information contained in the imported data. When overwrite import processing is performed, only the data that is within the retention period is imported based on the data with the most recent time, and any data whose retention period has expired is not imported.

<sup>9.</sup> Commands

The command does not import service performance when this option is omitted, in which case the command imports only management information for monitored services.

### Notes

- The definition information that is edited by this command is the information contained in the imported data. The file from which the data was exported is not edited.
- This command's processing and the following operations are mutually exclusive:
  - Registering and deleting monitored services
  - Registering and deleting Web transactions
  - Editing Web transactions (including changing their order)
  - Starting monitoring of a monitored service that is subject to overwrite import processing because the -m option is specified
  - Adding, editing, copying, and deleting report templates
  - Updating configuration information
  - · Saving monitoring item settings for system performance
  - Setting up service performance monitoring
  - Setting up system performance monitoring
  - Setting up availability monitoring

If this command is executed while any mutually exclusive processing is underway, the command results in an error and its processing is canceled. Similarly, if any mutually exclusive processing is launched while this command is executing, that processing results in an error and is canceled.

- This command can import data that was exported by SLM Manager version 09-51 or later.
- Do not execute another command while this command is executing, except for the jslmminfoget command.
- Do not cancel execution of this command by closing the command prompt that is executing this command or by pressing Ctrl+C on the keyboard.
- If this command is canceled while it is executing, partially processed data might remain in the database. If you canceled this command while its execution was underway, clean up the database to delete any unneeded data.

For details about cleaning up the database, see 9.8 jslmmgrdbcleanup (cleans up database).

When this command has been canceled, rollback processing is performed on the database. Therefore, if this command, any mutually exclusive command, or a window operation is performed while rollback processing is underway, a database error will occur. If a database error occurs during command execution or during a window operation after this command has been canceled, wait a while, then re-execute the command or operation.

- This command does not check whether a service group with the name specified in the -g option already exists. For this reason, import processing can be performed even though a nonexistent service group name is specified. To manipulate such a monitored service, use JP1/Base to register its service group (JP1 resource group) name.
- The time required to perform the import processing with the -p option specified depends on the amount of data to be imported. As the amount of data to be imported grows, so does the time required to perform the import processing. To shorten the time required to execute this command, reduce the amount of data to be exported by specifying one or both of the following when you use the jslmmgrexport command to export data:
  - Specify the -g option and the -s option to limit the monitored services to be exported.
  - Specify the export period or none for the -t option to limit the number of days for which data is exported.

# **Return value**

Return value	Description	
0	Import processing terminated normally.	
1	Import processing failed.	
130	The process has been interrupted by pressing <b>Ctrl+C</b> .	

# Example

```
C:\Program Files\HITACHI\JP1ITSLM\mgr\bin\jslmmgrimport -i D:\data\itslm_export -g Gr
oupA -s ServiceA -m 10.150.100.10 10.150.200.20 -p
```

# 9.11 jsImmgrls (confirming the system management status of SLM - Manager)

# Function

The system management status of SLM - Manager is displayed in the window of the command prompt.

This command is to be executed upon satisfying the following conditions:

- The following services of SLM Manager have been started.
  - Service SLM Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0)
  - Service SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service)

Execute the command with the active server in the case of a cluster system. If the command is executed on the standby server, an error will result.

When using the master/slave configuration of SLM – Manager, execute this command in relation to the master instance of SLM - Manager. If the command is executed with a slave instance of SLM - Manager, an error will result.

The indicator "jslmmgrls" is configured to messages output to the message log by this command.

For details about the message log, see 7.2.4 Message logs.

For details about the messages that are output when commands are executed, see 11.3 Messages.

#### Format

jslmmgrls

#### **Execution permission**

User account that belongs to the OS's Administrators group

# Storage folder

SLM-Manager-installation-folder\mgr\bin\

#### Notes

- Do not execute commands other than the jslmminfoget command or the jslmreport command while this command is being executed.
- Do not interrupt the execution of this command with the action to close the command prompt executing the command or by pressing Ctrl+C on the keyboard.
- To obtain information about a slave instance of SLM Manager, the service "SLM Manager Web Service" (service name: JP1 ITSLM MGR Web Service) must be running on the slave instance of SLM Manager.
- If Japanese is used in a service name or service group name, set "UTF-8" for the character encoding of the command prompt.

#### **Return values**

Return values	Description
0	Confirmation of the system management status of SLM - Manager has been normally terminated.
1	Confirmation of the system management status of SLM - Manager has failed.
130	The process has been interrupted with <b>Ctrl+C</b> on the keyboard.

#### Example

```
C:\Program Files\HITACHI\JP1ITSLM\mgr\bin\jslmmgrls
```

# **Output example**

The output format of the system management status of SLM - Manager output on the window of the command prompt by this command is as follows:

```
***** SLM - Manager information *************
Туре
            : { Single | Master | Slave }
IP address : IP address of SLM - Manager
Port number : Port number of SLM - Manager
Cooperation SLM - UR<sup>#1</sup>
    IP address : IP address of SLM - UR
    Port number : Port number of SLM - UR
Cooperation PFM - Manager<sup>#2</sup>
    IP address : IP address of PFM - Manager
    Port number : Port number of PFM - Manager
Registered services information
    Total
                                   : Number of monitored services
        Number of services
        Number of monitored targets : Number of monitored targets
        Number of monitor items : Number of monitoring items
    Service unit
        Service group name#1
            Service name<sup>#1</sup>
                Number of Monitored targets : Number of monitored targets
                Number of Monitor items : Number of monitoring items
```

#1

When there are multiple subjects, the display will be repeated for as many subjects that exist.

#2

This is displayed when an item exists but will not be displayed when items do not exist.

Output information of the output format is as follows:

Table 9-18: Output information of the output format

Item	Description
Туре	<ul> <li>The type of SLM - Manager. The meanings of the values output for this item are as follows:</li> <li>Single <ul> <li>SLM - Manager of the single-manager configuration</li> </ul> </li> <li>Master <ul> <li>SLM - Manager (master) in the master/slave configuration</li> <li>Slave</li> </ul> </li> </ul>

Item	Description
Туре	SLM - Manager (slave) in the master/slave configuration
IP address	The IP address of SLM - Manager.
Port number	The port number of SLM - Manager.
Cooperation SLM – UR	<ul> <li>Information about SLM - UR linked with SLM - Manager. The meanings of the values output for this item are as follows:</li> <li>IP address</li> <li>IP address of SLM - UR linked with SLM - Manager</li> <li>Port number</li> <li>Port number of SLM - UR linked with SLM - Manager</li> </ul>
Cooperation PFM - Manager	<ul> <li>Information about PFM - Manager linked with SLM - Manager. The meanings of the values output for this item are as follows:</li> <li>IP address <ul> <li>IP address</li> <li>IP address of PFM - Manager linked with SLM - Manager</li> </ul> </li> <li>Port number <ul> <li>Port number of PFM - Manager linked with SLM - Manager</li> </ul> </li> </ul>
Registered services information	Service information registered with SLM - Manager. The Total and Service unit are output for this item.
	Total
	The total number of each item. The meanings of the values output for this item are as follows:
	Number of services: Total number of services
	Number of Monitored target: Total number of monitored targets
	Number of monitor items: Total number of monitor items
	Service unit
	Information on the service units. The meanings of the values output for this item are as follows:
	Service group name: Service group name
	Service name: Service name
	Number of Monitored target: Number of monitored targets registered with the service
	Number of monitor items: Number of monitor items registered with the service

# Function

This command creates an execution environment for SLM - Manager. It can also be used to reconfigure the execution environment for an existing SLM - Manager.

You execute this command after you have installed SLM - Manager.

The command execution results are output to the standard output and displayed in the console window. For details about the messages displayed during command execution, see 11.3 Messages.

The command performs one of the following processes, depending on the status of the execution environment at the time of command execution:

Creates an execution environment (when there is no existing execution environment):

This command creates an execution environment when it is executed immediately after SLM - Manager has been newly installed or after the execution environment for SLM - Manager was discarded by unsetup processing.

Reconfigures the existing execution environment (when an execution environment already exists):

If this command is executed when the execution environment for a configured SLM - Manager already exists, the command reconfigures the existing execution environment for SLM - Manager.

You reconfigure the execution environment in the following cases:

- The host name, IP address, or port number settings in the execution environment for a configured SLM Manager are to be changed
- The embedded Web server environment in the execution environment for a configured SLM Manager is to be reconfigured
- The execution environment for a configured SLM Manager is to be reconfigured after an upgrade installation was performed

Note that an RD area for the embedded database is not created when the SLM - Manager execution environment is reconfigured.

# Format

jslmmgrsetup [ -c { online | standby } ] absolute-path-of-options-file

# **Execution permission**

User account that belongs to the OS's Administrators group

# Storage folder

```
SLM-Manager-installation-folder\mgr\bin\
```

#### Arguments

-c

Specifies that the execution environment used in a cluster system is to be configured. The specification method is as follows:

• online

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Specifies that the execution environment for the active system is to be configured or reconfigured.

When a new execution environment is configured for the active system, an RD area for the embedded database is created.

• standby

Specifies that the execution environment for the standby system is to be configured or reconfigured.

When a new execution environment is configured for the standby system, an RD area for the embedded database is not created.

#### absolute-path-of-options-file

Specifies the absolute path for an options file that is to be created in text format. This file can be stored at any desired location. The absolute path of the options file storage location must be a maximum of 255 bytes of characters, including the file name (any name).

An options file template is stored at the following location:

```
SLM-Manager-installation-folder\mgr\template\mgr\conf\jplitslm setup.opt
```

The following shows the definitions in the options file:

```
manager_host=host-name-or-IP-address-of-SLM-Manager
manager_port=port-number-of-SLM-Manager
psb_Listen=listen-port-number-of-embedded-Web-server
psb_ServerName=host-name-or-IP-address-of-embedded-Web-server
psb_connector_port=port-number-of-internal-communications-port-of-embedded-Web-server
psb_shutdown_port=port-number-of-completion-message-receiving-port-of-embedded-Web-se
rver
hdb_port=listen-port-number-of-embedded-database
hdb_area_path=RD-area-folder-name-of-embedded-database
hdb_share_area_path=path-of-shared-folder-for-creating-RD-area-for-embedded-database-
when-running-in-cluster-system
hdb_area_size=capacity-of-embedded-database-area
manager_type = Type of SLM - Manager
master_host = Host name or IP address of the master instance of SLM - Manager
master_port = Port number of the master instance of SLM - Manager
```

The following table provides the details of the definition items.

Table 9-19:	Details of definition	items in options file for	<sup>·</sup> SLM - Manager
-------------	-----------------------	---------------------------	----------------------------

No.	Definition item	Specificatio n	Description	Default value
1	manager_host	R	Specifies the host name or IP address of the host on which SLM - Manager is installed, as the information for identifying SLM - Manager's execution environment. If SLM is running in a cluster system, specify the logical host name or logical IP address.	
2	manager_port	Ο	Specifies the port number used by SLM - Manager, as a number in the range from 1 through 65535. <sup>#1</sup>	20904
3	psb_Listen	0	Specifies the listen port number used by the embedded Web server, as a number in the range from 1 through 65535. <sup>#2</sup>	20900

No.	Definition item	Specificatio n	Description	Default value
4	psb_ServerName	R	Specifies the host name or IP address of the embedded Web server.	localhost
5	psb_connector_port	0	Specifies the port number of the internal communications port of the embedded Web server, as a number in the range from 1 through 65535. <sup>#1</sup>	20901
6	psb_shutdown_port	0	Specifies the port number of the completion- message receiving port of the embedded Web server, as a number in the range from 1 through 65535. <sup>#1</sup>	20902
7	hdb_port	0	Specifies the listen port number used by the embedded database, as a number in the range from 5001 through 65535.	20903
			An error results if any of the following numbers is specified:	
			<ul> <li>Number outside the permitted range</li> <li>Port number that is already specified in the services file</li> </ul>	
			• Port number that is already in use	
			Note that if an ephemeral port number (port number that can be used freely temporarily) is specified, that port number might correspond to a port number already in use.	
8	hdb_area_path <sup>#3</sup>	R	Specifies the absolute path of the folder storing the RD area for the embedded database. Specify a folder on the local disk as 1 to 130 characters.	
			This value must begin with a drive name (one character from A to Z or a to z or a colon (:)) and consist of the characters A to Z, a to z, 0 to 9, underscore (_), period (.), parentheses (()), backslash ( $\)$ , and space.	
			None of the following is permitted:	
			<ul><li>Specification in UNC representation</li><li>Specification containing a network drive</li></ul>	
			• Specification of a drive name only	
			<ul> <li>Specification containing the SLM - Manager installation folder</li> </ul>	
			• Specification containing an SLM - UR installation folder	
9	hdb_share_area_pat h <sup>#3</sup>	O <sup>#4</sup>	Specifies the path of the shared folder in which an RD area for the embedded database is to be created when running in a cluster system.	
			The same absolute path must be specified for both the active and standby systems. If SLM is running in a non-cluster system, specification	
			of this definition item is ignored.	
			The path must be expressed as a maximum of 110 characters. This value must begin with a drive name (one character from A to Z or a to z	
			or a colon (:)) and consist of the characters A to Z, a to z, 0 to 9, underscore ( ), period (.),	
			parentheses ( ( ) ), backslash ( $\overline{\)}$ , and space.	
			None of the following is permitted:	

No.	Definition item	Specificatio n	Description	Default value
9	hdb_share_area_pat h <sup>#3</sup>	O <sup>#4</sup>	<ul> <li>Specification in UNC representation</li> <li>Specification containing a network drive</li> <li>Specification of a drive name only</li> <li>Specification containing the SLM - Manager installation folder</li> <li>Specification containing an SLM - UR installation folder</li> </ul>	
10	hdb_area_size <sup>#3</sup>	0	Specifies the size of the embedded database area for storing the data handled by SLM - Manager. Specify an integer in the range from 5000 through 1048575 (MB). If the specified value is not within this range, an	39000
			error results. Specify for this definition a value that is equal to or greater than the value estimated in How to estimate the size of the database area below. If a large value is specified, database initialization processing will require more time	
			at setup. This definition is ignored when the execution environment is being reconfigured.	
11	manager_type	O <sup>#5, #6</sup>	Specify the type of SLM – Manager from the following. Single	Single
			Single-manager configuration	
			Master Master instance of SLM - Manager in the master/slave configuration	
			Slave Slave instance of SLM - Manager in the master/slave configuration	
			The entry is not case-sensitive. If a character string other than the above is specified, an error results.	
12	master_host	O#6	As information for identifying the execution environment of the master instance of SLM – Manager, set the host name or the IP address of the machine on which the master instance of SLM – Manager is installed. The jslmmgrsetup command does not check whether the value is valid.	
13	master_port	O	Specifies the port number used for RMI communication between the master and slave instances of SLM - Manager as a single-byte number in the range from 5001 through 65535 <sup>#1</sup> The jslmmgrsetup command will not check whether not the value is valid.	20904

#### Legend:

- R: Specification is required.
- O: Specification is optional.
- --: Not applicable

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#1

If the specified value is not within the permitted range, setup is completed, but an error occurs when the SLM - Manager service SLM - Manager Service (service name: JP1\_ITSLM\_MGR\_Service) starts.

#2

If the specified value is not within the permitted range, setup is completed, but an error occurs when the SLM - Manager service SLM - Manager Web Service (service name: JP1 ITSLM MGR Web Service) starts.

#### #3

If you are reconfiguring the execution environment for a configured SLM - Manager, do not change the existing value.

#### #4

Specification of this property is required when operating with a cluster system.

#### #5

Specification of this property is required for the master instance of SLM - Manager.

#### #6

Specification of this property is required for a slave instance of SLM - Manager.

#### Notes

- If an error occurs during setup, eliminate the cause of the error and re-execute the command. If configuration of a new execution environment has failed and command arguments are to be changed from those used during the previous execution, first undo the setup, and then re-execute the command.
- The options file used during setup is renamed jplitslm\_setup.opt after command execution and stored at the following location:

SLM-Manager-installation-folder\mgr\conf\jplitslm setup.opt

- Do not execute another command, including this command, while this command is executing.
- If the folder shown below contains a system definition file, the command renames that system definition file by adding .bk, saves it in the same folder, and then creates a new system definition file:

*SLM-Manager-installation-folder*\mgr\conf\

If a file with the same name already exists when the system definition file is saved, the existing file is overwritten. If the file save processing fails, setup fails. The values of definition items contained in the saved system definition file are inherited to the new system definition file. However, for the definition items that were specified in the system definition file when the command was executed, the specified values are set. Comments are not inherited.

- Do not terminate setup processing by pressing Ctrl+C or closing the window. Also, in the event of an error, wait until setup is completed before proceeding.
- Before you start the setup processing, terminate all other resident software programs, including other installers and applications (other applications include the jslmursetup and jslmurunsetup commands).
- If setup is performed with the -c option specified in the command and any of a set of specific errors occurs during operation, the Windows services are closed by SLM Manager. For details about the errors that result in a stoppage of the Windows services, see 6.1.3 Failover timing.
- If a definition item is omitted, its default value is used.
- If you are reconfiguring the execution environment of a configured SLM Manager, make sure that you use any setup option that was used during the previous configuration.

- If you are restoring or migrating the database, specify for the hdb\_area\_size definition item in the options file that is used for setting up the restored environment or target environment for migration a value that is equal to or greater than the value in the backed up environment or source environment for migration.
- For the size of the current database area, see the following file that is created when the jslmmgrsetup command is executed:

```
SLM-Manager-installation-folder\mgr\conf\jplitslm_setup.opt
```

Note that this file is updated if setup is performed again (so, if an attempt is made to change the database capacity using an erroneous method, it will no longer be possible to determine the current size).

Determine the current size from the size of the following folder that was specified in the setup file:

*folder-specified-in-hdb\_area\_path*\SLMSYS04

#### **Return value**

Return value	Description
0	Setup processing terminated normally.
1	Setup processing failed.

#### Example

When SLM is running in a non-cluster system:

```
C:\Program Files\HITACHI\JP1ITSLM\mgr\bin\jslmmgrsetup C:\Users\Administrator\Desktop \jp1itslm_setup.opt
```

When SLM is running in a cluster system:

```
C:\Program Files\HITACHI\JP1ITSLM\mgr\bin\jslmmgrsetup -c online
C:\Users\Administrator\Desktop\jp1itslm_setup.opt
```

#### How to estimate the size of the database area

Specify in the hdb\_area\_size definition item in the options file a value that is equal to or greater than the value obtained from the formula shown in the figure below.

#### Figure 9-1: Formula for estimating the size of the database area

Size of database area (MB)

```
= \sum_{i=1}^{n} S_i + 3250
Legend:
n: Total number of monitored services in SLM - Manager
S<sub>i</sub>: Total size for a monitored service
```

 $S_i$  size for a monitored service (MB)

 $= (T + 1) \times 1750 + \uparrow / \div 10 \uparrow \times 1500$ 

Legend:

T: Number of Web transactions registered for the monitored service

*I*: Number of monitoring items for monitoring system performance that are registered for the monitored service

Note:

↑ ↑ means that the calculation result is to be rounded up. For example,  $\uparrow 11 \div 10\uparrow$  results in a value of 2.

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# 9.13 jslmmgrunsetup (undoes SLM - Manager setup)

#### Function

This command discards the execution environment for SLM - Manager.

This command is used when the settings specified during setup are to be changed without uninstalling SLM - Manager.

The command execution results are output to the standard output and displayed in the console window. For details about the messages displayed during command execution, see 11.3 Messages.

# Format

jslmmgrunsetup

# **Execution permission**

User account that belongs to the OS's Administrators group

# Storage folder

 ${\it SLM-Manager-installation-folder \mbox{mgr\bin}}$ 

#### Notes

• When this command is executed, the RD area for the embedded database is deleted. If you want to inherit previously accumulated data, such as during re-setup, you must migrate the database. For details about migrating the database, see 8.3.3 Migrating the database.

If an error occurs during unsetup processing, eliminate the cause of the error and re-execute the command.

- Do not execute another command, including this command, while this command is executing.
- Do not terminate unsetup processing by pressing Ctrl+C on the keyboard or closing the window. In the event of an error, wait until the unsetup processing is completed before proceeding.
- Before you start the unsetup of SLM Manager, terminate the following services and all other resident software programs, and then execute the jslmmgrunsetup command:
  - Services of the instance of SLM Manager for which unsetup is to be performed
  - Other installers and other resident software programs such as applications

Other applications include the jslmursetup and jslmurunsetup commands. For details about how to terminate the services of SLM - Manager, see 2.1.4 Terminating SLM - Manager.

#### **Return value**

Return value	Description	
0	Unsetup processing terminated normally.	
1	Unsetup processing failed.	

# Example

C:\Program Files\HITACHI\JP1ITSLM\mgr\bin\jslmmgrunsetup

# 9.14 jslmminfoget (collects data needed for investigating the cause of SLM - Manager errors)

#### Function

This command collects error information for SLM - Manager and information needed for error analysis.

This command can be executed when SLM - Manager setup has been completed.

Use the information collected by executing this command as data when an error has occurred in SLM - Manager and you need to contact the system administrator.

The command execution results are output to the following file:

```
current-command-execution-folder\jslmminfoget.zip
```

For details about the messages displayed during command execution, see 11.3 Messages.

#### Format

jslmminfoget

# **Execution permission**

User account belonging to the Administrator group of the OS

# Storage folder

```
SLM-Manager-installation-folder\mgr\bin\
```

#### Notes

- When this command is executed, the jslmmgrls command executes at the same time.
- Do not execute this command in a current folder whose absolute path contains any special character that requires enclosure in quotation marks at the command prompt (the following are the applicable special characters: &, (), [], {}, ^, =, ;, !, ', +, , `, ~, and @). If the command is executed in this manner, collection of the data needed for error analysis will fail (and the return value will not necessarily be 1).

If this command is executed in a current folder that contains a special character in the absolute path, the temporary folder (jslmminfoget\_work) might be created under a non-current folder and that temporary folder might remain after the command has terminated. In such a case, the jslmminfoget\_work folder will have been created in a folder with a similar name to that of the current folder used for command execution in the same hierarchy as the current folder. Use Windows Explorer to locate this folder and delete it.

- While this command is executing, do not execute the jslmdbcopy, jslmdbrstr, jslmmgrsetup, or jslmmgrunsetup command.
- Do not cancel execution of this command by pressing **Ctrl**+**C** on the keyboard. If command execution is canceled by this method, the following folder or files might remain:
  - jslmminfoget\_work folder (work folder used by the jslmminfoget command)
  - jslmminfoget.zip
  - tmp*about-20-numeric-characters*.tmp (intermediate file of jslmminfoget.zip)

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If you canceled execution of this command, use Windows Explorer to locate these files and delete them.

- If the command fails to store the collected file in jslmminfoget.zip, the following file might remain after command execution:
  - tmp*about-20-numeric-characters*.tmp (intermediate file of jslmminfoget.zip)

If the command failed to store the collected file in jslmminfoget.zip, use Windows Explorer to locate the tmp*about-20-numeric-characters*.tmp file and delete it.

#### **Return value**

Return value	Description	
0	Collection of SLM - Manager error information terminated normally.	
1	Collection of SLM - Manager error information failed.	

# Example

C:\Program Files\HITACHI\JP1ITSLM\mgr\bin\jslmminfoget

<sup>9.</sup> Commands

# 9.15 jslmreport (outputs report data to a CSV file)

#### Function

This command outputs report data, stored in the database, in CSV file format.

Execute this command under the following conditions:

- SLM Manager version 10-10, or a version of SLM Manager that uses the same data format as version 10-10, has been set up.
- SLM Manager databases of version 10-00 or earlier have been restored using the overwrite setup.
- The SLM Manager services SLM Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO) and SLM Manager Service (service name: JP1 ITSLM MGR Service) are running.

If you are in a cluster environment, execute this command on the active server. You cannot execute it on a standby server.

For details about messages displayed during command execution, see 11.3 Messages.

# Format

```
jslmreport -t { service | system | info | overview | graph }
    -g service-group-name
    -s service-name
    -d report-start-date
    -i { lday | lweek | lmonth | 3months }
    -o output-file-name
    [ -f ]
```

# **Execution permission**

A user account that belongs to the OS's Administrators group

# Storage folder

```
SLM-Manager-installation-folder\mgr\bin\
```

# Arguments

-t

Specifies the category of report data to output as a CSV file. One of the following categories can be specified:

• service

Specify this to output service performance. Note that service cannot be specified if a service that is not subject to service performance monitoring is specified in the -s option.

• system

Specify this to output system performance.

• info

```
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```

Specify this to output availability information.

• overview

Specify this to output a service availability overview.

• graph

Specify this to output a performance chart.

-g service-group-name

Specifies the name of the service group to which the target monitored service belongs.

-s service-name

Specifies the name of the target monitored service.

-d report-start-date

Specifies the date from which the report on the target monitored service is to begin. It is specified as follows.

Table 9-20: How to specify the report start date

Format	Details
-d YYYYMMDD	<i>YYYY</i> Specifies the year as a four-digit number.
	MM Specifies the month as a two-digit number.
	DD
	Specifies the day as a two-digit number.

- The start date uses the same time zone as SLM Manager.
- The validity of the start date (whether the date exists on the calendar) is not checked.

Specifies the report interval for the target monitored service. It is specified as follows:

• 1day

Specify this to output a one-day report.

• 1week

Specify this to output a one-week report.

• 1month

Specify this to output a one-month report.

• 3months

Specify this to output a three-month report.

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#### -o output-file-name

Specifies the name of the output file, as an absolute path, for the report data.

#### **Output format**

The first line displays header information, and the second and subsequent lines display data. The following describes the output format for each data type.

• Service performance

The service performance output format is as follows.

#### Table 9-21: Service performance output format

No.	Header information	Data beginning on line 2	Data details
1	Service_Performance_Star t_Date	Start date of the report interval	YYYY/MM/DD (year/month/day)
2	Service_Performance_End_ Date	End date of the report interval	YYYY/MM/DD (year/month/day)
3	Service_Performance_Moni tored_Target	Monitored target	Name of the selected monitored target
4	Service_Performance_Moni tor_Item	Monitor item (unit)	<ul> <li>Average response time (milliseconds)</li> <li>Throughput (count/second)</li> <li>Error rate (%)</li> </ul>
5	Service_Performance_Aver age	Average <sup>#1</sup>	<ul> <li>For average response time: <i>Total average response time during the report</i> <i>interval</i> ÷ <i>number of requests during the report</i> <i>interval</i> (milliseconds)</li> <li>For throughput: <i>Number of requests during the report interval</i> <i>(excluding requests whose responses timed out</i> <i>before SLM - UR could receive them</i>) ÷ <i>operation</i> <i>time during the report interval</i> (count/second)</li> <li>For error rate: <i>(Number of times HTTP status returned an error</i> <i>response during the report interval</i> + <i>number of</i> <i>requests whose responses timed out before SLM -</i> <i>UR could receive them</i>) ÷ <i>number of requests</i> <i>during the report interval</i> (%)</li> </ul>
6	Service_Performance_SLO_ Compliance_Ratio	SLO compliance rate <sup>#1</sup>	(1.0 - duration of overages of a threshold $\div$ operation time for one month) $\times$ 100 (%)
7	Service_Performance_VS_P revious_Term	Comparison to a previous period (as a percentage) <sup>#2, #3</sup>	(Average response time during report interval $\div$ average response time during comparison period for the report interval - 1.0) × 100 (%)

#1

The value is rounded to the first decimal place.

#2

The value is rounded to the second decimal place.

#3

When comparing to a previous period, the percentage is calculated for the monitored service's service performance, and the table header and the period used for comparison depend on the report interval setting. The following table shows the relationship between the report interval and the previous period to which the percentage applies.

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# Table 9-22: Relationship between report interval and previous period to which percentage applies

No.	Report interval	Table header	Period used for comparison
1	1 day	Compared to previous day	Day immediately preceding the start date
2	1 week	Compared to previous week	Seven days immediately preceding the start date
3	1 month	Compared to previous month	From the same date in the previous month to the preceding day
4	3 months	Compared to previous quarter	From the same date three months ago to the preceding day

#### • System performance

The system performance output format is as follows.

#### Table 9-23: System performance output format

No.	Header information	Data beginning on line 2	Data details
1	System_Performance_Start _Date	Start date of the report interval	<i>YYYY/MM/DD</i> (year/month/day)
2	System_Performance_End_D ate	End date of the report interval	<i>YYYY/MM/DD</i> (year/month/day)
3	System_Performance_Host	Host	Host name of the selected monitored service
4	System_Performance_Monit ored_Target	Monitored target	Name of the monitoring agent contained in the host
5	System_Performance_Monit or_Item	Monitor item (unit)	Name of a monitoring item contained in the monitoring agent
6	System_Performance_Avera ge	Average <sup>#1</sup>	Average value for the monitoring item
7	System_Performance_SLO_C ompliance_Ratio	SLO compliance rate <sup>#1</sup>	(1.0 - duration of overages of a threshold $\div$ operation time for one month) $\times$ 100 (%)
8	System_Performance_VS_Pr evious_Term	Comparison to a previous period (as a percentage) <sup>#2, #3</sup>	(Average response time during report interval $\div$ average response time during comparison period for the report interval - 1.0) $\div$ 100 (%)

#### #1

The value is rounded to the first decimal place.

#2

The value is rounded to the second decimal place.

#3

When comparing to a previous period, the percentage is calculated for the monitored service's system performance, and the table header and the period used for comparison depend on the report interval setting. For the relationship between the report interval and the comparison against the previous report, see Table 9-22 Relationship between the report interval and the comparison against the previous report.

• Availability information

The availability information output format is as follows.

No.	Header information	Data beginning on line 2	Data details
1	Availability_Info_Start_ Date	Start date of the report interval	YYYY/MM/DD (year/month/day)
2	Availability_Info_End_Da te	End date of the report interval	YYYY/MM/DD (year/month/day)
3	Availability_Info_Servic e_Availability	Service availability % <sup>#1</sup>	(Sum of all operation periods during report interval ÷ (sum of all operation periods during report interval + sum of all error periods during report interval) × 100) (%)
4	Availability_Info_MTTR	MTTR <sup>#2</sup>	Sum of all error periods during report interval ÷ number of error periods during report interval (minutes)
5	Availability_Info_MTBF	MTBF <sup>#2</sup>	Sum of all operation periods during report interval ÷ number of error periods during report interval (minutes)

#### #1

The value is rounded to the second decimal place.

#2

The value is rounded to the first decimal place.

• Service availability overview

The service availability overview output format is as follows.

#### Table 9-25: Service availability overview output format

No.	Header information	Data beginning on line 2	Data details
1	Service_Availability_Ove rview_Date_And_Time	Date and time <sup>#</sup>	Date and time an event related to availability monitoring occurred during the report interval
2	Service_Availability_Ove rview_Event	Event	One of the following events related to availability monitoring that occurred during the report interval: • Service recovery • Start of service monitoring • Stop of service monitoring • Service stop

#### #

Displayed in the format YYYY/MM/DD hh:mm, using the SLM - Manager's time zone.

# Performance chart information output to CSV file

The performance chart information output to the CSV file is as follows.

#### Table 9-26: Performance chart information output to CSV file

No.	Header information	Data beginning on line 2	Data details
1	Date	Date and time	Date and time data acquired from SLM. Displayed in the format <i>YYYY/MM/DD hh:mm</i> , based on the SLM - Manager's time zone
2	Monitoring item average	Monitoring item average value	Average value for the monitoring item
3	Monitoring item max	Monitoring item maximum value	Maximum value for the monitoring item
4	Monitoring item min	Monitoring item minimum value	Minimum value for the monitoring item

No.	Header information	Data beginning on line 2	Data details
		•	
6	Monitoring item average	Monitoring item average value	Average value for the monitoring item
7	Monitoring item max	Monitoring item maximum value	Maximum value for the monitoring item
8	Monitoring item min	Monitoring item minimum value	Minimum value for the monitoring item

Note:

Monitoring items are defined by the following BNF notation:

monitoring-item ::= name-of-monitored-target "/" name-of-monitored-target-within-monitored-service "/" name-of-monitored-target-within-monitored-service ::= "All Web Access" | Web-transaction-name | host-name "/" agent-name

#### **Output character encoding**

UTF-8 character encoding is used.

-f

Specifies that the output file specified in the  $-\circ$  option is to be overwritten if it already exists.

If this option is omitted and the output file already exists, the command results in an error.

#### Notes

- This command's processing and the following operations are mutually exclusive:
  - Registering and deleting monitored services
  - Registering and deleting Web transactions
  - Editing Web transactions (including changing their order)
  - Adding, editing, copying, and deleting report templates
  - Updating configuration information
  - Saving monitoring item settings for system performance
  - Setting up service performance monitoring
  - Setting up system performance monitoring
  - Setting up availability monitoring

If this command is executed while any mutually exclusive processing is underway, the command results in an error and its processing is canceled. Similarly, if an attempt is made to start any mutually exclusive processing while this command is executing, that processing will result in an error and be canceled.

- Do not execute another command while this command is executing, except for the jslmmgrexport command or the jslmminfoget command.
- The service group name and service name must not begin with a hyphen (-).
- Nonexistent dates in the report interval are not subject to aggregation in the CSV file. For example, if the report start date is May 31, and the report interval is set to 1 month, the relevant period is from May 31 to June 30, excluding June 31. As a result, the last day of the report interval will be June 29, which is the day preceding June 30, and the report interval will cover May 31 through June 29. The calculations for comparisons to previous periods are handled in the same way.

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- SLM retains report data for five years.
- If the name of a monitoring item includes a comma (, ) or a double quotation mark ("), that character is replaced with an underscore ( ) in the CSV file.
- Do not cancel execution of this command by closing the command prompt that is executing this command or by pressing **Ctrl+C** on the keyboard.

# **Return value**

Return value	Description
0	The CSV file was output successfully.
1	Output of the report to a CSV file failed.
130	Processing was canceled because Ctrl+C was pressed.

# Example

```
C:\Program Files\HITACHI\JP1ITSLM\mgr\bin\jslmreport -t service -g Group1 -s Service1
-d 20130128 -i 1month -o c:\report.csv -f
```

# 9.16 jslmurinfoget (collects data needed for investigating the cause of SLM - UR errors)

# Function

This command collects error information for SLM - UR and information needed for error analysis.

This command can be executed if the SLM - UR setup has been completed.

Use the information collected by executing this command as data when an error has occurred in SLM - UR and you need to contact the system administrator.

The command execution results are output to the following file:

```
current-command-execution-folder\jslmurinfoget.zip
```

For details about the messages displayed during command execution, see 11.3 Messages.

#### Format

jslmurinfoget

# **Execution permission**

User account belonging to the Administrator group of the OS

# Storage folder

SLM-UR-installation-folder\ur\bin\

#### Notes

Do not execute this command in the current folder whose absolute path contains any special character that requires enclosure in quotation marks at the command prompt (the following are the applicable special characters: &, (), [], {}, ^, =, ;, !, ', +, ,, `, ~, and @). If the command is executed in this manner, collection of the data needed for error analysis will fail (and the return value will not necessarily be 1).

If this command is executed in a current folder that contains a special character in the absolute path, the temporary folder (jslmurinfoget\_work) might be created under a non-current folder and that temporary folder might remain after the command has terminated. In such a case, the jslmurinfoget\_work folder will have been created in a folder with a similar name to that of the current folder used for command execution in the same hierarchy as the current folder. Use Windows Explorer to locate this folder and delete it.

- While this command is executing, do not execute the jslmursetup or jslmurunsetup command.
- Do not cancel execution of this command by pressing **Ctrl+C** on the keyboard. If command execution is canceled by this method, the following folder or files might remain:
  - jslmurinfoget\_work folder (work folder used by the jslmurinfoget command
  - jslmurinfoget.zip
  - tmp*about-20-numeric-characters*.tmp (intermediate file of jslmurinfoget.zip)

If you canceled execution of this command, use Windows Explorer to locate these files and delete them.

- If the command fails to store the collected file in jslmurinfoget.zip, the following file might remain after command execution:
  - tmp*about-20-numeric-characters*.tmp(intermediate file of jslmurinfoget.zip)

If the command failed to store the collected file in jslmurinfoget.zip, use Windows Explorer to locate the tmp*about-20-numeric-characters*.tmp file and delete it.

# **Return value**

Return value	Description
0	Collection of SLM - UR error information terminated normally.
1	Collection of SLM - UR error information failed.

# Example

C:\Program Files\HITACHI\JP1ITSLM\ur\bin\jslmurinfoget

# 9.17 jslmuripls (displays network interface number and IP address)

#### Function

This command displays in the command prompt window the network interface number and IP address of the host on which SLM - UR is installed.

The information displayed by executing this command will be needed for setting up SLM - UR or for changing the network interface number by editing the system definition file for SLM - UR.

For details about the messages displayed during command execution, see 11.3 Messages.

#### Format

jslmuripls

#### **Execution permission**

User account that belongs to the OS's Administrators group

#### Storage folder

SLM-UR-installation-folder\ur\bin\

#### Notes

If the jslmuripls command is executed with any argument specified, it terminates with an error.

#### **Return value**

Return value	Description
0	The display processing terminated normally.
1	The display processing failed.

#### Example

```
C:\Program Files\HITACHI\JP1ITSLM\ur\bin\jslmuripls
```

# Example output

KNAS99000-I network-interface-number----IP-address

# 9.18 jslmurnals(displays the network adapter address and IP address)

#### Function

This command displays, on the command prompt screen, the network adapter address and IP address of the host on which SLM - UR is installed.

The information displayed by executing this command is necessary for setting up SLM - UR, or for changing the network adapter address by editing the system definition files of SLM - UR.

Execute this command at the following timing:

- When viewing the network adapter address to be specified during the setup of SLM UR
- · When adding or deleting network interface cards
- When changing the settings of the network interface
- When migrating from the setup of SLM UR for which the network interface number (ur\_ni\_number) is specified for the setup option file, to the setup for which the network adapter address (ur\_na\_address) is specified

For details about the messages displayed during command execution, see 11.3 Messages.

#### Format

jslmurnals

#### **Execution permission**

User account that belongs to the OS's Administrators group

# Storage folder

```
SLM-Manager-installation-folder\ur\bin\
```

#### Notes

Do not cancel execution of this command by closing the command prompt that is executing this command or by pressing **Ctrl+C** on the keyboard.

#### **Return value**

Return value	Description
0	The display processing terminated normally.
1	The display processing failed.
130	The import processing was canceled because Ctrl+C was pressed.

# Example

C:\Program Files\HITACHI\JP1ITSLM\ur\bin\jslmurnals
---

# Example output

KNAS99000-I network-adapter-address----IP-address

# Function

This command creates an execution environment for SLM - UR. It can also be used to reconfigure the execution environment for an existing SLM - UR.

After installing SLM - UR, execute the command after investigating one of the following:

- Execute the jslmuripls command and investigate the network interface number and IP address to be subject to collection of HTTP packets
- Execute the jslmurnals command and investigate the network adapter address and IP address to be subject to collection of HTTP packets

The command execution results are output to the standard output and displayed in the console window. For details about the messages displayed during command execution, see 11.3 Messages.

The command performs one of the following processes, depending on the status of the execution environment at the time of command execution:

Creates an execution environment (when there is no existing execution environment):

This command creates an execution environment when it is executed immediately after SLM - UR has been newly installed or after the execution environment for SLM - UR was discarded by unsetup processing.

Reconfigures the existing execution environment (when an execution environment already exists):

If this command is executed when the execution environment for a configured SLM - UR already exists, the command reconfigures the existing execution environment for SLM - UR.

You reconfigure the execution environment in the following cases:

- The host name, IP address, or port number settings in the execution environment for a configured SLM UR are to be changed.
- The execution environment for a configured SLM UR is to be reconfigured after an upgrade installation was performed.

# Format

jslmursetup [ -c { online | standby } ] absolute-path-of-options-file

# **Execution permission**

User account that belongs to the OS's Administrators group

# Storage folder

```
SLM-UR-installation-folder\ur\bin\
```

# Arguments

-c

Specifies that the execution environment used in a cluster system is to be configured. The specification method is as follows:

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• online

Specifies that the execution environment for the active system is to be configured or reconfigured.

• standby

Specifies that the execution environment for the standby system is to be configured or reconfigured.

#### absolute-path-of-options-file

Specifies the absolute path for an options file that is to be created in text format. This file can be stored at any desired location. The absolute path of the options file storage location must be a maximum of 255 bytes of characters, including the file name (any name).

An options file template is stored at the following location:

```
SLM-UR-installation-folder\ur\template\ur\conf\jp1itslm_setup.opt
```

The following shows the definitions in the options file: Specify one or the other for "ur\_ni\_number" and "ur\_na\_address".

```
manager_host=host-name-or-IP-address-of-SLM-Manager
manager_port=port-number-of-SLM-Manager
ur_host=host-name-or-IP-address-of-SLM-UR
ur_port=port-number-of-SLM-UR
ur_ni_number=network-interface-number
ur_na_address=network-adaptor-address
```

The following table provides the details of definition items.

Table 9-27: Details of definition items in options file for SLM - UR
--

No.	Definition item	Specificatio n	Description	Default value
1	manager_host	R	Specifies the host name or IP address of the host on which SLM - Manager is installed, as the information for identifying SLM - Manager's execution environment. If SLM is running in a cluster system, specify the logical host name or logical IP address.	
2	manager_port	0	Specifies the port number used by SLM - Manager, as a number in the range from 1 through 65535.#	20904
3	ur_host	R	Specifies the host name or IP address of the host on which SLM - UR is installed, as the information for identifying SLM - UR's execution environment. If SLM is running in a cluster system, specify the logical host name or logical IP address.	
4	ur_port	0	Specifies the port number used by SLM - Manager, as a number in the range from 1 through 65535. <sup>#</sup>	20910
5	ur_ni_number	R	Specifies the network interface number used for connection by SLM - UR, as a number in the range from 1 through 60. <sup>#</sup> You can use the jslmuripls command to check the connected network device. For details about the jslmuripls command, see 9.17 jslmuripls (displays network interface number and IP address) in 9. Commands.	

No.	Definition item	Specificatio n	Description	Default value
6	ur_na_address	R	Specifies the network adaptor address the instance of SLM - UR will connect to as a single-byte hexadecimal number of up to 12 digits. The connected network devices can be confirmed by using the jsmlurnals command.	
			For details on the jsmlurnals command, see 9.18 jslmurnals(displays the network adapter address and IP address).	

Legend:

- R: Specification is required
- O: Specification is optional
- --: Not applicable

#

If the specified value is not within the permitted range, setup is completed, but an error occurs when the SLM - UR service SLM - User Response Service (service name: JP1\_ITSLM\_UR\_Service) starts.

#### Notes

- If an error occurs during setup, eliminate the cause of the error and re-execute the command.
- The options file used during setup is renamed jplitslm\_setup.opt after command execution and stored at the following location:

SLM-UR-installation-folder\ur\conf\jplitslm setup.opt

- Do not execute commands other than the jslmuripls command or the jslmurnals command while this command is being executed.
- If the folder shown below contains the options file, the command renames that options file by adding .bk, saves it in the same folder, and then creates a new options file:

SLM-Manager-installation-folder\ur\conf\

If a file with the same name already exists when the options file is saved, the existing file is overwritten. If the file save processing fails, setup fails. The values of definition items contained in the saved options file are inherited to the new options file. However, for the definition items that were specified in the options file when the command was executed, the specified values are set. Comments are not inherited.

- Do not terminate setup processing by pressing Ctrl+C or closing the window. Also, in the event of an error, wait until setup is completed before proceeding.
- Before you start the setup processing, terminate all other resident software programs, including other installers and applications (other applications include the jslmursetup and jslmurunsetup commands).
- If setup is performed with the -c option specified in the command and any of a set of specific errors occurs during operation, the Windows services are closed by SLM Manager. For details about the errors that result in a stoppage of the Windows services, see 6.1.3 Failover timing.

#### **Return value**

Return value	Description
0	Setup processing terminated normally.

Return value	Description
1	Setup processing failed.

# Example

C:\Program Files\HITACHI\JP1ITSLM\ur\bin\jslmursetup C:\Users\Administrator\Desktop\j plitslm\_setup.opt

# Function

This command discards the execution environment for SLM - UR.

This command is used when the settings specified during the setup are to be changed without uninstalling SLM - UR.

The command execution results are output to the standard output and displayed in the console window. For details about the messages displayed during command execution, see 11.3 Messages.

# Format

jslmurunsetup

# **Execution permission**

User account that belongs to the OS's Administrators group

# Storage folder

*SLM-UR-installation-folder*\ur\bin\

#### Notes

- If an error occurs during unsetup processing, eliminate the cause of the error and re-execute the command.
- Do not execute another command while this command is executing, except for the jslmuripls command.
- Do not terminate unsetup processing by pressing Ctrl+C on the keyboard or closing the window. In the event of an error, wait until the unsetup processing is completed before proceeding.
- Before you start unsetup processing, terminate all other resident software programs, including other installers and applications (other applications include the jslmmgrsetup and jslmmgrunsetup commands).

# **Return value**

Return value	Description
0	Unsetup processing terminated normally.
1	Unsetup processing failed.

# Example

C:\Program Files\HITACHI\JP1ITSLM\ur\bin\jslmurunsetup

# 10 SLM Windows

This chapter describes the SLM windows.

# 10.1.1 What the windows are used for

There are five types of windows in SLM.

The following table summarizes the intended use of each type of window and provides a reference to the section in which you will find detailed information about that window.

Table 10-1: SLM windows

No.	Window	When it is used	What it is used for	For details about this window
1	Home window	For monitoring the status of monitored services	This window is used in monitoring the status of monitored services. It keeps track in a single location of the errors and warnings that occur in all the monitored services you are responsible for monitoring, and lets you check on monitored services that require attention.	10.2 Home window
2	Real-time Monitor window	<ul><li>For monitoring the status of monitored services</li><li>For confirming recovery</li></ul>	This window is used in monitoring the status of monitored services. When it becomes clear that monitored services require attention, you can specify a monitored service and get the details immediately. After you have dealt with the problem, you can confirm that the monitored service has recovered.	10.3 Real-time Monitor window
3	Troubleshoot window	For investigating the causes of problems	When an error or warning occurs, this window lets you check past service performance and determine when the event that caused the problem occurred.	10.4 Troubleshoot window
4	Report window	For creating reports	This window is used to output files and to display information for creating reports for regular reporting of monitoring results.	10.5 Report window and the windows displayed from the Report window
5	Settings window	<ul> <li>For adding and deleting monitored services</li> <li>For setting monitoring items</li> <li>For starting and stopping monitoring</li> </ul>	This window is used to add and delete monitored services, to set monitoring items, and to start and stop monitoring.	10.6 Settings window and windows displayed from the Settings window

# 10.1.2 Common items on all windows

# (1) Buttons for switching windows

After you have logged in, you display SLM windows by clicking buttons located at the top of the windows. The buttons are shown in the figure below. Note that if you click the button to display the window that is already being displayed, the window is not updated.

<sup>10.</sup> SLM Windows

JP1/Service Level Management Description

The Troubleshoot window can be displayed from the list of errors and warnings displayed in the Home window, as well as from the performance charts displayed in the Real-time Monitor window. In this case, you display the Troubleshoot window after you have selected a monitored service in the Home window or Real-time Monitor window. For details about how to do this, see 4.4 Support methodology for root cause investigation when an error or warning is displayed for a monitored service.

Settings

Note that for windows other than the Settings window, when you redisplay the original window after a window transition, the pre-transition window information is displayed. However, for windows whose contents are updated regularly, the displayed contents might be different, because the update process that was interrupted by the window transition is resumed when the original window is refreshed. In the case of the Settings window, when you redisplay the original window after a window transition, the pre-transition window information is not displayed.

# (2) Icons displayed in windows

The Home window, Real-time Monitor window, and Troubleshoot window display lists of events that describe changes in the status of monitored services when errors and warnings have occurred. For each event, an icon is displayed indicating the status of the monitored service. By checking the icons, you can identify which monitored services require attention.

The table below shows the icons and the monitored service status that each icon represents. The table also shows the type of monitoring (detection) associated with each icon and its applicable monitoring items.

No.	lcon	Туре	Monitored service status	Type of monitoring (detection)	Monitoring items
1 🐼 Error		Error	Service performance or system performance has exceeded the threshold. Immediate corrective action is required.	Threshold monitoring	<ul> <li>Average response time</li> <li>Throughput</li> <li>Error rate</li> <li>System performance monitoring<sup>#1</sup></li> </ul>
			The monitored service has stopped. Immediate corrective action is required.	Availability monitoring <sup>#1</sup>	
2	!	Warning	A trend has been detected indicating that service performance or system performance is likely to exceed the threshold. Take corrective action as necessary.	Trend monitoring	<ul> <li>Average response time</li> <li>Throughput</li> <li>System performance monitoring<sup>#1</sup></li> </ul>
			Service performance or system performance has veered sharply from the usual average value. Take corrective action as necessary.	Out-of-range value detection	<ul> <li>Average response time</li> <li>Throughput</li> <li>Error rate<sup>#2</sup></li> <li>System performance monitoring<sup>#1, #2</sup></li> </ul>
3	$\bigcirc$	Normal	Normal.		
4	0	Monitoring stopped	Monitoring of the monitored service is not being performed.		

Legend:

--: Not applicable.

#1

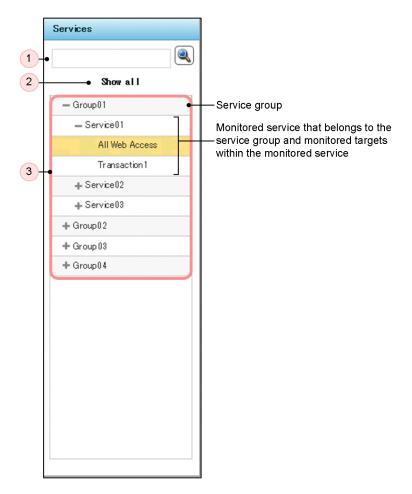
Monitoring is possible through linkage with Performance Management.

#2

Out-of-range value detection detected from a combination of multiple monitoring items is not shown.

# (3) Services area

The **Services** area is for selecting the services to be monitored. It is displayed in the Real-time Monitor window, Troubleshoot window, Report window, and Settings window, where the monitoring is carried out.



The **Services** area displays a hierarchical list of the service groups, monitored services, and monitored targets within the monitored services that the logged-in user is responsible for monitoring. By selecting a service group, monitored service, or monitored target within a monitored service, you can configure the selected item, or drill down to see what is displayed in the **Service performance information** area or the **Event** and **Performance chart** tabs area.

The following table lists the items displayed in the Services area.

No.	Item	Description
1	Text box for searching for monitored services and (search) button	

<sup>10.</sup> SLM Windows

No.	Item	Description
1	Text box for searching for monitored services and (search) button	To conduct a search, enter a character string in the text box, and then click the (search) button or press the <b>Enter</b> key. Any monitored service whose name is at least a partial match for the entered character string is displayed, together with its service group. The service group is displayed as being open. A maximum of 64 characters can be entered in the text box. If a search is performed with nothing entered in the text box, the list of all the service groups that the logged-in user is responsible for monitoring is displayed.
2	Show all	Displays a hierarchical list of all the monitored services that the logged-in user is responsible for monitoring.
3	List of service groups, monitored services, and monitored targets within monitored services	Provides a hierarchical listing of service groups, monitored services, and monitored targets within the monitored services. Clicking a displayed service group, monitored service, or monitored target within a monitored service changes what is displayed in this area. When you select a service group after a search for monitored services, only the monitored services displayed as the search results are shown, not the other monitored services that belong to the same service group. Note that if you re-select an already-selected monitored service, or a monitored target within a monitored service, the window display is not updated.

# (4) Supplemental notes

- When you display the Troubleshoot window by clicking the **Troubleshoot** button at the top of a window, the **Services** area shows only the service groups, not the monitored services.
- While the Settings window is displaying the Add/Delete monitor area or the Start/Stop monitor area, the Services area cannot be used.
- If you select only a service group in the **Services** area of the Settings window, nothing is displayed in the **Web transaction setting** area, the **Configuration information settings** area, and the **Monitor settings** area. If you select a monitored service or a monitored target within a monitored service, the settings for the monitored targets within the monitored service are displayed in the **Web transaction setting** area, **Configuration information settings** area, and **Monitor settings** area.

# 10.2.1 Configuration of the Home window

# (1) Window configuration

<b>a</b>	Home	Real-time Monitor	Troubleshoot	Report				*	Settings
Current ser	rvice group st	atus summary	E	ror 📕 Warning 🛄 Normal 🛄 Stop	Caution service			Error <mark>(2)</mark> Warnin	s🕒 Normal 🤡 Stop 🛈
		Service group status (10		Number of services	Carrie	Construction of the second		Number of events in the	last 7days
Service group	,	0 20	40 60 80	100 NUMber of services	Service	Service group	Current	Error	Warning
Group 03		in the second se			1 Service04	Group12	0		8 0
Group 04		in the second			1 Service07	Group 84	0		1 0
Group 01					3 Service03	Group 01	()		0 11
aroup 02					2 Service01	Group 01	0		0 0
					Service02	Group 01	0		0 0
					Service05	Group 12	0		0 0
					Service06	Group13	0		0 0
Events in t	the last7days								ing]:11 Normal⊘:1 16 Showing:1 - 16 →
Status	Level	When detected	Туре	Details	Service group	Service	Host	<ul> <li>Total: Monitored target</li> </ul>	16 Showing: 1 - 16 Monitor item
Status <b>Unread</b>	Level	2020/02/05 05:46:05	OUTLIER	UPPER LIMIT	Group01	Service03	-	4 Total: Monitored target All Web Access	16 Showing: 1 - 16 Monitor item Throughput
Status Unread	Level	2020/02/05 05:46:05 2020/02/05 05:11:05	OUTLIER	UPPER LIMIT UPPER LIMIT	Group01 Group01	Service03 Service03	-	4 Total: Monitored target All Web Access All Web Access	16 Showing: 1 - 16 Monitor item Throughput Avg. response
Status Uniread Uniread Uniread	Level	2020/02/05 05:46:05 2020/02/05 05:11:05 2020/02/05 05:11:05	OUTLIER OUTLIER OUTLIER	UPPER LIMIT UPPER LIMIT UPPER LIMIT	Group01 Group01 Group01	Service03 Service03 Service03	-	Total: Monitored target All Web Access All Web Access All Web Access	16 Showing: 1 - 16 Monitor item Throughput Avg. response Avg. response+Thr==
Status Unread Unread Unread Unread	Level	2020/02/05 05:46:05 2020/02/05 05:11:05 2020/02/05 05:11:05 2020/02/05 04:50:01	OUTLIER OUTLIER OUTLIER THRESHOLD	UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT	Group01 Group01 Group01 Group02	Service03 Service03 Service03 Service04	- - -	Total:     Monitored target     All Web Access	16 Shoring: 1 - 16 Monitor item Throughput Avg. response Avg. response Avg. response
Status Unread Unread Unread Unread	Level 3 3 3 3 3 3 3 3 3 3 3 3	2020/02/05 05:46:05 2020/02/05 05:11:05 2020/02/05 05:11:05 2020/02/05 04:50:01 2020/02/05 04:40:01	OUTLIER OUTLIER OUTLIER THRESHOLD THRESHOLD	UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT	Group01 Group01 Group01 Group02 Group02	Service03 Service03 Service03 Service04 Service04	- - - - -	Total:     Monitored target     All Web Access	16 Shoring: 1 - 16 Monitor item Throughput Ave. response Ave. response Ave. response Ave. response
Status Unread Unread Unread Unread Unread	Level () () () () () () () () () ()	2020/02/05 05:46:05 2020/02/05 05:11:05 2020/02/05 05:11:05 2020/02/05 05:11:05 2020/02/05 04:50:01 2020/02/05 04:40:01 2020/02/05 04:30:01	OUTLIER OUTLIER OUTLIER THRESHOLD THRESHOLD THRESHOLD	UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT	Group01 Group01 Group01 Group02 Group02 Group02	Service03 Service03 Service03 Service04 Service04 Service04	- - -	Total:     Montored target     All Web Access	16 Shoring: 1 - 16 Monitor item Throughput Ave, response Ave, response Ave, response Ave, response Ave, response Ave, response
Status Unread Unread Unread Unread Unread Unread	Level 3 3 3 3 3 3 3 3 3 3 3 3	2020/02/05 05:46:05 2020/02/05 05:11:05 2020/02/05 05:11:05 2020/02/05 04:50:01 2020/02/05 04:40:01	OUTLIER OUTLIER OUTLIER THRESHOLD THRESHOLD	UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT	Group81 Group81 Group81 Group82 Group82 Group82 Group81	Service03 Service03 Service03 Service04 Service04	- - - -	Total:     Monitored target     All Web Access	16 Shoring: 1 - 16 Monitor item Throughput Ave. response Ave. response Ave. response Ave. response
itatus Inread Inread Inread Inread Inread Inread Inread	Level () () () () () () () ()	2020/02/05 05-46-05 2020/02/05 05-11-05 2020/02/05 05-11-05 2020/02/05 04-50-01 2020/02/05 04-50-01 2020/02/05 04-430-01 2020/02/05 04-430-01 2020/02/05 04-11-05	OUTLIER OUTLIER OUTLIER THRESHOLD THRESHOLD THRESHOLD OUTLIER	UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT	Group01 Group01 Group01 Group02 Group02 Group02	Service83 Service83 Service84 Service84 Service84 Service84 Service83	- - - -	Total:     Montored target     All Web Access	16 Shoring: 1 - 16 Monitor item Throughput Ave, response Ave, response Ave, response Ave, response Ave, response Ave, response
Status Unread Unread Unread Unread Unread Unread Unread Unread	Level () () () () () () () () () () () () () (	2020/02/05 05:46:05 2020/02/05 05:11:05 2020/02/05 05:11:05 2020/02/05 05:11:05 2020/02/05 04:50:01 2020/02/05 04:40:01 2020/02/05 04:30:01 2020/02/05 04:55:25	O UTLIER O UTLIER THRESHOLD THRESHOLD THRESHOLD O UTLIER AVAILABILITY	UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT SERVICE REPAIR	Group 81 Group 81 Group 82 Group 82 Group 82 Group 82 Group 84	Service83 Service83 Service84 Service84 Service84 Service84 Service83 Service83	- - - -	Total:     Montored target     All Web Access	16 Shoring: 1 - 16 Monitor item Throughput Ave, response Ave, response Ave, response Ave, response Ave, response Ave, response
Status Unread Unread Unread Unread Unread Unread Unread Unread	Level () () () () () () () () () () () () () (	2020/02/05 05:46:05 2020/02/05 05:11:05 2020/02/05 05:11:05 2020/02/05 04:40:01 2020/02/05 04:40:01 2020/02/05 04:40:01 2020/02/05 04:41:05 2020/02/05 04:55:25 2020/02/05 03:56:15	OUTLIER OUTLIER OUTLIER THRESHOLD THRESHOLD OUTLIER AVAILABILITY	UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT SERVICE FAILURE	Group 81 Group 81 Group 82 Group 82 Group 82 Group 82 Group 84 Group 84	Service83 Service83 Service84 Service84 Service84 Service83 Service87		4 Total: Montrord target All Web Access All Web Access	16 Shoring: 1 - 16 Monitor item Throuchput Ave: response Ave: response Ave: response Ave: response Ave: response Ave: response
Status Unread Unread Unread Unread Unread Unread Unread Unread	Level () () () () () () () () () () () () () (	2020/02/05 05:46:05 2020/02/05 05:11:05 2020/02/05 04:50:01 2020/02/05 04:50:01 2020/02/05 04:50:01 2020/02/05 04:30:01 2020/02/05 04:11:05 2020/02/05 04:11:05 2020/02/05 04:41:05	OUTLIER OUTLIER THRESHOLD THRESHOLD THRESHOLD OUTLIER AVAILABELITY AVAILABELITY OUTLIER	UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT SERVICE REAR SERVICE FAI UNE UPPER LIMIT	Group 81           Group 81           Group 82           Group 81           Group 84           Group 81	Service83 Service83 Service84 Service84 Service84 Service83 Service87 Service87 Service87		Total:     Montored target     All Web Access	16 Shoring: 1 - 16 ► Montor item Throughput Avg. response Avg. response Avg. response Avg. response Avg. response Avg. response Avg. response - Throughput
Status Unread Unread Unread Unread Unread Unread Unread Unread	Level 9 9 9 9 9 9 9 9 9 9 9 9 9	2020/22/05 05-46-05 2020/02/05 05-16-55 2020/22/05 06:11-05 2020/02/05 04:30-01 2020/02/05 04:30-01 2020/02/05 04:30-01 2020/02/05 04:30-55 2020/02/05 04:35-55 2020/02/05 04:35-55 2020/02/05 04:35-55 2020/02/05 04:35-55	OUTLIER OUTLIER THRESHOLD THRESHOLD OUTLIER AVAILABILITY AVAILABILITY OUTLIER OUTLIER	UPPERLIMIT UPPERLIMIT UPPERLIMIT UPPERLIMIT UPPERLIMIT UPPERLIMIT SERVICE FAR UPPE SERVICE FAR UPPE UPPERLIMIT LOWERLIMIT	Group 81           Group 81           Group 81           Group 82           Group 82           Group 82           Group 82           Group 81           Group 81	Service83 Service83 Service84 Service84 Service84 Service84 Service87 Service87 Service89 Service89	- - - - - - - - - - - - - - - - - - -	Total:     Montand trapet     All Web Access	16 Shoving: 1 - 16 ▶ Monkor item Throughput Avg. response Avg. response Avg. response Avg. response Avg. response Avg. response - - Throughput Error rate
Status	Level () () () () () () () () () () () () ()	2020/02/05 05:46:05 2020/02/05 05:16:05 2020/02/05 04:58:01 2020/02/05 04:58:01 2020/02/05 04:58:01 2020/02/05 04:58:01 2020/02/05 04:58:55 2020/02/05 03:55:55 2020/02/05 03:41:05 2020/02/05 03:41:05 2020/02/05 03:41:05	OUTLIER OUTLIER OUTLIER THRESHOLD THRESHOLD OUTLIER AVAILABILITY OUTLIER OUTLIER OUTLIER	UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT SERVICE FRADUR SERVICE FADURE UPPER LIMIT LOWER LIMIT LOWER LIMIT	Group#1 Group#1 Group#2 Group#2 Group#2 Group#2 Group#1 Group#1 Group#1 Group#1 Group#1	Gervice89 Service83 Service83 Service84 Service84 Service84 Service87 Gervice87 Service87 Service83 Service83 Service83		Total: Montored taget     All Web Access     All Web Access	16 Sovint; 1 - 16 b Montor & en Throughout Ave, response Ave, response Throughout Ave, response Ave, response Ave, response Ave, response Ave, response Throughout Error rate Error rate
Status Unread Unread Unread Unread Unread Unread Unread Unread Unread Unread	Level 9 9 9 9 9 9 9 9 9 9 9 9 9	2020/42/95 454645 2020/42/95 4511-85 2020/42/95 4511-85 2020/42/95 4511-85 2020/42/95 44:0-81 2020/42/95 44:0-81 2020/42/95 44:0-81 2020/42/95 455:55 2020/42/95 451-85 2020/42/95 44:1-85 2020/42/95 44:1-85 2020/42/95 44:1-85	OUTLIER OUTLIER THRESHOLD THRESHOLD THRESHOLD OUTLIER AVAILABEITY OUTLIER OUTLIER OUTLIER OUTLIER	UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT UPPER LIMIT SERVICE FAILURE UPPER LIMIT LOWERLIMIT LOWERLIMIT UPPER LIMIT	Group#1 Group#1 Group#2 Group#2 Group#2 Group#2 Group#4 Group#4 Group#1 Group#1 Group#1 Group#1 Group#1	Service8 Service8 Service8 Service8 Service8 Service8 Service9 Service9 Service9 Service9 Service9 Service8	- - - - - - - - - - - - - - - - - - -	Total: Monitored target     All Web Access     All Web Access	16 Sovinie; 1 - 16 Montor ten Throuchput Ave, response Ave, response Ave, response Ave, response Ave, response Ave, response Throuchput Error rate Error rate Error rate Error rate

Current service group status summary area

Caution service area

# (2) Window description

The Home window is used in monitoring the status of monitored services.

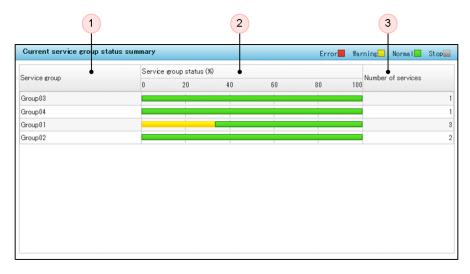
It keeps track in a single location of the errors and warnings that occur in all the monitored services you are responsible for monitoring, and lets you check on monitored services that require attention.

The Home window is composed of the following areas:

- Current service group status summary area
- Caution service area
- Events in the last 7 days area

#### 10.2.2 Current service group status summary area

#### (1) Window configuration



#### (2) Window description

This window displays the status of the service groups that the logged-in user is responsible for monitoring. The display is updated every three seconds.

The following	table lists	the items	that are	displayed:
---------------	-------------	-----------	----------	------------

No.	Item	Description
1	Service group	This column displays the names of the service groups that the logged-in user is responsible for monitoring.
2	Service group status (%)	<ul> <li>This column displays the current status of the monitored services belonging to each service group.</li> <li>A bar graph for each service group indicates the percentages of its monitored services whose status is error, warning, normal, and stopped, with 100% representing all the monitored services that belong to the service group.</li> <li>The colors in the bar graph indicate the following:</li> <li>Red (error)</li> <li>Percentage of monitored services in which an error has occurred in threshold monitoring.</li> <li>Yellow (warning)</li> <li>Percentage of monitored services in which a warning has occurred in trend monitoring or out-of-range value detection.</li> <li>Green (normal)</li> <li>Percentage of monitored services whose status is normal.</li> <li>Gray (monitoring stopped)<sup>#</sup></li> <li>Percentage of monitored services that are not being monitored.</li> <li>If monitored targets within a monitored service have different statuses, the highest-priority status color is displayed, according to the following priority order (highest to lowest): red (error) &gt; yellow (warning) &gt; green (normal). (In the case where monitoring of a monitored service has stopped, only the stopped status is possible.)</li> <li>Consider an example with the following three statuses: <ul> <li>All Web Access: green (normal)</li> </ul> </li> </ul>
		<ul><li>Web transaction 1: green (normal)</li><li>Web transaction 2: yellow (warning)</li></ul>

No.	Item	Description
2	Service group status (%)	In this case, the status of the monitored service would be yellow (warning).
3	Number of services	This column displays the number of monitored services belonging to each service group.

<sup>#</sup> 

A monitored service is also counted as stopped if the process executing performance analysis of a monitored target within that monitored service experiences a memory shortage or abnormal termination of a thread after monitoring starts. In this case, stop the monitoring of the corresponding monitored service, restart monitoring after you have addressed the cause based on the KNAS32021-E message in the message log.

For details about the message log, see 7.2.4 Message logs.

#### (3) Supplemental notes

 If you conduct trend monitoring, start the trend monitoring when you obtain service performance that is within at least 30% of the range of the most recent trend calculation. However, if the service performance decreases after monitoring starts, stop the monitoring and restart it once service performance stabilizes. At this time, it will be displayed as normal, rather than stopped, in the Current service group status summary area. Even if the trend has exceeded the threshold, it will be displayed as normal until service performance stabilizes.

### 10.2.3 Caution service area

#### 2 3 4 (1 🚫 Stop🕕 Caution service Error Warning Norr ts in the last 7days Number of Current Service Service group Error Warning Service04 Group02 Ø 0 0 Group04 Service07 Service03 Group01 1 11 Service01 Ø Group01 0 Service02 Group01 n 0 0 Service05 Group02 Û Group03 Service06

#### (1) Window configuration

### (2) Window description

This window displays a ranked list of the monitored services based on the number of errors or warnings that occurred in each service during the last seven days. The display is updated every three seconds. The order in which the monitored services are listed is determined as follows:

- 1. The monitored service with the most errors appears first and the monitored service with the fewest errors appears last.
- 2. When the number of errors is the same, the monitored service with the most warnings appears first.

<sup>10</sup> SLM Windows

3. When the number of warnings is the same, the monitored services and service groups appear according to the Unicode ordering of their names.

The following table lists the items that are displayed:	The following	g table lists	the items	that are	displayed:
---	---------------	---------------	-----------	----------	------------

No.	Item	Description
1	Service	This column displays the names of the monitored services that the logged-in user is responsible for monitoring.
2	Service group	This column displays for each monitored service the name of the service group to which it belongs.
3	Current	The monitoring result, which is based on an overall evaluation of the status of each monitored service displayed under Service, is represented by one of the following icons. Note that the icon displayed for this item is the same as the icon displayed for the item <b>Total</b> in the 10.3.3 Service performance information area.
		<ul><li>(error)</li><li>There is at least one item for which an error has occurred in threshold monitoring.</li></ul>
		(warning)
		There is at least one item for which a warning has occurred in trend monitoring or out-of- range value detection.
		(normal)
		The status of all items is normal.
		(monitoring stopped) <sup>#</sup>
		The monitored service is not currently being monitored.
		If monitored targets within a monitored service have different statuses, the highest-priority status icon is displayed, according to the following priority order (highest to lowest): error > warning > normal. (In the case where monitoring of a monitored service has stopped, only the stopped status is possible.)
		Consider an example with the following three statuses:
		• All Web Access: 🧭 (normal)
		• Web transaction 1: 🧭 (normal)
		• Web transaction 2: (warning)
		In this case, the status of the monitored service would be リ (warning).
4	Error, Warning	These columns display for each monitored service the cumulative numbers of errors and warnings during the past seven days.

#

A monitored service will also be shown in the **Current** column as stopped if the process executing performance analysis of a monitored target within that monitored service experiences a memory shortage or abnormal termination of a thread after monitoring starts. In this case, stop the monitoring of the corresponding monitored service, and then restart monitoring after you have addressed the cause based on the KNAS32021-E message in the message log. For details about the message log, see 7.2.4 Message logs.

#### (3) Supplemental notes

• If you conduct trend monitoring, start the trend monitoring when you obtain service performance that is within at least 30% of the range of the most recent trend calculation. However, if the service performance decreases after monitoring starts, stop the monitoring and restart it once service performance stabilizes. At this time, it will be

displayed as normal, rather than stopped, in the **Caution service** area. Even if the trend has exceeded the threshold, it will be displayed as normal until service performance stabilizes.

#### 10.2.4 Events in the last 7 days area

#### (1) Window configuration

3	Level 4	When detected	Туре	Details 7	Service group	9 Service	Host	Total: 16 Monitored target	Showing: 1 - 16
Unread	1	2020/02/05 05:46:05	OUTLIER	UPPER LIMIT	Group81	Service03	-	All Web Acce 11	Throughout 12
Unread		2020/02/05 05:11:05	OUTLIER	UPPER LIMIT	Group01	Service03	-	All Web Acces	Avg. respon
Unread		2020/02/05 05:11:05	OUTLIER	UPPER LIMIT	Group01	Service03	-	All Web Access	Avg. response+Thr
Unread	8	2828/02/05 84:50:01	THRESHOLD	UPPER LIMIT	Group02	Service04	-	All Web Access	Avg. response
Unread	8	2020/02/05 04:40:01	THRESHOLD	UPPER LIMIT	Group82	Service84	-	All Web Access	Avg. response
Unread	8	2020/02/05 04:30:01	THRESHOLD	UPPER LIMIT	Group02	Service04	-	All Web Access	Avg. response
Unread	()	2020/02/05 04:11:05	OUTLIER	UPPER LIMIT	Group01	Service03	-	All Web Access	Avg. response
Unread	0	2020/02/05 03:55:25	AVAILABILITY	SERVICE REPAIR	Group84	Service07	-	-	-
Unread	8	2020/02/05 03:50:15	AVAILABILITY	SERVICE FAILURE	Group 84	Service07	-	-	-
Unread	(1)	2020/02/05 03:41:05	OUTLIER	UPPER LIMIT	Group81	Service03	-	All Web Access	Throughput
Unread	3	2020/02/05 03:41:05	OUTLIER	LOWER LIMIT	Group01	Service03	-	All Web Access	Error rate
Unread	٩	2020/02/05 03:11:05	OUTLIER	LOWER LIMIT	Group01	Service03	-	All Web Access	Error rate
Unread	()	2020/02/05 01:21:05	OUTLIER	UPPER LIMIT	Group81	Service03	-	All Web Access	Avg. response
Unread	(1)	2020/02/05 01:21:05	OUTLIER	UPPER LIMIT	Group81	Service03	-	All Web Access	Avg.response+Thr***
Unread	()	2020/02/05 01:11:05	OUTLIER	UPPER LIMIT	Group81	Service03	-	All Web Access	Throughput
Unread		2020/02/05 01:01:05	OUTLIER	UPPER LIMIT	Group81	Service03	-	All Web Access	Throughput

#### (2) Window description

This window displays the details of all the events that have occurred in the applicable monitored services during the last seven days. The events are listed in groups of 20 per page, starting with the most recent. Once it is displayed, an event continues to be listed until it reaches the seven-day cutoff. The display is updated every three seconds.

No.	Item	Description
1	Cumulative totals	This area shows the total number of events of each event type (error, warning, and normal) that occurred during the last seven days.
2	<b>▲ Total:</b> <i>n1</i> <b>Showing:</b> <i>n2-n3</i>	When more than 20 events occurred in the monitored service in the last seven days, the additional events are displayed on subsequent pages.
		Click $\blacktriangleleft$ or $\blacktriangleright$ to display the previous or next page, respectively. If there is no previous page or next page, you cannot click that icon.
		$n^2$ and $n^3$ indicate the range of event items displayed on the current page, and $n^1$ is the total number of events generated in the last seven days.
		Note that the maximum number of events displayed per page can be changed by specifying the dashboardEventListRecentViewSize property. When you change the number of items to be displayed per page, $nl$ will reflect the changed value. For details about the dashboardEventListRecentViewSize property, see 5.6.2 Editable definitions.
3	Status	This column indicates whether each event has been checked (read).
		Unread
		This is the default value, before the user has clicked the row's <b>Status</b> column. When <b>Unread</b> is displayed, the entire row is in displayed in boldface.
		Read
		This setting indicates that the row's Status column has been clicked.
		After you check an event by reviewing the contents of its row, click the row in this column to change <b>Unread</b> to <b>Read</b> . Once an event's <b>Status</b> column entry is changed to <b>Read</b> it cannot be changed back to <b>Unread</b> .
4	Level	This column displays for each event one of the following icons indicating the status of the average response time, throughput, and error rate at the time the event occurred. The following icons are used:

No.	Item	Description
4	Level	<ul> <li>(error)         <ul> <li>An error occurred in threshold monitoring or availability monitoring.</li> <li>(warning)                 <ul></ul></li></ul></li></ul>
5	When detected	This column displays the date and time the event occurred, in the format <i>YYYY/MM/DD hh</i> : <i>mm</i> : <i>ss</i> ( <i>year/month/date hour</i> : <i>minute</i> : <i>second</i> ).
6	Туре	<ul> <li>This column displays one of the following character strings indicting the type of the error or warning:</li> <li>THRESHOLD Monitoring detected that the threshold was exceeded (error). </li> <li>OUTLIER An out-of-range value that differs significantly from the norm for the monitored service was detected (warning). </li> <li>TREND A trend was detected indicating that the threshold seems likely to be exceeded (warning). </li> <li>AVAILABILITY Monitoring detected that the monitored service has stopped or has recovered from having stopped (error or normal). </li> </ul>
7	Details	<ul> <li>This column displays one of the following character strings providing more detail about the type of error or warning displayed in the <b>Type</b> column:</li> <li><b>UPPER LIMIT</b> <ul> <li>This is displayed when the <b>Type</b> column is <b>THRESHOLD</b> or <b>OUTLIER</b>.</li> <li>When the <b>Type</b> column is <b>THRESHOLD</b>, <b>UPPER LIMIT</b> indicates that the monitoring item's service performance or system performance exceeded the threshold.</li> <li>When the <b>Type</b> column is <b>OUTLIER</b>, <b>UPPER LIMIT</b> indicates that the monitoring item's service performance exceeded the upper limit value.</li> </ul> </li> <li><b>LOWER LIMIT</b> <ul> <li>This is displayed when the <b>Type</b> column is <b>THRESHOLD</b> or <b>OUTLIER</b>.</li> <li>When the <b>Type</b> column is <b>THRESHOLD</b>, <b>LOWER LIMIT</b> indicates that the monitoring item's system performance exceeded the threshold.</li> <li>When the <b>Type</b> column is <b>THRESHOLD</b>, <b>LOWER LIMIT</b> indicates that the monitoring item's system performance or system performance fell below the lower limit value.</li> </ul> </li> <li><i>YYYY/MM/DD hh</i>: <i>mm</i>: <i>ss</i> <ul> <li>This is displayed when the <b>Type</b> column is <b>TREND</b>, and indicates the date and time when it is expected that service performance or system performance of the monitoring item will exceed the threshold (<i>year/month/date hour</i>: <i>minute</i>: <i>second</i>).</li> </ul> </li> <li><b>SERVICE FAILURE</b> <ul> <li>This is displayed when the <b>Type</b> column is <b>AVAILABILITY</b>, and indicates that the monitoring item (indicated under <b>Monitor item</b>) has recovered from a stop.</li> </ul> </li> <li>If you click this column on a row, you will see in the Troubleshoot window a graph of the monitoring item's service performance. For details about how to do this, see 4.4 Support</li> </ul>

No.	Item	Description
7	Details	methodology for root cause investigation when an error or warning is displayed for a monitored service.
8	Service group	This column displays the name of the service group in which the event occurred.
9	Service	This column displays the name of the monitored service in which the event occurred.
10	Host	An entry (other than a hyphen) is displayed in this column when system performance is monitored. The entry is the name of the host on which the event occurred. For an event associated with service performance monitoring, a hyphen $(-)$ is displayed.
11	Monitored target	This column displays the name of the monitored target for which the event occurred.
12	Monitor item	This column displays the monitoring item for which the event occurred.

#### **10.3.1 Configuration of the Real-time Monitor window**

#### (1) Window configuration

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### (2) Window description

The Real-time Monitor window is used in monitoring the status of monitored services. When it becomes clear that a monitored service requires attention, you can specify the monitored service and obtain the details of the problem immediately. After you have dealt with the problem, you can verify that the monitored service's status has returned to normal.

The Real-time Monitor window is composed of the following areas:

- Services area
- Service performance information area
- System performance information area
- The Event and Performance chart tabs area

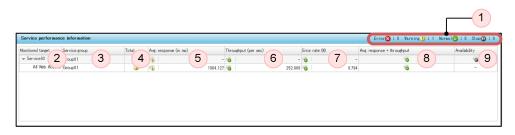
Use the **System performance information** area to interact with Performance Management. If no value has been set for the pfmManagerHost property in the jplitslm.properties system definition file, it is assumed that Performance Management is not linked and the **System performance information** area is not displayed.

#### 10.3.2 Services area

This area is common to all the SLM windows. For details about the Services area window, see (3) Services area.

#### 10.3.3 Service performance information area

#### (1) Window configuration



#### (2) Window description

Depending on what you selected in the Services area, the service performance is displayed as follows:

- If you executed a search in the **Services** area in order to narrow down the list of monitored services, this window displays the service performance for only the monitored services that are displayed as search results.
- If you selected a service group in the **Services** area, this window displays the service performance of all the monitored services in that service group. When you click ► to the left of a monitored service, the icon changes to ▼ and the monitored targets and their service performance are displayed.
- If you selected in the **Services** area a monitored service or a monitored target within a monitored service, this window displays information about the selected monitored service and its monitored targets.
- If nothing was selected in the **Services** area, this window displays the service performance of all the monitored services that the logged-in user is responsible for monitoring.

The display is updated every three seconds.

No.	Item	Description
1	Cumulative totals	This area shows the total number of events of each event type (error, warning, normal, and stopped) for all the monitored targets in the monitored services that are displayed in the <b>Service performance information</b> area.
2	Monitored target	This column displays the names of the monitored services and monitored targets.
3	Service group	This column displays the name of the service group to which each monitored service belongs.
4	Total	This column displays as icons the overall monitoring results, determined comprehensively based on the conditions of the monitored services displayed under <b>Monitored target</b> . The following icons are used:
		There is at least one item for which an error has occurred in threshold monitoring or availability monitoring.
		(warning)
		There is at least one item for which a warning has occurred in trend monitoring or out-of- range value detection.
		🧭 (normal)
		The status of all items is normal.

No.	Item	Description
4	Total	(monitoring stopped) <sup>#1</sup>
		The monitored service is not being monitored currently. In this case, 🕕 is also
		displayed on this row in the <b>Avg. response (in ms)</b> , <b>Throughput (per sec)</b> , <b>Error rate (%)</b> , and <b>Avg. response + throughput</b> columns.
		In addition, either <b>(10)</b> or a hyphen (-) is displayed in this row in the <b>Availability</b> column.
		If multiple conditions occur in the monitoring results for a monitored service, or if multiple conditions occur in monitored targets belonging to a monitored service, the icon for the highest-priority event is displayed, according to the following priority order (highest to lowest): error > warning > normal. (In the case where monitoring of a monitored service has stopped, only the stopped status is possible.)
5	Avg. response (in ms)	These columns display for each monitoring item a measurement value (up to 3 digits after the
6	Throughput (per sec)	decimal point) and an icon indicating the current status. The following icons are used: 🔞
7	Error rate (%)	(error), $(!)$ (warning), $(!)$ (normal), <sup>#2</sup> and $(!)$ (monitoring stopped). <sup>#1</sup>
		On a row for a monitored service, if different conditions occur in multiple monitored targets within the monitored service, the icon for the highest-priority status is displayed, according to the following priority order (highest to lowest): error > warning > normal. (In the case where monitoring of a monitored service has stopped, only the stopped status is possible.) Consider an example with the following statuses:
		• All Web Access: 🧭 (normal)
		• Web transaction 1: 🧭 (normal)
		• Web transaction 2: (1) (warning)
		In this case, the status for the monitored service would show $(!)$ (warning).
		The measurement values for a monitored service are always shown as
8	Avg. response + throughput	This column displays the out-of-range value detection status for average response time and throughput combined, using the following icons: $()$ (warning), $()$ (normal) <sup>#2</sup> or $()$ (monitoring stopped). <sup>#1</sup>
		On a row for a monitored service, if different conditions occur in multiple monitored targets within the monitored service, the icon for the highest-priority status is displayed, according to the following priority order (highest to lowest): error > warning > normal. (In the case where monitoring of a monitored service has stopped, only the stopped status is possible.)
9	Availability	This column displays the availability of a monitored service, using the following icons: 😣
		(error), $\bigotimes$ (normal), or $\bigcirc$ (monitoring stopped). <sup>#3</sup>
		Availability is not displayed unless you are linked to Performance Management.#4
		If availability monitoring has not been configured, a hyphen (-) is displayed.
		In addition, if it is determined that a monitored service was stopped by PFM - Agent for Service Response, an error is displayed under <b>Availability</b> for the monitored service, as well as under <b>Total</b> .

#### #1

A monitored service will also be shown in the **Total** column as stopped if the process executing performance analysis of a monitored target within that monitored service experiences a memory shortage or abnormal termination of a thread after monitoring starts. In this case, stop the monitoring of the corresponding monitored service, and then restart monitoring after you have addressed the cause based on the KNAS32021-E message in the message log. For details about the message log, see 7.2.4 Message logs.

#2

If threshold monitoring and out-of-range value detection have not been configured, this will always be shown as

(normal) once monitoring of the monitored service has started. In this case, service performance can be acquired, but you cannot determine normal, warning, or error status from the icon.

#3

After monitoring starts, the icon displayed under **Availability** will not change to normal or abnormal until after the first monitoring results are received from the PFM - Agent for Service Response. Therefore, if it takes a long time after the start of service monitoring for the monitoring results to arrive from the PFM - Agent for Service Response, the monitoring stopped icon might continue to appear in the **Availability** column.

#4

If no value has been set for the pfmManagerHost property in the jplitslm.properties system definition file, it is assumed that Performance Management is not linked.

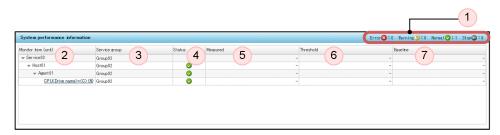
When you select one of the monitored services under **Monitored target**, it switches what is displayed in the **Event** and **Performance chart** tabs area.

### (3) Supplemental notes

- On occasion, there might be a time lag of a few seconds to several tens of seconds before information is displayed in the **Service performance information** area and the **Event** and **Performance chart** tabs area.
- If you perform trend monitoring, start the trend monitoring when you obtain service performance that is within at least 30% of the range of the most recent trend calculation. However, if the service performance decreases after monitoring starts, stop monitoring and restart it once service performance stabilizes. At this time, it will be displayed in the **Service performance information** area as normal rather than stopped. Even if the trend has exceeded the threshold, it will be displayed as normal until service performance stabilizes.

### 10.3.4 System performance information area

#### (1) Window configuration



### (2) Window description

The **System performance information** area is the window you use to interact with Performance Management. If no value has been set for the pfmManagerHost property in the jplitslm.properties system definition file, it is assumed that Performance Management is not linked and the **System performance information** area is not displayed.

When you select a monitored service or monitored target in the **Services** area, the host that provides the monitored service you selected is displayed in this window.

Similarly, when you select a monitored service or monitored target in the **Service performance information** area, the host that provides the monitored service you selected is displayed in this window.

<sup>10.</sup> SLM Windows

JP1/Service Level Management Description

If you click  $\triangleright$  to the left of the host, the icon changes to  $\mathbf{v}$  and the monitoring agent that belongs to the host is displayed.

If you then click  $\blacktriangleright$  to the left of the monitoring agent, the icon changes to  $\checkmark$  and the system performance monitoring items are displayed.

The update interval of the display can be set in the dashboardSystemUpdateInterval property in the jplitslm.properties system definition file.

No.	Item	Description
1	Cumulative totals	This area shows the total number of events of each event type (error, warning, normal, and stopped) for all the monitored items that are displayed in the <b>System performance information</b> area.
2	Monitor item (unit)	This column displays the name of the monitored service, host, monitoring agent, or monitoring item.
3	Service group	This column displays the name of the service group to which the monitored service belongs.
4	Status	This column displays the monitoring results for the host, monitoring agent, or monitoring item displayed on the same row in the <b>Monitored target</b> column, using the following icons:
		(error)
		There is at least one item for which an error has occurred in threshold monitoring.
		(warning)
		There is at least one item for which a warning has occurred in trend monitoring or out-of- range value detection.
		🧭 (normal)
		The status of all items is normal.
		(monitoring stopped)
		The monitored service is not being monitored.
		Priority is set in the order of Error > Warning > Normal.
		In cases when different monitoring results have been generated for multiple monitoring items included in a single host or monitoring agent, icons will be displayed in order of those with a higher priority (other statuses will not be generated for a monitored service while monitoring is being suspended).
		The row for a monitored service displays a hyphen (-).
		This item will be propagated according to the following rules:
		<ul> <li>Amongst each monitoring item being monitored with an agent, the monitoring status of the highest level of priority will be displayed for the Status] of that agent.</li> </ul>
		• Amongst each agent conducting monitoring with an agent, the monitoring status of the highest level of priority will be displayed for the <b>Status</b> of that host.
		However, the monitoring status of system performance will not be propagated to the service of the origin. To configure propagation in such manner, edit the dashboardPropagateSystemStatus property of the system definition file. For details on the system definition file, see 5.6 Editing the system definition files to change settings.
5	Measured	These three columns each display a value (up to 3 digits after the decimal point) for the item.
6	Threshold	If there is no data to display, a hyphen (-) is displayed.
7	Baseline	

#### 10.3.5 Event and Performance chart tabs area (Event tab selected)

#### (1) Window configuration

(	1												2
E	ven	1000	Performance chart										
Group01 -	Service	:03 - 4	All Web Access								Erro	😣 : 0   arning]	: 8 Normal 😋 : 0
												Total: 8	Showing: 1 - 8 🕨
Status	Level		When detected		Туре		Details		Service group	Service	Host	Monitored target	Monitor item
4	) (	5	2020/02/05 04:11:05 2020/02/05 03:41:05	6	OUTLIER	7)	UPPER LIMIT	8	Group01 Group01	Service 10	11	All We 12	Ave. r 13
Unread	0	9	2020/02/05 03:41:05	$\sim$	OUTLIER	-	LOWER LIMIT	-	Group 01	Service03	-	All Web Access	Error rate
Unread	0	1	2020/02/05 03:11:05		OUTLIER		LOWER LIMIT		Group 01	Service03	-	All Web Access	Error rate
Unread	(	1	2020/02/05 01:21:05		OUTLIER		UPPER LIMIT		Group01	Service03	-	All Web Access	Avg. response
Unread	(	1	2020/02/05 01:21:05		OUTLIER		UPPER LIMIT		Group 01	Service03	-	All Web Access	Avg. response+
Unread	(	9	2020/02/05 01:11:05		OUTLIER		UPPER LIMIT		Group 01	Service03	-	All Web Access	Throughput
Unread		1)	2020/02/05 01:01:05		OUTLIER		UPPER LIMIT		Group01	Service03	-	All Web Access	Throughput

#### (2) Window description

This window displays a list of events. The events displayed depend on the selections in the **Services** and **Service performance information** areas, as described below:

No.	Selection in the Services area	Selection in the Service performance information area	Events displayed on the Event tab (Event and Performance chart tabs area)
1			Displays events for the monitored targets within the monitored services of all service groups.
2	Service group		Displays events for the monitored targets in all the monitored services in the service group selected in the <b>Services</b> area.
3		Monitored service	Displays events for the monitored targets in the monitored service selected in the <b>Service performance information</b> area.
4		Monitored target	Displays events for the monitored target selected in the <b>Service performance information</b> area.
5	Monitored service		Displays events for all the monitored targets within the monitored service selected in the <b>Services</b> area.
6		Monitored service	Displays events for the monitored targets in the monitored service selected in the <b>Service performance information</b> area.
7		Monitored target	Displays events for the monitored target selected in the <b>Service performance information</b> area.
8	Monitored target		Displays events for the monitored target selected in the Services area.
9		Monitored service	Displays events for all the monitored targets in the monitored service selected in the <b>Service performance information</b> area.
10		Monitored target	Displays events for the monitored target selected in the <b>Service performance information</b> area.

#### Legend:

--: No selection.

Note that system performance monitoring and availability monitoring events are also displayed in the list of events. When you select a monitored target in the **Service performance information** area in order to set system performance monitoring or availability monitoring for a monitored service, the event list will display events related to the system performance and availability monitoring that were set for the monitored service to which that monitored target belongs.

<sup>10.</sup> SLM Windows

The events displayed when you select a service group or monitored service are displayed in the same way as the service performance events.

Events are displayed with the most recent at the top. If you have narrowed down the displayed monitored targets by executing a search in the **Services** area, selecting a service group will display information for only the monitored targets that are shown in the search results.

Once it is displayed, an event continues to appear until it reaches its seven-day cutoff. The display is updated every three seconds.

No.	Item	Description
1	X - Y - Z	This area displays the names of the service group, the monitored service, and the monitored target whose events you have selected to view.
		X is the name of the service group, $Y$ is the name of the monitored service, and $Z$ is the name of the monitored target.
		Not all three names are always displayed:
		• If a service group was selected in the <b>Services</b> area, only <i>X</i> is displayed.
		• If a monitored service was selected in the <b>Services</b> area or <b>Service performance</b> <b>information</b> area, only <i>X</i> - <i>Y</i> are displayed.
		• If a monitored target was selected in the <b>Services</b> area or <b>Service performance information</b> area, <i>X</i> - <i>Y</i> - <i>Z</i> are displayed.
		• If nothing was selected in the <b>Services</b> and <b>Service performance information</b> areas, nothing is displayed.
2	Cumulative totals	This area shows the cumulative total for each event type (error, warning, or normal) that occurred during the last seven days.
3	▲ Total: n1 Showing: n2-n3 ▶	When more than 20 events occurred in the last seven days, the additional events are displayed on subsequent pages. Click • or • to display the previous or next page, respectively. If there is no previous page or next page, you cannot click icon.
		n2 and $n3$ indicate the range of event items displayed on the current page, and $n1$ is the total number of displayed events.
		If there is more than one monitored service, the maximum number of events displayed per
		page can be changed by specifying the dashboardEventListRecentViewSize
		property. When you change the number of items to be displayed per page, <i>n1</i> will reflect the changed value. For details about the dashboardEventListRecentViewSize
		property, see 5.6.2 Editable definitions.
4	Status	This column indicates whether each event has been checked (read).
		Unread
		This is the default value, before the user has clicked the row's <b>Status</b> column. When <b>Unread</b> is displayed, the entire row is in displayed in boldface.
		Read
		This setting indicates that the row's Status column has been clicked.
		After you check an event by reviewing the contents of its row, click the row in this column to change <b>Unread</b> to <b>Read</b> . Once an event's <b>Status</b> column entry is changed to <b>Read</b> it cannot be changed back to <b>Unread</b> .
5	Level	This column displays for each event one of the following icons indicating the status of the average response time, throughput, and error rate at the time the event occurred. The following icons are used:
		(error)
		An error occurred in threshold monitoring or availability monitoring.
		1

No.	Item	Description
5	Level	(warning)
		A warning occurred in trend monitoring or out-of-range value detection.
		(normal)
		Errors that occurred in availability monitoring have been recovered.
		When multiple service performance events are applicable simultaneously, the icon for the highest-priority event is displayed, according to the following priority order (highest to lowest): error > warning > normal.
6	When detected	This column displays the date and time that the event occurred, in the format <i>YYYY/MM/DD hh</i> : <i>mm</i> : <i>ss</i> ( <i>year/month/date hour</i> : <i>minute</i> : <i>second</i> ).
7	Туре	This column displays one of the following character strings indicting the type of the error or warning:
		THRESHOLD
		Monitoring detected that the threshold was exceeded (error). OUTLIER
		An out-of-range value that differs significantly from the norm for the monitored service was detected (warning).
		TREND
		A trend was detected indicating that the threshold seems likely to be exceeded (warning).
		AVAILABILITY Monitoring detected that the monitored service has stopped or has recovered from having
		stopped (error or normal).
8	Details	This column displays one of the following character strings providing more detail about the type of error or warning displayed in the <b>Type</b> column:
		UPPER LIMIT
		This is displayed when the <b>Type</b> column is <b>THRESHOLD</b> or <b>OUTLIER</b> . When the <b>Type</b> column is <b>THRESHOLD</b> , <b>UPPER LIMIT</b> indicates that the monitoring item's service performance or system performance exceeded the threshold.
		When the <b>Type</b> column is <b>OUTLIER</b> , <b>UPPER LIMIT</b> indicates that the monitoring item's service performance exceeded the upper limit value.
		LOWER LIMIT
		This is displayed when the <b>Type</b> column is <b>THRESHOLD</b> or <b>OUTLIER</b> .
		When the <b>Type</b> column is <b>THRESHOLD</b> , <b>LOWER LIMIT</b> indicates that the monitoring item's system performance exceeded the threshold.
		When the <b>Type</b> column is <b>OUTLIER</b> , <b>LOWER LIMIT</b> indicates that the monitoring item's service performance or system performance fell below the lower limit value.
		YYYY/MM/DD hh:mm:ss
		This is displayed when the <b>Type</b> column is <b>TREND</b> , and indicates the date and time when it is expected that service performance or system performance of the monitoring item will exceed the threshold ( <i>year/month/date hour:minute:second</i> ).
		SERVICE FAILURE
		This is displayed when the <b>Type</b> column is <b>AVAILABILITY</b> , and indicates that the monitoring item (indicated under <b>Monitor item</b> ) has stopped.
		SERVICE REPAIR
		This is displayed when the <b>Type</b> column is <b>AVAILABILITY</b> , and indicates that the monitoring item (indicated under <b>Monitor item</b> ) has recovered from a stop.
		If you click this column on a row, you will see in the Troubleshoot window a graph of the monitoring item's service performance. For details about how to do this, see 4.4 Support methodology for root cause investigation when an error or warning is displayed for a monitored service.
9	Service group	This column displays the name of the service group in which the event occurred.

No.	Item	Description
10	Service	This column displays the name of the monitored service in which the event occurred.
11	Host	An entry (other than a hyphen) is displayed in this column when system performance is monitored. The entry is the name of the host on which the event occurred. For an event associated with service performance monitoring, a hyphen (–) is displayed.
12	Monitored target	This column displays the name of the monitored target for which the event occurred.
13	Monitor item	This column displays the monitoring item for which the event occurred.

If you display the Troubleshoot window by clicking the **Troubleshoot** button on the **Performance chart** tab or by clicking the **Details** column on the **Event** tab in the **Event** and **Performance chart** tab area of the Real-time Monitor window, the Troubleshoot window will be displayed with the monitored service already selected.

#### (3) Supplemental notes

• On occasion, there might be a time lag of a few seconds to several tens of seconds before information is displayed in the **Service performance information** area and in the **Event** and **Performance chart** tabs area.

## 10.3.6 Event and Performance chart tabs area (Performance chart tab selected)

#### (1) Window configuration



### (2) Window description

The **Performance chart** tab is selectable only when you have selected a monitored target for a monitored service in the **Services** area or the **Service performance information** area.

You cannot display a performance chart for a system performance monitoring item.

The **Performance chart** tab displays for each monitoring item a line graph of the service performance of the selected monitored target of the monitored service. The display is updated every three seconds.

No.	Item	Description
1	X - Y - Z	This area displays the names of the service group, monitored service, and monitored target for which performance charts are being displayed. $X$ is the name of the service group, $Y$ is the name of the monitored service, and $Z$ is the name of the monitored target.

No.	Item	Description
2	Display interval pull-down menu	Use this pull-down menu to select the interval to be used for aggregating the data to be displayed on the performance charts. The following values can be selected (the default is 1 minute): <ul> <li>1 minute</li> <li>3 minutes</li> <li>5 minutes</li> </ul>
3	Troubleshoot button	Clicking this button displays the Troubleshoot window for the monitored target of the monitored service. You can check the past status of the monitored target of the selected monitored service. For details about how to check the past status, see 4.4.2 Checking past data.
4	Performance charts	<ul> <li>This area displays performance charts for the selected monitored target of the monitored service.</li> <li>Performance charts for the following monitoring items can be displayed: <ul> <li>Avg. response (in ms)</li> <li>Throughput (per sec)</li> <li>Error rate (%)</li> </ul> </li> <li>The following values can be plotted and displayed as line graphs on each performance chart:</li> </ul>
		<ul> <li>Measured</li> <li>Threshold<sup>#1</sup></li> <li>Baseline<sup>#2</sup></li> <li>Error Predict. (upper limit)<sup>#2</sup></li> <li>Error Predict. (lower limit)<sup>#2</sup></li> </ul>
		A legend showing the meaning of each graph line is generated and displayed on the right side of a performance chart. Use the Select items to be displayed dialog box to select the values to be plotted and displayed. Click the legend to display the Select items to be displayed dialog box. Select the check boxes for the items whose values you want to have plotted and displayed, and then click the <b>Settings</b> button. The values for <b>Measured</b> , <b>Threshold</b> , and <b>Baseline</b> are displayed by default. Each graph line is displayed based on values aggregated over the time period set in the <b>Display</b> <b>interval</b> pull-down menu.
5	Performance chart details	<ul> <li>Details are displayed when you hover the cursor on a graph line on a performance chart. The following items are displayed:</li> <li>Type of values plotted for the graph line</li> <li>Date and time of the value where the cursor is hovered, in the format <i>YYYY/MM/DD hh:mm:ss (year/month/date hour:minute:second)</i></li> <li>Value at the point where the cursor is hovered</li> </ul>

#### #1

This is displayed if you have set SLO monitor settings in the Settings window.

#### #2

This is displayed if you have set Error Predict. settings in the Settings window.

#### Real-time Monitor window (performance chart baseline)

- Note that **Baseline** will not be displayed until the number of days since the start of monitoring has reached the **Days till start** value that was set under **Error Predict. settings** in the Monitor settings area of the Settings window. For details about the **Days till start** setting in the Settings window, see 3.2.9 Setting up the monitoring items for service performance.
- If there is no information for a specific time period (for example, if there is a period during which no data was stored because monitoring of the relevant monitored service had stopped), the applicable lines on the performance chart will not be displayed.

### (3) Supplemental notes

- On occasion, there might be a time lag of a few seconds to several tens of seconds before information is displayed in the **Service performance information** area and the **Event/Performance chart** area.
- If the system running SLM experiences heavy load conditions, it might delay display of the performance charts in the **Performance chart** tab. If this occurs, select **3 minutes** or **5 minutes** in the **Display interval** pull-down menu.

#### **10.4.1 Configuration of the Troubleshoot window**

#### (1) Window configuration

Home	Real-	time Moni	itor 🛛 🗃 💭 Troubleshoo	t 🖸 💷 Repi	ort				*	Settings
rvices		Event	Performance chart							
2	)							E	rror🔕:3 Warning 🔱:	10 Normal
Show all									4 Total: 13 Show	ing: 1 - 18
- Group01	Status	Level	When detected	Type	Details	Service group	Service	Host	Monitored target	Monitor item
+ Service01	Unread		2020/02/05 05:11:05	OUTLIER	UPPER LIMIT	Group01	Service03	-	All Web Access	Avg. respon
+ Service02	Unread		2020/02/05 05:11:05	OUTLIER	UPPER LIMIT	Group01	Service03	-	All Web Access	Ave. respo
+ Service03	Unread	•	2020/02/05 04:50:01	THRESHOLD	UPPER LIMIT	Group 02	Service04	-	All Web Access	Avg. respo
	Unread	8	2020/02/05 04:40:01	THRESHOLD	UPPER LIMIT	Group 02	Service04	-	All Web Access	Avg. respo
Group02	Unread	8	2020/02/05 04:30:01	THRESHOLD	UPPER LIMIT	Group 02	Service04	-	All Web Access	Avg. respo
+ Service84	Unread	٩	2020/02/05 04:11:05	OUTLIER	UPPER LIMIT	Group 01	Service03	-	All Web Access	Avg. respo
+ Service05	Unread		2020/02/05 03:41:05	OUTLIER	UPPER LIMIT	Group01	Service03	-	All Web Access	Throughpu
Group 03	Unread	٢	2020/02/05 03:41:05	OUTLIER	LOWER LIMIT	Group01	Service03	-	All Web Access	Error rate
+ Service06	Unread	٩	2020/02/05 03:11:05	OUTLIER	LOWER LIMIT	Group01	Service03	-	All Web Access	Error rate
Group04	Unread	٩	2020/02/05 01:21:05	OUTLIER	UPPER LIMIT	Group01	Service03	-	All Web Access	Avg. respo
	Unread	٩	2020/02/05 01:21:05	OUTLIER	UPPER LIMIT	Group01	Service03	-	All Web Access	Avg. respo
+ Service07	Unread	٢	2020/02/05 01:11:05	OUTLIER	UPPER LIMIT	Group01	Service03	-	All Web Access	Throughpu
	Unread		2020/02/05 01:01:05	OUTLIER	UPPER LIMIT	Group81	Service03	-	All Web Access	Throughpu

### (2) Window description

The Troubleshoot window is used when an error or warning has been detected to check when the event that caused the problem occurred. In addition, if Performance Management is linked, you can check for problems in the host or middleware that provides the affected monitored service.

The Troubleshoot window is composed of the following areas:

- Services area
- Event and Performance chart tabs area
- Access log area

## (3) Supplemental notes

- The Troubleshoot window display is not updated in real time. To update the display, you must click the **O** (reload) button, which is one of the **Troubleshoot** buttons at the top of the window. When you update, the **Event** tab becomes selected in the **Event** and **Performance chart** tabs area.
- Depending on how you display the Troubleshoot window, the **Event** and **Performance chart** tabs area will display different events that occurred at different times:
  - If you display the Troubleshoot window immediately after login by clicking the **Troubleshoot** button at the top of a window, the displayed Troubleshoot window displays a list of the events that had occurred at the time of your login.

- If you display the Troubleshoot window a while after login by clicking the **Troubleshoot** button at the top of a window, the displayed Troubleshoot window displays a list of the events that had occurred at the time you displayed the Troubleshoot window.
- If you display the Troubleshoot window by clicking the **Details** column for an event in the **Events in the last 7 days** area of the Home window or in the **Event** and **Performance chart** tabs area of the Real-time Monitor window, the displayed Troubleshoot window displays performance charts representing the service performance at the time the clicked event occurred. If you then click the **Event** tab, the Troubleshoot window displays a list of the most recent events associated with the clicked event's monitored service at the time of the transition to the Troubleshoot window. If you click the **Details** column for an event in the **Event** and **Performance chart** tabs area in the Troubleshoot window, when you return to the **Event** tab from the **Performance chart** tab, the list of the most recent events will still be displayed there.
- If you display the Troubleshoot window by clicking the **Troubleshoot** button in the **Event** and **Performance chart** tabs area of the Real-time Monitor window, the displayed Troubleshoot window displays performance charts representing the service performance at the time you clicked. If you then click the **Event** tab, the Troubleshoot window displays a list of the most recent events associated with the clicked event's monitored service at the time of the transition to the Troubleshoot window.
- If you redisplay the Troubleshoot window (while the Troubleshoot window is already being displayed) by clicking the O (reload) button, which is one of the Troubleshoot buttons at the top of the window, the display will be of a list of events that had occurred at the time you clicked.

#### 10.4.2 Services area

This area is common to all the SLM windows. For details about the Services area window, see (3) Services area.

#### 10.4.3 Event and Performance chart tabs area (Event tab selected)

#### (1) Window configuration and Window description

This window displays the same contents as the Real-time Monitor window, except that the Troubleshoot window displays 40 events per page. See 10.3.5 Event and Performance chart tabs area (Event tab selected).

#### (2) Supplemental notes

- Depending on how you display the Troubleshoot window, the **Event** and **Performance chart** tabs area will display different events that occurred at different times:
  - If you display the Troubleshoot window by clicking the **Troubleshoot** button at the top of a window, the displayed Troubleshoot window displays a list of the events that had occurred at the time of your login.
  - If you display the Troubleshoot window by clicking the **Details** column for an event in the **Events in the last 7 days** area of the Home window or in the **Event** and **Performance chart** tabs area of the Real-time Monitor window, the displayed Troubleshoot window displays performance charts representing the service performance at the time you clicked. If you then click the **Event** tab, the Troubleshoot window displays a list of the events that had occurred at the time you clicked the **Details** column. However, if you click the **Details** column in the Troubleshoot window, it will not change the time displayed in the **Event** and **Performance chart** tabs area.
  - If you display the Troubleshoot window by clicking the **Troubleshoot** button in the **Event** and **Performance chart** tabs area of the Real-time Monitor window, the displayed Troubleshoot window displays performance charts representing the service performance at the time you clicked. If you then click the **Event** tab, the

Troubleshoot window displays a list of the events that had occurred at the time you clicked the **Troubleshoot** button.

If you redisplay the Troubleshoot window (while the Troubleshoot window is already being displayed) by clicking the (reload) button, which is one of the Troubleshoot buttons at the top of the window, the display will be of a list of events that had occurred at the time you clicked.

# 10.4.4 Event and Performance chart tabs area (Performance chart tab selected)

(1) Window configuration



### (2) Window description

This window displays performance charts for a monitored target within a monitored service.

No.	Item	Description
1	X - Y - Z	This area displays the names of the service group, monitored service, and monitored target within the monitored service whose performance charts you want to view. $X$ is the name of the service group, $Y$ is the name of the monitored service, and $Z$ is the name of the monitored target within the monitored service.
2	Node state display pull-down menu	<ul> <li>Use this pull-down menu to select one of the following items as the base for determining the node state display for monitoring items (the default is Event):</li> <li>Event</li> <li>Monitor item state</li> <li>The display status of Configuration information and Graph depends on your selection here.</li> </ul>

No.	Item	Description
3	Display interval pull-down menu	Use this pull-down menu to select the interval to be used for aggregating the data to be displayed on the performance charts. The following values can be selected (the default is 1 hour): • 1 minute • 10 minutes • 30 minutes • 1 hour • 6 hours • 1 day Regardless of the value you select, the number of values that will be plotted on each performance chart will be 61. The values calculated from data obtained over the time period you select will be plotted onto a chart divided into 61 equally-sized display intervals.
4	Specify date and time button	Select the data and start time that will be subject to being displayed in the performance chart. Specify the data and time with the <b>Specify date and time</b> dialog box that appears when the <b>Specify data and time</b> button is clicked. You can specify a date and time up to 60 days in the past.
5	Access log button	Click this button to display the Access log area in the Troubleshoot window, where you can check the past status of the selected monitored target within the monitored service. For details about how to check the past status, see 4.4.2 Checking past data.
6	🤾 message 📎	This area is displayed when you display charts from a list of events.         message in this area consists of an icon indicating the type of event, the type of event in text, the event details, the monitoring item, and the date and time the event occurred. The following format is used:         icon event-type : detail : monitoring-item         YYYY/MM/DD hh : mm : ss         (year/month/date hour : minute : second)         If you click or at the left or right end of this area, the message for the preceding or subsequent event, respectively, is displayed. If there is no preceding or subsequent event, the corresponding icon cannot be clicked.
7	Configuration information	<ul> <li>This area displays the relationships between monitored services and hosts.</li> <li>When you display performance charts from a list of events, this area displays configuration information for the monitored services in which the selected event occurred. When you select a monitored target from the Services area, this area displays configuration information for the service group or monitored service selected from the Services area.</li> <li>The configuration information that is displayed depends on what you select on the Node state display pull-down menu: <ul> <li>Event is selected</li> <li>The information that is displayed is based on events that occurred within the period of time displayed in Graph.</li> </ul> </li> <li>Monitor item state is selected <ul> <li>The information that is displayed is based on the status of the monitoring item.</li> </ul> </li> <li>Priority for the monitoring status is set in the order of Error &gt; Warning &gt; Normal.</li> <li>The monitoring status will be propagated according to the following rules: <ul> <li>For the service monitoring status, the monitoring status of the monitoring it a prent-and-child relationship with the service will be displayed. However, the monitoring status of each host of the system performance will not be propagated to the monitoring status of the service. To configure propagation in such manner, edit the dashboardPropagateSystemStatus property of the system definition file. For details on the system definition file, see 5.6 Editing the system definition files to change settings.</li> </ul></li></ul>

No.	Item	Description
7	Configuration information	<ul> <li>For the monitoring status of a monitored target, the monitoring status of the highest level of priority for a monitoring item in a parent-and-child relationship with the monitored target will be displayed.</li> <li>For the monitoring status of a monitoring item, the monitoring status of events that have occurred for that monitoring item during the currently displayed period will be displayed. If multiple events have occurred, the monitoring status of the highest level of priority will be displayed. If no events have occurred, the normal icon will be displayed.</li> <li>Even when the parentnode is normal, if an error or warning status has been generated with the child node, the status of the child node will be propagated to the parent node. When multiple child nodes belonging to a parent node are in different statuses, the status will be propagated to the parent node in order of those with a higher level of priority. However, a different status will not be propagated to a node in the status where monitoring is being stopped.</li> <li>In cases when an error or warning has been displayed for a monitoring item regarding system performance, the status will be propagated to the monitored service if true has been configured for the dashboardPropagateSystemStatus property of the system definition file (jplitslm.properties) of SLM - Manager. The status will not be propagated to the monitoring item to see a performance chart for that monitoring item. Up to 10 charts can be displayed in the Graph area. To hide a displayed performance chart, click</li> <li>for the monitoring item or click is to the right of the performance chart itself.</li> <li>Click for a monitoring item or click is to the right of the performance chart itself.</li> </ul>
8	Configuration information legend	You can use the check box next to each legend icon to show or hide the corresponding monitor items in the <b>Configuration information</b> area.
9	Graph	<ul> <li>This area displays performance charts for the selected events.</li> <li>The date and time (<i>YYYY/MM/DD</i> hh: mm: ss (year/month/date hour: minute: second)) are displayed with the following performance charts:</li> <li>Avg. response (in ms)</li> <li>Throughput (per sec)</li> <li>Error rate (%)</li> <li>If you are linked to Performance Management, you can also display performance charts for system performance.</li> <li>In each performance chart, the following items can be displayed as a line graph:</li> <li>Measured (avg)</li> <li>The average measured values for the period divided into 61 equally-sized display intervals.</li> <li>Measured (max)</li> <li>The maximum measured values for the period divided into 61 equally-sized display intervals.</li> <li>Measured (min)</li> <li>The minimum measured values for the period divided into 61 equally-sized display intervals.</li> <li>Threshold</li> <li>The value set under SLO monitor settings in the Settings window.</li> <li>Baseline</li> <li>The average baseline value for the period divided into 61 equally-sized display intervals.</li> <li>Error Predict. (upper limit)</li> <li>The maximum baseline value for the period divided into 61 equally-sized display intervals.</li> <li>Error Predict. (lower limit)</li> </ul>

No.	Item	Description
9	Graph	The minimum baseline value for the period divided into 61 equally-sized display intervals. This graph is not displayed unless <b>Error Predict. settings</b> is set in the Settings window.
		The upper part of the performance chart depends on what you select on the <b>Node state display</b> pull-down menu:
		• Event is selected
		Events that occurred within the period of time displayed in the performance chart are displayed as icons.
		• Monitor item state is selected
		Events that occurred within the period of time displayed in the performance chart are displayed as icons, plus the status of the monitoring item is displayed as a band.
		(error): The band is displayed in red.
		(warning): The band is displayed in yellow.
		If your <b>Display interval</b> specification is six hours or one day, events are displayed as one icon per minute. For finer-grained checking of the details of event occurrence, specify one hour or a smaller interval in <b>Display interval</b> .
		A legend showing the meaning of each graph line is generated and displayed on the right side of a performance chart.
		Use the Select items to be displayed dialog box to select the values to be plotted and displayed. Click the legend to display the Select items to be displayed dialog box. Select the check boxes for the items whose values you want to have plotted and displayed, and then click the <b>Settings</b> button. The values for <b>Measured (avg)</b> , <b>Measured (max)</b> , <b>Measured (min)</b> , <b>Threshold</b> , and <b>Baseline</b> are displayed by default.
		Each graph line is displayed based on values aggregated over the time period set in the <b>Display interval</b> pull-down menu. However, the width of the bands indicating timeframes of variation is the same regardless of the display interval.
10	Performance chart details	Details are displayed when you hover the cursor over a graph line on a performance chart. The following items are displayed:
		• Type of values plotted for the graph line
		• Date and time of the value where the cursor is hovered, in the format $YYYY/MM/DD$
		hh:mm:ss (year/month/date hour:minute:second)
		• Value at the point where the cursor is hovered

#### Table 10-3: Items displayed in the Configuration information area

No.	Header	Items displayed			
		Service performance-related node	System performance-related node		
1	Service	Displays the monitored service.			
2	Host	Nothing	Displays the host belonging to the monitored service in the parent node.		
3	Monitored target	<ul> <li>Displays one of the following belonging to the monitored service in the parent node:</li> <li>All Web Access</li> <li>web-transaction-name</li> </ul>	Displays the monitoring agents belonging to the host in the parent node.		
4	Monitor item	Displays the service performance monitoring items belonging to the monitored target in the parent node. The following monitoring items can be displayed: • Ave. Response • Throughput • Error rate	Displays the system performance monitoring items belonging to the monitored target in the parent node.		
5	Average <sup>#</sup>	Displays for each monitoring item the average value c in the <b>Measured (avg)</b> graph.	alculated from the data points (maximum of 61) used		

No.	Header	Items displayed		
		Service performance-related node	System performance-related node	
6	Maximum <sup>#</sup>	Displays for each monitoring item the maximum value calculated from the data points (maximum of 61) used in the <b>Measured (max)</b> graph.		
7	Minimum <sup>#</sup>	Displays for each monitoring item the minimum value calculated from the data points (maximum of 61) used in the <b>Measured (min)</b> graph.		
8	Unit	Displays the unit of measurement used for each mon	itoring item.	

#

If there are no data points for a calculation in the entire range from the left end to the right end of the performance chart, a hyphen (-) is displayed.

#### Cases where items are not displayed on the performance chart

- The performance chart baseline will not be displayed until the number of days since the start of monitoring has reached the **Days till start** value that was set under **Error Predict. settings** in the **Monitor settings** area of the Settings window. For details about the **Days till start** setting in the Settings window, see 3.2.9 Setting up the monitoring items for service performance.
- If there is no information for a specific time period (for example, if there is a period during which no data was stored because monitoring of the relevant monitored service had stopped), the applicable lines on the performance chart will not be displayed. In addition, if monitoring of a monitored service stops before the calculation of a point of variation on the graph, the band indicating the variation point will not appear immediately prior to the stop.

#### Handling of missing performance data on the performance chart

If there is a period for which no performance data was stored in the database, the immediately preceding status is displayed continuously up to the next recorded event.

#### Interval displayed in the performance charts

- When an event is selected from the event list while the **Performance chart** tab is displayed in the Troubleshoot window, the performance charts are displayed so that the display interval selected in **Display interval** is centered at the time the event occurred.
- When a monitored target is selected from the **Services** area or the reload button is clicked while the **Performance chart** tab is displayed in the Troubleshoot window, the performance charts are displayed so that the current time is positioned at the right end of the chart using the display interval selected in **Display interval**.
- When you specify a date and time in the Specify date and time dialog box, the performance charts are displayed so the time that you specified is centered using the display interval selected in **Display interval**.

#### Manipulating performance charts

By dragging a performance chart left and right, you can check the status of the monitored service in time periods before and after the occurrence of the event. With a single drag, you can see an interval that is the same duration as the current display interval. For example, if the display interval is 10 minutes, one drag lets you check a total of 20 minutes.



### (3) Supplemental notes

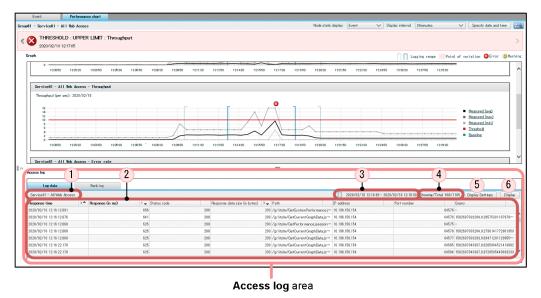
- The **Performance chart** tab cannot be selected unless you have selected a monitored target within a monitored service in the **Services** area.
- Depending on how you display the Troubleshoot window, the **Event** and **Performance chart** tabs area will display different events that occurred at different times.
  - If you display the Troubleshoot window by clicking the **Troubleshoot** button at the top of a window, the displayed Troubleshoot window displays a list of the events that had occurred at the time of your login.
  - If you display the Troubleshoot window by clicking the **Details** column for an event in the **Events in the last 7 days** area of the Home window or in the **Event** and **Performance chart** tabs area of the Real-time Monitor window, the displayed Troubleshoot window displays performance charts representing the service performance at the time you clicked. If you then click the **Event** tab, the Troubleshoot window displays a list of the events that had occurred at the time you clicked the **Details** column. However, if you click the **Details** column in the Troubleshoot window, it will not change the time displayed in the **Event** and **Performance chart** tabs area.
  - If you display the Troubleshoot window by clicking the **Troubleshoot** button in the **Event** and **Performance chart** tabs area of the Real-time Monitor window, the displayed Troubleshoot window displays performance charts representing the service performance at the time you clicked. If you then click the **Event** tab, the Troubleshoot window displays a list of the events that had occurred at the time you clicked the **Troubleshoot** button.
  - If you redisplay the Troubleshoot window (while the Troubleshoot window is already being displayed) by clicking the (c) (reload) button, which is one of the Troubleshoot buttons at the top of the window, the display will be of a list of events that had occurred at the time you clicked.
- If you select another service group, monitored service, or monitored target in the **Services** area while the **Performance chart** tab is being displayed, the display will switch automatically to the **Event** tab.
- Performance charts are displayed in the Troubleshoot window based on the results of aggregating past data. However, when the **Display interval** pull-down menu is set to **1 minute**, the performance charts will be displayed based on the most recent data.
- If the data update interval for a system performance monitoring item is too long with respect to the value set in the **Display interval** pull-down menu, the performance charts might be displayed as points. In such a case, set a longer display interval.
- The performance chart might not be displayed correctly when data from a version earlier than 10-10 is stored in the database and **Monitor item state** was selected from **Node state display**. The following are examples:
  - The status of the monitoring item is treated as normal only when no event has been issued in the past.
  - Even when the monitoring item has recovered from an overage of a threshold or baseline, its band is not displayed correctly because the monitoring item's previous status (error or warning) is displayed until the end of the display range.

10. SLM Windows

• If the status of the monitoring item changed to a warning error within the display range, that change is displayed correctly, but if the status changed from error to warning, error continues to be displayed.

#### 10.4.5 Access log area (Log data tab selected)

### (1) Window configuration



#### (2) Window description

This window displays a tabular list of access logs for a monitored target within a monitored service.

No.	Item	Description
1	X - All Web Access	This area displays the name of the service group whose performance charts are to be viewed.
		X is the name of a service group.
2	Access log list	This area displays a tabular list of access logs over the range indicated by the solid lines in the performance charts.
		The access logs displayed in the <b>Access log</b> area show data acquired up to five minutes before the current time.
		The items to display are selected in the Select items to be displayed window.
3	Logging range	This area displays the interval being displayed in the <b>Log data</b> tab using the following format.
		Display format
		YYYY/MM/DD hh:mm:ss - YYYY/MM/DD hh:mm:ss
4	Showing/Total	This area displays the number of access logs.
		Showing (nnnn)
		The number of access logs being displayed in the Log data tab
		Total (mmmm)
		The number of access logs in the range indicated by the solid lines in the performance charts
		Display format
		nnnn / mmmm

No.	Item	Description
5	Display Settings button	Clicking this button displays the Select items to be displayed window.
6	Display button	Clicking this button displays the <b>Confirmation of the display of the access log</b> window.

#### Logging range of the access logs

In the performance charts, dotted lines indicate the range targeted for display in the Access log area. Solid lines indicate the range actually being displayed in the Access log area.

#### Figure 10-2: Logging range in the Access log area

	Neb Access				Node state displ	ay: Event	Display interval 30	ninutes 🗸 🗸	Specify date and ti	ine
iraph							Loggin	ng rangePoint of	variation 🔞 Error	🕕 Va
				(1)						_
Service02 - All Web	b Access - Throughput			$\overline{\gamma}$						
	: 2020/02/12	37 2006.07 2007.37	L	L	2018.07 2019.37	5035.07 2022:37	20.2407 20.7527 2		Measured (and)     Measured (max)     Measured (min)     Treateold     Baseline	
Error rate (%) : 2020/0			(	2						
	Ranking		(			2020/02/12 20:14:28 -	2020/02/12 2018:28 SP	nowing/Total 1518/1518	Display Settings	Disp
Access be Los data Service02 - All Web Acce	Ranking	Status code		-	IP address	2020/02/12 20:14:28 - Port number	2020/02/12 20:18:28 St Rotor or	nowing/Total 1510/1510 Request data siz		Displ
Access be Los data Service02 - All Web Acce	Ranking	Status code 8		Path		Port number		Request data siz····	Display Settines Query 787 -	Displ
Access bg Log data Service02 - All Web Acce Response time	Ranking ess Response (in ms) S		Pesponse data s···· Pequest time	Path /jp1kslm/GetPerforma···	10.196.156.154	Port number 6	Referer	Request data siz***	Query	Displ
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Log data           Service02 - All Web Acce           Response time         8           2020/02/12 20.14.28.160         2020/02/12 20.14.28.160	Ranking ess Response (in ms) S 32 32	200 200	Persponse data s <sup>core</sup> Perguest time 292 2020/1/2/12 20 14 28 128 292 2020/1/2/12 20 14 28 128	Path /ip1ksim/GetPerforma*** /ip1ksim/GetSystemP*** /ip1ksim/GetCurrentG***	10.196.156.154 10.196.156.154 10.196.156.154	Port number 6 6 6	Referer 3551 http://10.197.206.11 3544 http://10.197.206.11	Request data siz*** 37.*** 37.***	Query 787 - 723 -	.5132-
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Access bg Log data Service02 - All Web Acce Response time 12020/02/12 20.14.28.160 2020/02/12 20.24.28.765 2020/02/12 20.14.28.765 2020/02/12 20.14.28.765	Ranking ess Response (in ms) S 32 32 31 47	200 200 200 200	Perponse data s <sup>unt</sup> Perpuest time 292 2020/12/12 20 H 28 129 292 2020/12/12 20 H 28 129 292 2020/12/12 20 H 28 129 292 2020/12/12 20 H 28 129	Path /p1kslm/GetPerforma*** /p1kslm/GetQurentG*** /p1kslm/GetQurentG*** /p1kslm/GetQurentG***	10.196.156.154 10.196.156.154 10.196.156.154 10.196.156.154 10.196.156.154 10.196.156.154	Portnumber 6 6 6 6 6 6 6	Referer           8551         http://10.197.206.11           3544         http://10.197.206.11           3544         http://10.197.206.11           3545         http://10.197.206.11           3547         http://10.197.206.11	Request data siz***           37.***           37.***           37.***           37.***           37.***           37.***	Query 737 - 723 - 893 1581506068533.0. 896 1581506068533.0.	5132-
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Loc dota           Service02 - All Web Acce           Papenos time           2020/02/12 2014 28 160           2020/02/12 2014 28 160           2020/02/12 2014 28 160           2020/02/12 2014 28 160           2020/02/12 2014 28 160           2020/02/12 2014 28 160           2020/02/12 2014 28 160           2020/02/12 2014 28 161           2020/02/12 2014 28 161           2020/02/12 2014 28 161           2020/02/12 2014 28 161           2020/02/12 2014 28 164	Banking           603         22           823         32           821         47           78         78           78         59	200 200 200 200 200 200 200 200	Perponen dela e™ Pequent time 20 2000/07/2 20 44 20 2000/07/2 20 44 20 20 20 2000/07/2 20 44 20 84 20 20 2000/07/2 20 44 20 20 20 2000/07/2 20 40 20 20 2000/07/2 20 40 20 20 2000/07/2 20 44 20 20 20 2000/07/2 20 44 20 20 2000/07/2 20 44 20 20 2000/07/2 20 44 20 20 2000/07/2 20 44 20 20 2000/07/2 20 40 20 20 2000/07/2	Path //p 1kalm/QatPer formar- /p 1kalm/QatPer formar- /p 1kalm/QatOcorrentO- /p 1kalm/QatOcorrentO- /p 1kalm/QatOcorrentO- /p 1kalm/QatOcorrentO- /p 1kalm/QatOcorrentO- /p 1kalm/QatOcorrentO- /p 1kalm/QatOcorrentO- /p 1kalm/QatOcorrentO-	10.196.155.154 10.196.155.154 10.196.155.154 10.196.155.154 10.196.155.154 10.196.155.154 10.196.155.154 10.196.155.154 10.196.155.154	Port number 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	Referer           8551         http://10.197.206.11           8544         http://10.197.206.11           8544         http://10.197.206.11           8545         http://10.197.206.11           8551         http://10.197.206.11           8551         http://10.197.206.11           8551         http://10.197.206.11           8551         http://10.197.206.11           8547         http://10.197.206.11           8547         http://10.197.206.11	Request data size           37         -           37         -           37         -           37         -           37         -           37         -           37         -           37         -           37         -           37         -           37         -           37         -           37         -           37         -	Owery           737         -           728         -           898         158 1500068533.0.           898         158 1500068538.0.           723         -           723         -           737         -           737         -           898         158 150007 1525.0.	6733- 0122- 0503- 3622-

No.	Item	Description
1	Logging range (solid lines)	The range of access logs actually being displayed in the Access log area.
2	Logging range (dotted lines)	The range of access logs targeted for display in the Access log area.

The dotted lines are shown when the display interval in the **Performance chart** tab is 30 minutes or longer. You can change the logging range of the access logs by clicking and dragging the performance chart.

Figure 10-3: Changing the logging range in the Access log area



#### Interval of the logging range (dotted lines)

The logging range indicated by the dotted lines in the **Access log** area changes depending on the display interval of the performance chart.

No	Display interval in the Performance chart tab	Display interval in the Access log area	Logging range displayed between the dotted lines
	1 1 minute	1 minute	The range of access logs shown in the <b>Performance chart</b> tab
	2 10 minutes	10 minutes	when you click the <b>Display</b> button.

No.	Display interval in the Performance chart tab	Display interval in the Access log area	Logging range displayed between the dotted lines
3	30 minutes	10 minutes	The range of access logs indicated by the dotted lines in the
4	1 hour	10 minutes	<b>Performance chart</b> tab when you click the <b>Display</b> button.
5	6 hours	10 minutes	
6	1 day	10 minutes	

#### Number of access logs displayed

A maximum of 5,000 access logs can be displayed in the **Access log** area. If the number of access logs in the logging range indicated by dotted lines exceeds this maximum, an error message is shown and only the maximum number of access logs are displayed, ordered by response time.

#### Sorting access logs

When a column header on the **Log data** tab is clicked, the access logs are sorted according to the item corresponding to that column header. Note that the sorting behavior changes if you click the column header while pressing the **Ctrl** key on the keyboard. For details, see the table below.

column\_header

Log data	Ranking	
Service01 - All Web	Access	
Response time	2 A Response (in ms) 1	▼ Status code

Column status	Sorting behavior
Not sorted	You can use the following two methods to sort the access logs:
	Click the column header corresponding to the item by which access logs are to be sorted.
	Access logs are sorted by the applicable item in ascending order.
	If sorting by another item was already applied, that sorting is cleared.
	Click on the column header corresponding to the item by which access logs are to be sorted while pressing the Ctrl key on the keyboard.
	Access logs are sorted by the applicable item in ascending order.
	If sorting by another item was already applied, the access logs will be sorted by both the previously selected item and the newly selected item.
Sorted	You can use the following two methods to sort the access logs:
	Click the column header corresponding to the item by which access logs are to be sorted.
	Access logs are sorted by the applicable item in reverse order.
	However, if sorting by another item was already applied, that sorting is cleared and the access logs are sorted by the newly selected item in reverse order.
	Click on the column header corresponding to the item by which access logs are to be sorted while pressing the Ctrl key on the keyboard.
	Access logs are sorted by the applicable item in reverse order.

#### (3) Supplemental notes

• To record access logs, you must set the folder where the logs are to be recorded as a property in SLM - UR's system definition file (jplitslmur.properties).

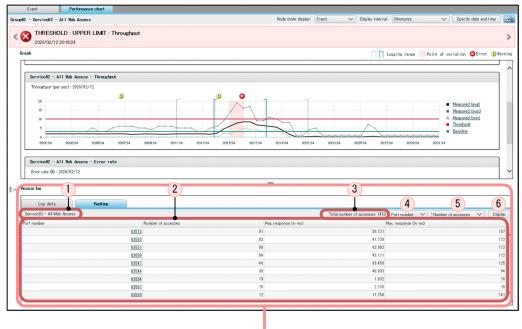
For details, see 5.6 Editing the system definition files to change settings.

- The following actions re-initialize the Access log area so that no access logs are displayed:
  - Displaying a different service or transaction in the Services area

- Displaying the Troubleshoot window by clicking the **Details** column in the **Event** tab
- Displaying the Troubleshoot window by clicking the Troubleshoot button in the Real-time Monitor window
- The access logs are retained for a period of 194 hours (8 days x 24 hours + 2 hours in output). Access logs that exceed this maximum display period are deleted.

### 10.4.6 Access log area (Ranking tab selected)

#### (1) Window configuration



Access log area

### (2) Window description

This window displays a ranked list of access logs from the **Log data** tab, in which access logs that match the display items are ranked according to their average response or number of accesses.

No.	Item	Description
1	X - All Web Access	This area displays the name of the service group whose performance charts are to be viewed.
		X is the name of the service group.
2	Ranking list	This area displays a tabular list of items that are ranked according to the selected display item and type.
		The first column from the left shows the value of the selected display item.
3	Total number of accesses	This area shows the total number of accesses being displayed.
4	Display item drop-down list	The display items that can be used as targets for ranking are displayed in a drop-down list. The following display items can be used as targets for ranking:
		• Path
		• IP address
		Port number
		Status code

No.	Item	Description
5	<b>Type</b> drop-down list	<ul> <li>Ranking categories are displayed in a drop-down list. The following ranking categories can be selected:</li> <li>Avg. response</li> <li>Number of accesses</li> </ul>
6	Display button	Click this button to display a list of items ranked according to the selected display item and type.

#### Drilling down in the ranking

The access logs displayed in the **Log data** tab are filtered by the values of the display items that were clicked in the **Ranking** tab.

These filter conditions are stored in a drilldown history that can be browsed in the **Confirmation of the display of the access log** window.

The filter conditions specified in the **Ranking** tab are cleared when either the **Display** button or the **Display Settings** button in the **Log data** tab is clicked.

#### 10.4.7 Select items to be displayed window

#### (1) Window configuration

Sele	ect items to be displayed
✓ ✓	<b>sponse</b> Response time Response (in ms) Status code Response data size (in bytes)
	quest Request time Path IP address Port number Referer Request data size (in bytes) Query Cookie
	Apply Cancel

#### (2) Window description

This window is used to select items to be displayed in the Log data tab in the Access log area.

No.	Item to display	Details about the item to display
1	Response	<ul> <li>This area is used to set the response data display items in the Log data tab in the Access log area.</li> <li>The items that can be set are as follows.</li> <li>Response time</li> <li>Response (in ms)</li> <li>Status code</li> <li>Response data size (in bytes)</li> </ul>
		To set an item for display, select its check box. If an item's check box is not selected, it will not be displayed.
2	Request	This area is used to set the request data display items in the <b>Log data</b> tab in the <b>Access log</b> area. The items that can be set are as follows.

No.	Item to display	Details about the item to display
2	Request	<ul> <li>Request time</li> <li>Path</li> <li>IP address</li> <li>Port number</li> <li>Referer</li> <li>Request data size (in bytes)</li> <li>Query</li> <li>Cookie</li> <li>To set an item for display, select its check box. If an item's check box is not selected, it will not be displayed.</li> </ul>
3	Apply button	Click this button to apply these settings to the display items in the <b>Log data</b> tab in the <b>Access log</b> area. When you click the <b>Apply</b> button the view returns to the <b>Log data</b> tab in the <b>Access log</b> area.
4	Cancel button	Click this button to return to the <b>Log data</b> tab in the <b>Access log</b> area without saving the settings.

#### (3) Supplemental notes

• At least one display item must be selected.

#### 10.4.8 Confirmation of the display of the access log window

### (1) Window configuration

ess k	ogs	that satisfy the specified f	ilter conditions are displayed.	
201	3/09	9/10 12:49:44 - 2013/09/10	1259:44	
lter o	ono	dition settings	Reset cond	itions
Resp	ons	e		
✓ R	espo	inse time	2013/09/10 🗰 12 🔹 : 49 🔹 : 44 🔹 Range : 10minutes 💌	
✓ Re	espo	inse (in ms)	<=   ▼ 0	
✔ St	atus	s code		
R	espo	inse data size (in bytes)		
Requ	est			
✔ Re	eque	est time	2013/09/10 🗰 12 🔹 : 39 🔹 : 44 🔹 Range : 20minutes 💌	
Pa	ath			
IP	add	ress		
✓ Po	ort n	umber		
R	efere	er		
✔ Re	eque	est data size (in bytes)		
Q.	lery			
G	ooki	e		
istory	of	filter conditions applie	ed in the Ranking window	(91.9
$\checkmark$	2	Displayed item	Value	012
~	1	Port number	2394	-
~	2	Status code	200	-
~	3	Path	/jp1its1m/GetCautionService;jsessionid=a386de33-78d1-47f3-9418-f4cc1d709ffe	

### (2) Window description

This window is for setting the filter conditions for the **Log data** tab. It is used to both view the drilldown history specified in the **Ranking** tab and to set the filter conditions for the **Log data** tab.

No.	Setting item	Conditions that can be set					
1	Reset conditions button	Click this button to return the filter condition settings to their initial state (when the <b>Confirmation</b> of the display of the access log window was displayed).					
2	Filter condition settings	This area is used to select the conditions to be use to filter the access logs, and to set the values for the conditions. For details, see <b>Details about filter condition settings</b> .					
3	History of filter conditions applied in the Ranking window	The history of filter conditions applied in the Ranking window is displayed and configured as a condition for sorting the access log. For details, see <b>Details about the history of filter conditions applied in the Ranking window</b> .					
4	OK button	Click this button to filter the access logs displayed in the <b>Log data</b> tab in the <b>Access log</b> area by the specified filter conditions. When you click the <b>OK</b> button it returns the view to the <b>Log data</b> tab in the <b>Access log</b> area.					
5	Cancel button	Click this button to return to the <b>Log data</b> tab in the <b>Access log</b> area without saving the settings.					

#### Details about filter condition settings

Each item whose check box is selected under **Filter condition settings** is set as a filter condition on the access logs displayed in the **Log data** tab of the **Access log** area. The unselected items are not set as filter conditions. The values that can be specified for filter conditions are indicated in the following table:

No.	Setting item	Conditions that can be set	
1	Response time	Specify a response time range. The permissible values fall within the range of the dotted lines (the display range of the access logs).	
2	Response (in ms)	Specify an operator and a response time (in milliseconds). The permissible values are shown below.	
		Operators that can be selected	
		>: Greater than the specified value	
		>=: Greater than or equal to the specified value	
		==: Equal to the specified value	
		<=: Less than or equal to the specified value	
		<: Less than the specified value	
		! =: Not equal to the specified value	
		Permissible values	
		0 to 600000	
3	Status code	This item displays the access logs that match the specified regular expression. The permissible values are shown below.	
		Number of characters that can be entered	
e		0 to 40 characters	
		Input restrictions	
		-It must conform to Java regular expressions. The regular expression syntax is described in the API specification of the java.util.regex.Pattern class in Java Platform Standard Edition 6.	
		-Non-ASCII characters cannot be used.	
		-Double-byte characters cannot be used.	
		-URL encoded characters in UTF-8 can be used.	
		If this field is left blank, all status codes are displayed.	
4	Response data size (in bytes)	Specify an operator and a response data size (in bytes). The permissible values are shown below.	
		Operators that can be selected	
		See item number 2 for details.	

No.	Setting item	Conditions that can be set				
4	Response data size (in bytes)	Permissible values 0 to 2147483647				
5	Request time	Specify a request time range. Permissible values range from the start time of the dotted lines (the display range of the access logs) minus ten minutes.				
6	Path	This item displays the access logs that match the specified regular expression. The permissible values are shown below. Number of characters that can be entered 0 to 255 characters Input restrictions See item number 3 for details. If this field is left blank, all paths are displayed.				
7	IP address	<ul> <li>Specify a regular expression for IP addresses. The permissible values are shown below.</li> <li>Number of characters that can be entered <ul> <li>0 to 40 characters</li> </ul> </li> <li>Input restrictions <ul> <li>See item number 3 for details.</li> </ul> </li> <li>If this field is left blank, all IP addresses will be displayed.</li> </ul>				
8	Port number	<ul> <li>This item displays the access logs that match the specified regular expression. The permissible values are shown below.</li> <li>Number of characters that can be entered <ul> <li>0 to 40 characters</li> </ul> </li> <li>Input restrictions <ul> <li>See item number 3 for details.</li> </ul> </li> <li>If this field is left blank, all port numbers will be displayed.</li> </ul>				
9	Referer	This item displays the access logs that match the specified regular expression. The permissible values are shown below. Number of characters that can be entered 0 to 255 characters Input restrictions See item number 3 for details. If this field is left blank, all referrers will be selected.				
10	Request data size (in bytes)	Specify an operator and a request data size (in bytes). The permissible values are shown below. <b>Operators that can be selected</b> See item number 2 for details. <b>Permissible values</b> 0 to 2147483647				
11	Query	Enter a query condition. Click the text box to bring up the Edit query window, where a key and the corresponding value can be entered. If you define multiple query conditions in the Edit query window, they will be displayed in no particular order, separated by spaces. For details about the Edit query window, see 10.6.10 Edit query window.				
12	Cookie	Enter a cookie condition. Click the text box to bring up the Edit cookie window, where a key and the corresponding value can be entered. If you define multiple cookie conditions in the Edit cookie window, they will be displayed in no particular order, separated by spaces.				

No.	Setting item	Conditions that can be set	
12	12     Cookie     For details on the Edit cookie window, see 10.6.9 Edit cookie window.		

#### Details about the history of filter conditions applied in the Ranking window

This area of the window displays the drilldown history specified in the **Ranking** tab in the **Access log** area. If there is no drilldown history, then nothing is displayed.

No.	Displayed item	Data that is displayed	
1	Total number of accesses	This area displays the number of access logs.	
		Showing (nnnn)	
		The number of access logs that are displayed in the Log data tab	
		Total (mmmm)	
		The number of access logs in the range displayed between the solid lines in the <b>Performance chart</b> tab	
		Display format	
		nnnn / mmmm	
2	Check boxes	When a drilldown history checkbox is selected, that item is set as a filter condition on the access logs displayed in the <b>Log data</b> tab in the <b>Access log</b> area. Similarly, if the checkbox is not selected, then the filter condition is not set.	
3	#	The number in the drilldown history.	
4	Displayed item	The item to be used as a filter condition.	
5	Value	The value to use in the filter condition.	

#### (3) Supplemental notes

• As shown below, the display items that are specified by filter conditions in the **Confirmation of the display of the access log** window are shown in bold in the **Log data** tab in the **Access log** area. Similarly, in the **Ranking** tab, if filter conditions are specified, those headers are shown in bold.

[							
Log data	Ranking						
Service01 - All Web Access					2020/02/10 12:12:05	- 2020	/02/10 1:
Response time	Response (in ms)		Status code		Response data size (in bytes)		Path
2020/02/10 12:12:05.669		94		200		292	∕jp1 itslm
2020/02/10 12:12:00:003				200		202	/jp1 itslm
2020/02/10 12:12:05.669		94		200		202	, price in

- Filter conditions can also be set for items that are not shown in the **Log data** tab in the **Access log** area (items not selected in the Select items to be displayed window).
- Once the filter conditions are set by clicking the **OK** button in the drilldown history table, the items in the drilldown history whose check box were not selected will be deleted.

#### 10.5 Report window and the windows displayed from the Report window

#### 10.5.1 Configuration of the Report window

#### (1) Window configuration

Home	Real-time Monitor 👜 Troubleshoot 🗉 Report	🎇 Settings
vices	Report	
	Service group Service	
Show all	Report start date 2020/01/01 🗮 Report interval Imonth 🗸	
Group01	Select template	
+ Service01	Template name Remarks	
+ Service02		
+ Service03		
Group02		
+ Service04		
+ Service05		
Group 03		
+ Service06		
Group 84		
+ Service07		
		Add Edit Copy Deli
		Preview report CSV ou

#### (2) Window description

The Report window is used to create reports for periodic reporting of monitoring results. Information can be displayed on the screen and output to a CSV file.

The Report window is composed of the following areas:

- Services area
- Report area

#### (3) Supplemental notes

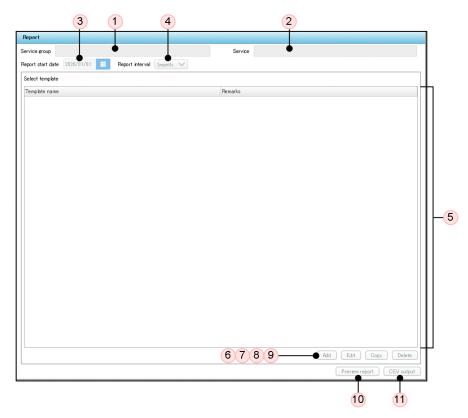
- If a monitored target of a monitored service being displayed in the Report window has been deleted by another service group administrator, at attempt to output the report data will result in an empty CSV file.
- If an error occurs during downloading of report output, delete the CSV output file manually due to the possibility of incomplete data.

#### 10.5.2 Services area

This area is common to all the SLM windows. For details about the Services area window, see (3) Services area.

#### 10.5.3 Report area

### (1) Window configuration



### (2) Window description

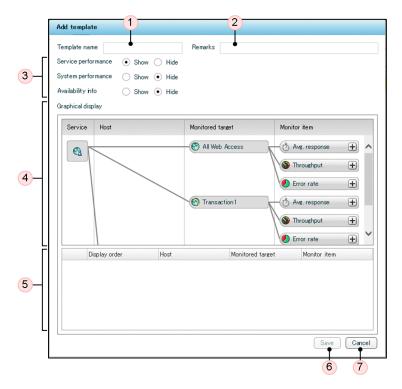
No.	Item	Description
1	Service group	This box displays the name of the selected service group.
2	Service	This box displays the name of the selected monitored service.
3	Report start date	Use this box to specify the start date for the report. A specific date must be set for the report start date. The default is the first day of the current month, as determined from the system date.
4	Report interval pull-down menu	Use this pull-down menu to select the interval (timeframe) to be covered by the report. The following values can be selected (the default is 1 month): <ul> <li>1 day</li> <li>1 week</li> <li>1 month</li> <li>3 months</li> </ul>
5	Select template	When you have selected a monitored service or monitored target, this area displays a list of templates that have been registered. You can select a template from the list if there is one available that you want to edit, copy, or delete, or one whose report you want to review and output to a CSV file.
6	Add button	Click this button to create a new template. Clicking the <b>Add</b> button opens the Add template window where you can create a template.

No.	Item	Description
7	Edit button	Click this button to edit an existing template. First, select a template for editing, then click the <b>Edit</b> button to open the Edit template window where you can edit the selected template.
8	Copy button	Click this button to copy the settings from an existing template to create a new template. First, select a template for copying, then click the <b>Copy</b> button to open the Copy template window where a template whose settings have been copied from the existing template will be displayed.
9	Delete button	Click this button to deleted the selected existing template. Note that you cannot delete the Default template.
10	Preview report button	Click this button to preview the information that has been output by the selected template by displaying it on the screen. Clicking the <b>Preview report</b> button opens the Preview report window.
11	CSV output button	Click this button to output a report in CSV format using the settings of the selected template.

- Templates can be registered for each monitored service. A maximum of 32 templates can be registered for one monitored service.
- Nonexistent dates in the report interval are not aggregated into report tables, performance charts, or CSV files. For example, if the report start date is May 31, and the report interval is set to 1 month, the period from May 31 to June 30 is included in the report interval, but June 31 is not included. Or, in the case of a comparison to previous data, the period from May 1 to May 30 is counted as falling within the report interval, but April 31 is excluded.
- Because the retention period for SLM report data is five years, you cannot specify a report start date that is earlier than the same date five years previous, based on the system time on the host on which you are displaying the SLM windows.

# 10.5.4 Add template window

#### (1) Window configuration



# (2) Window description

No.	Item	Description
1	Template name	Enter in this box a name for the template that is to be created. A maximum of 64 characters can be entered. Do not enter any platform-dependent characters. This area is blank when you create a new template.
2	Remarks	Enter in this area a remark for the template you are creating. A maximum of 64 characters can be entered. This area is blank when you create a new template.
3	Display settings for performance and availability information	<ul> <li>Use this area to select whether the items listed below are to be displayed in the report:</li> <li>Service performance</li> <li>System performance</li> <li>Availability info</li> </ul>
		<pre>For each item you wish to display, select its Show radio button; for each item you do not want to display, select its Hide radio button. The defaults for the radio buttons depend on the value set for the dashboardPrioritizeSystem property in SLM - Manager's system definition file (jplitslm.properties):     true     Service performance: Hide     System performance: Show     Availability information: Hide</pre>

No.	Item	Description
3	Display settings for performance and availability information	• false Service performance: Show System performance: Hide Availability information: Hide
4	Selection of monitoring items to graph	Use this area to select the monitoring items you wish to graph. Click for each monitoring item you wish to display. This will add that monitoring item to the bottom of the selections list. To remove a monitoring item that is already selected, click for that monitoring item and it will be removed from the selections list. A maximum of 50 monitoring items can be selected, but no more than 10 can be graphed in the Preview report window.
5	Selections list	This area displays the list of monitoring items you have selected. To rearrange the order of the displayed items, drag the cicon (displayed on the very left) up or down. When you click a system performance monitoring item, the Monitor item details window is displayed, where you can see that monitoring item's name and key field information. The Preview report window can display graphs for up to 10 selected monitoring items, displayed in the order they are listed in this area (only the first 10 are displayed).
6	Save button	Clicking this button saves the template using the settings displayed on the screen. Click the <b>Save</b> button to save the template and return to the <b>Report</b> area.
7	Cancel button	Clicking this button returns to the <b>Report</b> area without saving the template settings.

#### 10.5.5 Edit template window

This window displays the same contents as the Add template window, except that **Template name**, **Remarks**, the display settings for performance and availability information, and the selection of monitoring items to graph have all been set to the values in the selected template. For details, see 10.5.4 Add template window.

Note that if you are editing the Default template, you cannot change the Template name and Remarks.

# 10.5.6 Copy template window

This window displays the same contents as the Add template window, except that the **Template name** and **Remarks** fields are blank, and the display settings for performance and availability information, and the selection of monitoring items to graph, are set to the values in the selected template. For details, see 10.5.4 Add template window.

# 10.5.7 Preview report window

# (1) Window configuration

Peport start date         2015/05/15         Peport interval         Imonth           Service performance         Monitor item (unit)         Average         SLO compliance ratio         V5 previous month           All Web Access         Average         SLO compliance ratio         V5 previous month           All Web Access         Average         401         100           All Web Access         Error rate 00         0         100           Transaction 1         Averagence (n ma)         -         -           Transaction 1         Averagence (n ma)         -         -           System performance         Host         Monitored target         Monitor item (unit)         Average         SLO compliance ratio         VS previous month           Host         Monitored target         Monitor item (unit)         Average         SLO compliance ratio         VS previous month           Host         Monitored target         CPU/Chrie name)=         SLO         100         VS previous month	Ince           Monitor item (unit)         Average         SLO compliance ratio         VS previous month           Average         796         100         592           Throughput (per sec)         401         100         692           Arer, response (in ms)         -         -         -           Throughput (per sec)         401         100         -02           Average         SLO compliance ratio         VS previous month           Throughput (per sec)         -         -         -           Throughput (per sec)         -         -         -         -           Throughput (face, sec)         -         -         -         -         -           Throughput (face, sec)         -	Service performance           Monitor item (unit)         Average         SL0 compliance ratio         VS previous month           All Web Access         Average         SL0         100         5           All Web Access         Throughput (per sec)         401         100         -           All Web Access         Throughput (per sec)         401         100         -         -           All Web Access         Throughput (per sec)         401         100         -         -         -           Transaction 1         Average         Store ratio         0         100         -         -           System performance         -         -         -         -         -         -           Host         Monitored target         Monitor item (unit)         Average         SL0 compliance ratio         VS previous month           Host 11         Apent01         CPUCDrive name)=cC> 00         5         100         -           Availability info         -         -         -         -         -           Service availability %         MTTR         MTBE         -         -	Service performance           Monkroor item (unit)         Average         SLO compliance ratio         VS previous month           All Web Access         Average         SLO compliance ratio         VS previous month           All Web Access         Throughput (per sec)         401         100         -           All Web Access         Error rate (0)         0         100         -         -           Transaction 1         Averages         SLO compliance ratio         VS previous month         -         -           System performance         -         -         -         -         -         -           Host         Monitored target         Monitor item (unit)         Average         SLO compliance ratio         VS previous month           Host         Monitored target         Monitor item (unit)         Average         SLO compliance ratio         VS previous month           Host 11         Agent01         OPL/CDrive name)=CO: 00         5         100         -           Availability info         -         -         -         -         -           Service availability overview         -         -         -         -         -           Service availability overview         -         -         -         -         -	Preview report								
Monitored target         Monitor item (unit)         Average         SLO compliance ratio         VS previous month           All Web Access         Arg. response (in ms)         786         100         100           All Web Access         Throughput (ker sec)         401         100         100           All Web Access         Throughput (ker sec)         401         100         100           All Web Access         Error rate 00         0         100         100           Transaction 1         Arg. response (in ma)         -         -         -           Transaction 1         Throught(sec.sen)         -         -         -         -           System performance         Host         Monitored target         Monitor item (unit)         Average         SLO compliance ratio         VS previous mo	Montor item (unit)         Average         SLO compliance ratio         VS previous month           Aver. response (in ma)         766         100         55           Throughput (per soc)         400         00         0           Generation         400         00         0           Aver. response (in ma)         -         -         -           Throughput (per soc)         400         00         00           Aver. response (in ma)         -         -         -           Throughput (per soc)         0         100         -00           Aver. response (in ma)         -         -         -           Throughput (per soc)         Montor item (unit)         Average         SLO compliance ratio         VS previous month           Agent01         OPU/Chrie name2=CC>00         5         100         VS previous month	Monitor et target     Monitor item (unit)     Average     SLO compliance ratio     VS previous month       All Web Access     Average one (nma)     786     100     5       All Web Access     Throughput (per sec)     401     100     6       All Web Access     Error rate 00     0     100     -       Transaction 1     Average     SLO compliance ratio     VS previous month       System performance     -     -     -       Host     Monitored target     Monitor item (unit)     Average     SLO compliance ratio     VS previous month       Host     Monitored target     Monitor item (unit)     Average     SLO compliance ratio     VS previous month       Host     Monitored target     Monitor item (unit)     Average     SLO compliance ratio     VS previous month       Host 10     Agent01     CPUCDrive name>=COO (0)     5     100     -       Avaibability info     -     -     -     -       Service avaibability overview     -     -     -     -	Monitored target         Monitor item (unit)         Average         SLO compliance ratio         VS previous month           All Web Access         Aver. response (mms)         786         100         5           All Web Access         Throughput (per sec)         4.01         100         -           All Web Access         Error rate 00         0         100         -         -           All Web Access         Error rate 00         0         100         -         -         -           All Web Access         Error rate 00         0         100         -         -         -         -           Transaction 1         Aver.response (mms)         - <t< th=""><th>Report start date 201</th><th>5/05/15</th><th>Report interval 1mor</th><th>nth</th><th>•</th><th></th><th></th><th></th><th></th></t<>	Report start date 201	5/05/15	Report interval 1mor	nth	•				
All Web Access Avg. response (in ms) 796 100 All Web Access Throutput (per sec) 401 100 All Web Access Error rate 00 0 1000 Transaction 1 Avg. response (in ms) Transaction 1 Throutput (nex sec) System performance Host Monitored target Monitor item (unit) Average SLO compliance ratio VS previous mo	Ave: response (in ma)         736         100         59           Throughput (per sec)         401         100         0           Ave: response (in ma)         0         100         -0           Ave: response (in ma)         -         -         -           Throughput (fee: sec)         0         100         -0           Ave: response (in ma)         -         -         -           Throughput (fee: sec)         -         -         -           Throughput (fee: sec)         -         -         -           Stop         CPU/Cbrie name)=         5         100         VS previous month           y/K         MTTR         MTBF         -         -	All Web Access         Ave: response (n ms)         796         100         5           All Web Access         Throughput (per sec)         401         100         -	All Web Access         Aver response (n mg)         796         100         5           All Web Access         Throughout (per sec)         401         100         -	Service performance								
All Web Access Throutput (per sec) 401 100 All Web Access Error rate 60 0 0 100 Transaction 1 Aire, response (in ma) Transaction 1 Throutput (ner sec) - System performance Host Monitored target Monitor item (unit) Average SLO compliance ratio VS previous mo	Throughput (per sec)         401         100         0         0           Error rate 00         0         100         -0         -0         -0           Aver, response (nm)         -         -         -         -0         -0           Throwshow (new sec)         -         -         -         -0         -0         -0           Sce         Monitored tareet         Monitoritem funit)         Average         SLO compliance ratio         VS previous month           Agent 01         OPUCDrive name5=CC> 00         5         100         100         100	All Web Access Throughput foer sec) 401 100 All Web Access Error rate (00 0 0 Transaction 1 Are, response (n may) Transaction 1 There unbrut free reach System performance Host Monitored tareet Monitor item (unit) Average SLO compliance ratio VS previous month Host 1 Access 100 VS previous month Host 1 Access 100 VS previous month Host 1 Access 100 VS previous month Service availability with MTIR MITEF Service availability overview Date and Time Event	All Web Access         Throuthput (per sec)         401         100           All Web Access         Error rate (00         0         100         -           Transaction 1         Are regores (m may)         -         -         -           Transaction 1         Are regores (m may)         -         -         -           System performance         Hontor item (unit)         Average         SLO compliance ratio         VS previous month           Hot         Monitored target         Monitor item (unit)         Average         SLO compliance ratio         VS previous month           Hot1         Agent01         OPU/CDrive name)=CC> 00         5         100         -           Arabbility info         Service avaibability 5         100.0         -         -         -           Service avaibability overview         Deat and Time         Event         2015/05/15 00 00         Service Monitoring Started	Monitored target	Monitor item (uni	t) Average		SLO	O complia	nce ratio	VS prev	vious month
All Web Access Error rate (%) 0 0 100 Transaction 1 Ave, response (n ms) Transaction 1 Transaction 1 Transaction 1 System performance System performance Host Monitored target Monitor item (unit) Average SLO compliance ratio VS previous mo	Error rate 00     0     100        Aver. response (n ms)     -     -     -       Threaders of target     Monitor item (unit)     Average     SLO compliance ratio     VS previous month       Agent01     OPU/Chrie name)=cCO 00     5     100     100	All Web Access Error rate 00 0 0 00 0 0 00 - Transaction 1 Are, response (n ma) - Transaction 1 Are, response (n ma) - System performance Host Monitored target Monitor item (unit) Average SLO compliance ratio VS previous month Host 11 Agent01 OPU/Drive name)=CO: 00 5 100 VS previous month Host 10 OPU/Drive name)=CO: 00 5 100 Araiability info Service analability % MTTR MTBF Service analability overview Date and Time Event	All Web Access         Error rate 00         0         100         -           Transaction 1         Are: regions (in mit)         -         -         -         -           Transaction 1         Are: regions (in mit)         -         -         -         -         -           Transaction 1         Are: regions (in mit)         -         -         -         -         -         -           System performance         -<	All Web Access	Avg. response (in	ms)		796		100		
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# (2) Window description

No.	Item	Description
1	Report start date	This box displays the report start date that was set in the <b>Report</b> area.
2	Report interval	This box displays the report interval that was set in the <b>Report</b> area.
3	Comprehensive evaluations	This area displays aggregated performance information on the monitored services over the interval set in the <b>Report</b> area.
4	Performance charts	This area displays performance charts for the monitored services over the interval set in the <b>Report</b> area.
		Performance charts for the monitoring items selected under <b>Graphical display</b> in the template are stacked vertically.
		A maximum of 50 monitoring items can be selected under <b>Graphical display</b> in the template, but no more than 10 charts can be displayed. <sup>#</sup>
5	CSV output button	Clicking this button outputs all the performance chart data to a single CSV file. Note that the comprehensive evaluation information is not output to the CSV file.
		When you click the <b>CSV output</b> button, the Preview report window closes and the Report window is displayed.
6	Close button	Clicking this button closes the Preview report window without displaying the report and returns to the <b>Report</b> area.

#

Performance charts are displayed for the monitoring items selected in the Edit template window whose display order is 1 through 10. Performance charts for monitoring items whose display order is 11 or higher are not displayed, but they are output to the CSV file.

#### 10.6 Settings window and windows displayed from the Settings window

#### 10.6.1 Configuration of the Settings window

#### (1) Window configuration

	Home	Real-time Monitor	Troubleshoot	EI Report	💥 Setti
Setting	menu				
Add/Delet					
	e monitor action setting				
	ion information setting	13			
Monitor se					
Start/Stop					
Services					
		2			
	Show all				
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Setting menu area

# (2) Window description

The Settings window is used to add or delete monitored services, to set monitoring items, and to start and stop monitoring.

The Settings window is composed of the following areas:

- Setting menu area
- Services area

In addition, depending on the item selected in the Setting menu area, one of the following areas will be displayed:

- Add/Delete monitor area
- Web transaction setting area
- Configuration information settings area
- Monitor settings area
- Start/Stop monitor area

When you select Add/Delete monitor or Start/Stop monitor in the Setting menu area, the Services area is grayed out and cannot be used.

#### 10.6.2 Services area

This display is common to all the SLM windows. For details about the Services area window, see (3) Services area.

## 10.6.3 Setting menu area

## (1) Window configuration

1
7

# (2) Window description

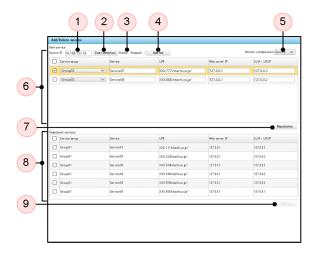
When you select an item, the area of the same name is displayed on the right side of the Setting menu area.

The following areas can be displayed from the Setting menu area:

- Add/Delete monitor area
- Web transaction setting area
- Configuration information settings area
- Monitor settings area
- Start/Stop monitor area

#### 10.6.4 Add/Delete monitor area

#### (1) Window configuration



JP1/Service Level Management Description

# (2) Window description

No.	Item	Description
1	Source IP	Specifies the IP address of the source. When you launch URI detection for monitored services, only sources that match this IP address are detected. By default, this area displays the IP address of the machine you are currently working on (the machine on which you launched the browser to access SLM). If the system is configured to convert IP addresses through a device such as a router or load balancer, you must change this IP address to the converted IP address. An IP address is entered in the format <i>XXX</i> . <i>XXX</i> . <i>XXX</i> . <i>XXX</i> ( <i>XXX</i> : 0 to 255).
2	Start detection button or Stop detection button	<ul> <li>Start detection button Clicking this button starts URI detection. This button is displayed while the status is Stopped and when the Add/Delete monitor area is being displayed. Once you click this button to start detection, it changes into the Stop detection button.</li> <li>Stop detection button Clicking this button stops URI detection. This button is displayed while the status is Detecting. Once you click it to stop detection, it changes into the Start detection button.</li> </ul>
3	Status	<ul> <li>This field indicates whether monitored services are being detected. One of the following is displayed:</li> <li>Detecting: Monitored services are being detected.</li> <li>Stopped: Monitored services are not being detected.</li> </ul>
4	Add line button	Clicking this button adds a blank line so that you can enter a URI directly.
5	Monitor configuration pull-down menu	<ul> <li>When SLM is linked to Performance Management, select one of the following monitoring configurations for the service to be registered:</li> <li>Service</li> <li>System</li> <li>This field is displayed when SLM is linked to Performance Management.</li> <li>The default depends on the value set for the dashboardPrioritizeSystem property in SLM - Manager's system definition file (jplitslm.properties):</li> <li>true: System is the default.</li> <li>false: Service is the default.</li> </ul>
6	New service	<ul> <li>This area displays the monitored services for which a URI has been detected. Select a service group and enter the name of a monitored service.</li> <li>Check boxes</li> <li>Select the check boxes for the monitored services that are to be registered. If you select the check box in the header, the check boxes in all rows become selected. Similarly, if you clear the check box in the header, the check boxes in all the rows are cleared.</li> <li>Service group</li> <li>Select the service group to which each monitored service belongs. The pull-down menu contains the names of the service groups that the logged-in user is responsible for monitoring (the resource group names registered in JP1/Base).</li> <li>Service</li> <li>Enter a name for each monitored service. A monitored service's URI is displayed by default.</li> <li>You can enter between 1 and 64 characters. Do not use ", , , ',  space, tab, platform-dependent characters, or control characters.</li> <li>We recommend that you not begin the name with a hyphen (-) so that it is not confused with a command option.</li> <li>URI<sup>#</sup></li> <li>This column displays each monitored service's URI.</li> </ul>

No.	Item	Description
6	New service	<ul> <li>You can enter between 1 and 255 characters. You cannot enter space, ", #, &lt;, &gt;, ?, [,  ], ^, `, {, ], }, or non-ASCII characters. The notation must conform to RFC 3986. Enter a URI to which the user has full access.</li> <li>An entry can be made in this field when SLM is linked to Performance Management and Service is selected in Monitor configuration.</li> <li>Web server IP This column displays the IP address of the Web server that is executing each monitored service. An entry can be made in this field when SLM is linked to Performance Management and Service is selected in Monitor configuration. </li> <li>SLM - UR IP This column displays the IP address of the SLM - UR that is performing detection of each monitored service. An entry can be made in this field when SLM is linked to Performance Management and Service is selected in Monitor configuration. SLM - UR IP This column displays the IP address of the SLM - UR that is performing detection of each monitored service. An entry can be made in this field when SLM is linked to Performance Management and Service is selected in Monitor configuration. Detection of each monitored service. An entry can be made in this field when SLM is linked to Performance Management and Service is selected in Monitor configuration.</li></ul>
7	Registration button	IP addresses are entered using the format XXX.XXX.XXX.XXX (XXX: 0 to 255).         Clicking this button registers the monitored services whose check boxes are selected in the new services area. Monitored services that have been successfully registered are displayed under Registered services.
8	Registered services	<ul> <li>This area displays a list of the monitored services that have been registered.</li> <li>Check boxes</li> <li>Select monitored services to be deleted. If you select the check box in the header, the check boxes in all rows become selected. Similarly, if you clear the check box in the header, the check boxes in all rows are cleared.</li> <li>A check box that has been selected is cleared if you click the Start detection button, Stop detection button, or Registration button.</li> <li>Service group This column displays the name of the service group to which each monitored service belongs. Service This column displays the name of each monitored service. URI This column displays the URI of each monitored service. The URI is displayed when SLM is linked to Performance Management and the monitories are formation for the monitored service is formation.</li></ul>
		<ul> <li>monitoring configuration for the monitored service is Service. If the monitoring configuration for the monitored service is System, – is displayed.</li> <li>Web server IP This column displays the IP address of the Web server that is executing each monitored service. The IP address of the Web server is displayed when SLM is linked to Performance Management and the monitoring configuration for the monitored service is System, – is displayed. SLM - UR IP This column displays the IP address of the SLM - UR that is performing the detection of each monitored service. The IP address of the SLM - UR is displayed when SLM is linked to Performance Management and the monitoring configuration for the service is System, – is displayed. SLM - UR IP This column displays the IP address of the SLM - UR that is performing the detection of each monitored service. The IP address of the SLM - UR is displayed when SLM is linked to Performance Management and the monitoring configuration for the monitored service is Service. If the monitored service.</li></ul>
9	Delete button	Clicking this button deletes the monitored services whose check boxes have been selected in the <b>Registered services</b> area.

#: Make sure that each URI ends with a slash (/). However, if a URI does not end with a slash immediately after it was detected and you do not edit it, you can still register it as a monitored service if all the URI paths are monitored targets. A URI is specified in the following format:

JP1/Service Level Management Description

#### authority path

• authority

This part must be a host name or a port number. A host name must consist of 1 to 255 characters. If it exceeds 255 characters, only the first 255 characters are used. A port number must be an integer between 0 and 65535. If no port number is specified, all ports are targeted.

• path

A path must consist of 1 to 255 characters. If it exceeds 255 characters, only the first 255 characters are used. URLencoded characters in UTF-8 can be used.

# (3) Supplemental notes

#### Detecting a monitored service

- If you click the **Start detection** button after monitoring of monitored services has started, an error message is displayed and detection of monitored services is not initiated.
- Once you click the **Start detection** button, all areas outside the **Add/Delete monitor** area cannot be used until after you click the **Stop detection** button.
- Once you click the **Start detection** button, you cannot click the **Registration** or **Delete** button until after you click the **Stop detection** button.
- In the event of a failure or termination in some part of SLM UR processing after you start detection of services by clicking the Start detection button, detection of services by SLM UR will nevertheless continue if possible. However, if SLM UR is unavailable, detection will fail and remain in Stopped status. Similarly, when you stop detection of services by clicking the Stop detection button, a failure somewhere in SLM UR will result in an error message but stop processing will continue.
- If you exit the browser or log out by pressing the F5 key on the keyboard while Status shows Detecting, detection will stop after a two-minute timeout. Even if you log in again during this two minutes, it will not be possible to detect monitored services until the timeout is completed.

#### Registering a monitored service

- Multiple service names can be registered under the same URI. Even though they share the same URI, the services will be treated as separate services.
- All monitored services in the same service group must have unique service names. An error message will be displayed if you try to register under a service group a monitored service that has a name that has already been used in that service group. Monitored services with the same service name can be registered under different service groups.
- If you register multiple monitored services at the same time, the registration process proceeds in order from the top of the list. If registration of a monitored service fails during registration processing of the list, the monitored service before the one that fails will be registered, but registration stops with the failed monitored service and the subsequent monitored services are not registered.
- If you attempt to register a monitored service that has been deleted from another browser, an error message will be displayed.
- If multiple users are logged into SLM Manager, and a service group administrator registers a monitored target, the timing for reflecting the change on the other users' screens is described in (1) Timing of updating the number of registered monitored targets.
- If the IP address of a monitored service's Web server changes (such as after a server migration, for example), it will need to be re-registered as a new service.

#### Deleting a monitored service

<sup>10.</sup> SLM Windows

JP1/Service Level Management Description

- If you attempt to delete a monitored service that has been deleted from another browser, an error message will be displayed.
- If multiple users are logged into SLM Manager, and a service group administrator deletes a monitored target, the timing for reflecting the change on the other users' screens is described in (1) Timing of updating the number of registered monitored targets.
- If you attempt to delete a Web transaction belonging to a deleted monitored service, an error message will be displayed.
- If you attempt to delete a monitored service whose monitoring has not stopped, an error message will be displayed.
- If you delete multiple monitored services at the same time, the deletion process proceeds in order starting from the top of the list. If deletion of a monitored service fails during processing of the list, the monitored service before the one that fails will be deleted, but deletion stops with the failed monitored service and the subsequent monitored services are not deleted.
- When you delete a monitored service, some of its data will remain in the SLM Manager database. Especially after you have deleted a number of monitored services, we recommend that you execute the database cleanup command to delete data that is no longer needed so that unwanted data does not accumulate in the database.

For details about the cleanup command, see 9.8 jslmmgrdbcleanup (cleans up database) in 9. Commands.

• When you delete a monitored service, its access logs are not deleted.

#### URIs supported by SLM

- The URIs supported by SLM depend on the version of SLM. The SLM version-specific URI formats shown in the table below are based on the following URI notation:
  - scheme: / / authority path <?query><#fragment>

The following table shows the supported formats.

#### Table 10-4: Supported URI formats depending on the SLM version

No.	URI	Supported formats	
	element	09-50	09-51 and later
1	scheme	Only http is supported. https is not supported.	
2	authority	Only host names are supported. If a port number is specified, an error message will be displayed when monitoring of the monitored service begins. A host name must consist of 1 to 255 characters. If it exceeds 255 characters, only the first 255 characters are used.	Host names and port numbers are both supported. A host name must consist of 1 to 255 characters. If it exceeds 255 characters, only the first 255 characters are used. A port number must be an integer between 0 and 65535.
3	path	Not supported	The path format is supported. A path must consist of 1 to 255 characters. If it exceeds 255 characters, only the first 255 characters are used. URL-encoded characters in UTF-8 can be used.
4	query	Not supported	The query format is supported. URL-encoded characters in UTF-8 can be used.
5	fragment	Not supported	

Only an entry in the applicable supported format is considered a URI. If an unsupported format is specified, the entry will be ignored.

If your system configuration has SLM - Manager or SLM - UR in a mixture of version 09-50 and version 09-51 or later, only version 09-50 URIs are supported.

<sup>10.</sup> SLM Windows

• You cannot register a URI that specifies a loopback address, or a URI where localhost is specified as the host name. Service detection will run, but upon detection the URI will not be displayed as a new service in the Add/ Delete monitor area.

# 10.6.5 Web transaction setting area

#### (1) Window configuration

Group01 - Service01		A V V Nev	Edit
	Web access condition		
Web transaction	Path	Query	Cookie
▶ Transaction 1			
1	/example/1html	q=.* time=.*	session=.* exp=10
2	/example/2html	q=.*	session=.* exp=10
➡ Transaction3			
1	/example/1html	1=.* 2=.* 3=.* 4=.* 5=.* 6=.* 7=.* 8=.* 9	session=.* exp=10

# (2) Window description

The **Web transaction setting** area is used for such activities as editing, deleting, and adding Web transactions, as well as for viewing a list of Web transactions for a monitored service selected in the **Services** area.

The following table lists the items that are d	displayed:
--	------------

No.	Item	Description
1	Name of service group and monitored service	This area displays the name of the monitored service selected in the <b>Services</b> area and the name of its service group. The following format is used: <i>service-group-name – monitored-service-name</i>
2	Buttons for rearranging the order of transactions (	Use these buttons to rearrange the order of the displayed Web transactions. Select the row of the Web transaction that you want to move, and then move the row by clicking the applicable button. If the order of the selected row cannot be changed, the buttons will be deactivated.
3	New button	Clicking this button opens the Register Web transaction window that you use to register a new Web transaction. The button is deactivated once 10 Web transactions have been registered for a monitored service, or when the total number of instances of All Web Access and Web transactions combined registered into the SLM - Manager reaches 50.
4	Edit button	Clicking this button opens the Edit Web transaction window that you use to edit a registered Web transaction that has been selected. This button is activated when you select a Web transaction in the <b>Web transaction</b> and <b>Web access condition</b> area.

No.	Item	Description
5	Delete button	Clicking this button deletes a registered Web transaction that has been selected.
6	Web transaction and Web access condition	This area displays the registered Web transactions. When you click <b>b</b> to the left of a Web transaction name, it changes to <b>v</b> and the Web access conditions of the selected Web transaction are displayed under <b>Web access condition</b> . If there are multiple Web access conditions for the selected Web transaction, they are displayed on separate lines.
		You can drag the name of a Web transaction up and down to rearrange the order in which it is displayed. If you drag a Web transaction name into the header line, the Web transaction is moved to the bottom of the list.
		The following items are displayed under Web access condition:
		• Path
		This column displays the path condition of each Web access condition.
		• Query
		This column displays the query conditions of each Web access condition. If there are multiple query conditions for a Web access condition, they are displayed in no particular order and delimited by a space.
		• Cookie
		This column displays the cookie conditions of each registered Web transaction. If there are multiple cookie conditions for a Web access condition, they are displayed in no particular order and delimited by a space.

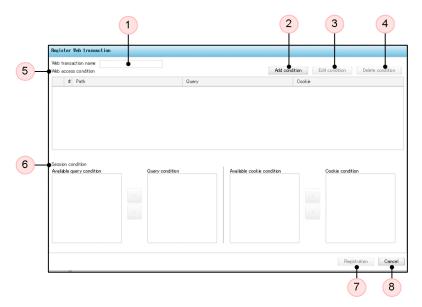
- To edit a Web transaction that has been set, select it for editing from the **Web transaction setting** area of the Settings window and then click the **Edit** button. The Edit Web transaction window will be displayed, and will show the settings for the selected Web transaction already filled in. You can edit the Web access conditions, the order of the Web access conditions, and the session conditions.
- If you attempt to delete a Web transaction that has already been deleted from another browser, an error message will be displayed.
- If you attempt to delete a Web transaction that belongs to a monitored service whose monitoring has not stopped, an error message will be displayed.
- When you delete a Web transaction, some of its data will remain in the SLM Manager database. Especially after you have deleted a number of Web transactions, we recommend that you execute the database cleanup command to delete data that is no longer needed so that unwanted data does not accumulate in the database.

For details about the cleanup command, see 9.8 jslmmgrdbcleanup (cleans up database) in 9. Commands.

• If multiple users are logged in to SLM - Manager, and a service group administrator registers or deletes a monitored target, the timing for reflecting the change on the other users' screens is described in (1) Timing of updating the number of registered monitored targets.

# 10.6.6 Register Web transaction window

#### (1) Window configuration



#### (2) Window description

The Register Web transaction window is used to specify a name for a Web transaction, adjust the priority of its Web access conditions, and set session conditions. In addition, you can add, edit, and delete Web access conditions.

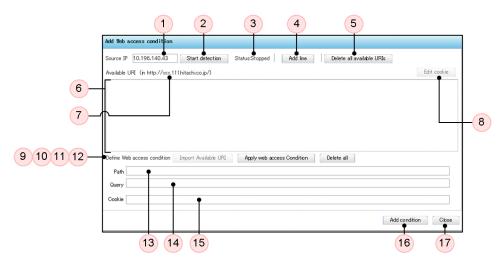
No.	Item	Description	
1	Web transaction name	<ul> <li>Enter in this box a name for a Web transaction that is to be registered. If you are editing a Web transaction that has already been registered, the name of the registered Web transaction is displayed here.</li> <li>A Web transaction name can consist of 1 to 64 characters. You can enter more than 64 characters, but we recommend that you keep within the 64-character limit to avoid errors. Do not use ", , , ',  space, tab, platform-dependent characters, and control characters.</li> </ul>	
2	Add condition button	Clicking this button displays the Add Web access condition window that you use to add a new Web access condition. However, once there are five Web access conditions, the button is deactivated because the maximum number of conditions has been reached.	
3	Edit condition button	Clicking this button displays the Edit Web access condition window that you use to edit the Web access condition selected in the <b>Web access condition</b> area. The Web access conditions are displayed in the <b>Define Web access condition</b> area of the Edit Web access condition window.	
4	Delete condition button	Clicking this button deletes the Web access condition selected in the <b>Web access condition</b> area.	
5	Web access condition	<ul> <li>When you wish to edit a registered Web transaction, this area displays the Web transaction's Web access conditions. In the case of a new registration, nothing is displayed. To rearrange the order of the displayed conditions, drag the  icon (displayed on the very left) up or down.</li> <li># This column displays a number indicating the order of each Web access condition.</li> <li>Path</li> </ul>	

No.	Item	Description	
5	Web access condition	<ul> <li>This column displays the path condition of each Web access condition.</li> <li>Query This column displays the query conditions of each Web access condition. If there are multiple query conditions for the same Web access condition, they are displayed in n particular order delimited by the space. </li> <li>Cookie This column displays the cookie conditions of each registered Web transaction. If the are multiple cookie conditions for the same Web access condition, they are displayed no particular order delimited by the space. </li> </ul>	
6	Session condition	<ul> <li>are multiple cookie conditions for the same Web access condition, they are displayed in no particular order delimited by the space.</li> <li>This area is for setting query conditions and cookie conditions for determining whether a We access is from the same user.</li> <li>Available query condition <ul> <li>This column displays the keys for the common queries from all the Web access condition displayed in Web access condition.</li> <li>Query condition <ul> <li>This column displays the query conditions.</li> </ul> </li> <li>Available cookie condition <ul> <li>This column displays the keys for the common cookies from all the Web access condition displayed in Web access condition.</li> </ul> </li> <li>Cookie condition <ul> <li>This column displays the keys for the common cookies from all the Web access condition displayed in Web access condition.</li> </ul> </li> <li>Cookie condition <ul> <li>This column displays the cookie conditions.</li> </ul> </li> <li>Cookie condition <ul> <li>This column displays the cookie conditions.</li> </ul> </li> <li>Cookie condition <ul> <li>This column displays the cookie conditions.</li> </ul> </li> <li>Cookie condition <ul> <li>This column displays the cookie conditions.</li> </ul> </li> <li>&gt; <ul> <li>This button moves items selected under Available query condition or Available cookie condition.</li> </ul> </li> <li>&lt; <ul> <li>This button moves items selected under Query condition or Cookie condition into Available query condition or Available cookie condition.</li> </ul> </li> </ul></li></ul>	
7	Registration button	Clicking this button applies the Web transaction settings in the Register Web transaction window to the <b>Web transaction setting</b> area and closes the Register Web transaction window. Monitoring of the registered Web transaction will begin the next time you start monitoring a monitored service, including the defined Web transactions.	
8	Cancel button	Clicking this button closes the Register Web transaction window and returns to the <b>Web</b> transaction setting area. The settings in the Register Web transaction window are not applied.	

• You cannot interact with other windows while working in the Register Web transaction window.

#### 10.6.7 Add Web access condition window

#### (1) Window configuration



# (2) Window description

The Add Web access condition window is used to set multiple URIs, which can be entered directly or detected from monitored services, while providing for filtering of the Web access conditions to check their validity.

No.	Item	Description	
1	Source IP	Specifies the IP address of the source. When you launch URI detection for monitored services, only sources that match this IP address are detected.	
		By default, this area displays the IP address of the machine you are currently working on (the machine on which you launched the browser to access SLM).	
		If the system is configured to convert IP addresses through a device such as a router or load balancer, you must change this IP address to the converted IP address. An IP address is entered in the format XXX.XXX.XXX.XXX (XXX: 0 to 255). Values above 255 can be entered, but we recommend that you always enter values within the range of 0 to 255 to avoid errors.	
2	Start detection button or Stop	Start detection button	
	detection button	Clicking this button starts URI detection. This button is displayed while the status is <b>Stopped</b> and when the Add Web access condition window is being displayed. Once you click this button to start detection, it changes into the <b>Stop detection</b> button.	
		From the time you click the <b>Start detection</b> button until you click the <b>Stop detection</b> button, you cannot interact with other items.	
		Stop detection button	
		Clicking this button stops URI detection. This button is displayed while the status is <b>Detecting</b> . Once you click this button to stop detection, it changes into the <b>Start detection</b> button.	
3	Status	This field indicates whether monitored services are being detected. One of the following is displayed:	
		Detecting: URIs are being detected.	
		Stopped: URIs are not being detected.	
4	Add line button	Clicking this button adds a line in <b>Available URI</b> for direct input of a URI. Initially, the URI shown in <b>Service monitored target</b> is displayed on the new line.	
5	Delete all available URIs button	Clicking this button deletes all the URIs displayed in the Available URI area.	

No.	Item	Description	
5	Delete all available URIs button	When you click this button, a confirmation dialog box is displayed. The deletion is performed when you click <b>OK</b> in the dialog box.	
6	Available URI	<ul> <li>This area displays the URIs that have been detected or entered directly. Click a displayed URI to edit it.</li> <li>The following restrictions apply to entering a URI: <ul> <li>A URI can consist of 1 to 255 characters. You can enter more than 255 characters, but we recommend that you keep within the 255-character limit to avoid errors.</li> <li>You cannot enter space, ", &lt;, &gt;, [,  ], ^, `, {,  , }, and non-ASCII characters.</li> <li>Specify a URI under which there are monitored services.</li> </ul> </li> <li>The notation must conform to RFC 3986.</li> </ul>	
7	Service monitored target	The area displays the URI of the monitored services.	
8	Edit cookie button	Clicking this button opens the Edit cookie window, which displays the cookies for the URI selected in the <b>Available URI</b> area. Cookies for which no key or value has been entered are not displayed.	
9	Define Web access condition	This area is for entering a Web access condition for a registered Web transaction.	
10	Import Available URI button	Clicking this button enters automatically in the <b>Path</b> , <b>Query</b> , and <b>Cookie</b> columns below the path, query, and cookie information, respectively, for the URI selected in the <b>Available URI</b> area. If there is no path, query, or cookie information in the URI selected in <b>Available URI</b> , the corresponding columns are left blank. Also, if nothing has been entered for the key or value of a query or cookie, that information is also not entered in the <b>Define Web access condition</b> area.	
		Once the total number of query conditions and cookie conditions combined that have been imported reaches 20, the <b>Add condition</b> button is deactivated.	
11	Apply Web Access Condition button	Clicking this button narrows down the URIs displayed in the <b>Available URI</b> area to only those that exactly match the conditions in the <b>Define Web access condition</b> area.	
12	Delete all button	Clicking this button blanks out all the text boxes in the <b>Define Web access condition</b> area.	
13	Path	<ul> <li>Use this box to enter a path condition. A path condition specifies the path of a URI to be monitored as a Web transaction. The following restrictions apply to the entry:</li> <li>It must conform to Java regular expressions. The regular expression syntax is as described in the API specification of the java.util.regex.Pattern class in Java Platform</li> </ul>	
		<ul> <li>Standard Edition 6.</li> <li>It can consist of 1 to 255 characters. If escape characters are used, each escape character counts as a single character. You can enter more than 255 characters, but we recommend that you keep within the 255-character limit to avoid errors.</li> <li>No spaces or non-ASCII characters can be entered.</li> <li>URL-encoded characters in UTF-8 can be used.</li> </ul>	
		If you click the <b>Add condition</b> button or <b>Refresh</b> button with no entry in <b>Path</b> , the path condition will be .* (all paths apply).	
14	Query	This box displays query conditions. Clicking this text box opens the Edit query window that you use to specify a key and a value for a query condition. If you define multiple query conditions in the Edit query window, they are displayed here in no particular order delimited by the space.	
15	Cookie	This box displays cookie conditions. Clicking this text box opens the Edit cookie window that you use to specify a key and a value for a cookie condition. If you define multiple cookie conditions in the Edit cookie window, they are displayed here in no particular order delimited by the space.	
16	Add condition button or Refresh button	Add condition button	

No.	Item	Description
16	Add condition button or Refresh button	<ul> <li>Clicking this button adds the Web access conditions entered in the Define Web access condition area to the Web access conditions in the Register Web transaction window or Edit Web transaction window. Once they have been added, the text boxes in the Define Web access condition area are blanked out. A maximum of five Web access conditions can be defined for one Web transaction.</li> <li>Refresh button Clicking this button applies your edits to the Web access conditions to the Web access conditions in the Register Web transaction window or Edit Web transaction window, then closes the Edit Web access condition window and returns to the Register Web transaction window or Edit Web transaction window. </li> </ul>
17	Close button	Clicking this button closes the Add Web access condition window and returns to the Register Web transaction window or Edit Web transaction window.

- If a failure or termination occurs in some part of SLM UR processing after you started URI detection by clicking the **Start detection** button in the Add Web access condition window, detection of services by SLM UR will nevertheless continue if possible. However, if SLM UR is unavailable, detection will fail and remain in **Stopped** status. Similarly, when you stop detection of services by clicking the **Stop detection** button, a failure in SLM UR will result in an error message but stop processing will continue.
- If you exit your browser or log out by pressing F5 on the keyboard while Status in the Add Web access condition window shows **Detecting**, detection stops after a two-minute timeout. Even if you log in again during this two-minute period, you will not be able to detect monitored services in the Add/Delete monitor area of the Settings window, or detect URIs in the Add Web access condition window or Edit Web access condition window, until the timeout completes.
- You cannot interact with other windows while working in the Add Web access condition window.

#### 10.6.8 Edit Web access condition window

#### (1) Window configuration and Window description

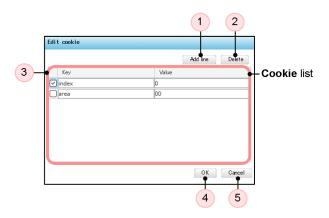
This window exhibits the same information and behavior as the Add Web access condition window, except that the **Add condition** button in the Add Web access condition window appears as the **Refresh** button in this window. For details, see 10.6.7 Add Web access condition window.

# (2) Supplemental notes

- If a failure or termination occurs in some part of SLM UR processing after you started URI detection by clicking the **Start detection** button in the Edit Web access condition window, detection of services by SLM UR will nevertheless continue if possible. However, if SLM UR is unavailable, detection will fail and remain in **Stopped** status. Similarly, when you stop detection of services by clicking the **Stop detection** button, a failure in SLM UR will result in an error message but stop processing will continue.
- If you exit your browser or log out by pressing F5 on the keyboard while Status in the Edit Web access condition window shows **Detecting**, detection stops after a two-minute timeout. Even if you log in again during this two-minute period, you will not be able to detect monitored services in the Add/Delete monitor area of the Settings window, or detect URIs in the Add Web access condition window or Edit Web access condition window, until the timeout completes.
- You cannot interact with other windows while working in the Edit Web access condition window.

#### 10.6.9 Edit cookie window

#### (1) Window configuration



#### (2) Window description

The Edit cookie window is used to enter and edit cookie conditions for the following windows:

- Add Web access condition window
- Edit Web access condition window
- Confirmation of the display of the access log window

The Edit cookie window is also used to review and edit cookies for the URIs in the **Available URI** area of the following windows:

- Add Web access condition window
- Edit Web access condition window

No.	Item	Description
1	Add line button	Clicking this button adds a blank line to the cookie list.
2	Delete button	Clicking this button deletes all the cookies in the cookie list whose check box has been selected.
3	Cookie list	<ul> <li>This area displays a list of cookies.</li> <li>Check box <ul> <li>To delete a cookie, select its checkbox.</li> </ul> </li> <li>Key <ul> <li>This column displays each cookie's key. You can click the text box to edit the key.</li> </ul> </li> <li>Value <ul> <li>This column displays the value for the key on the same row. You can click the text box to edit it.</li> </ul> </li> <li>The following restrictions apply to entry of a key and a value: <ul> <li>The entry must conform to Java regular expressions. The regular expression syntax is as described in the API specification of the java.util.regex.Pattern class in Java Platform Standard Edition 6.</li> <li>The key and value combined can consist of 1 to 255 characters. You can enter more than 255 characters, but we recommend that you keep within the 255-character limit to avoid errors.</li> </ul> </li> </ul>

No.	Item	Description	
3	Cookie list	<ul> <li>For the key, you cannot use space, =, or non-ASCII characters.</li> <li>Each key must be unique (regular expressions are treated as character strings).</li> <li>For the value, you cannot use spaces or non-ASCII characters.</li> <li>URL-encoded characters in UTF-8 can be used.</li> <li>If you click the <b>OK</b> button with nothing entered for <b>Value</b>, <b>Value</b> will be set to .* (all values apply).</li> </ul>	
4	<b>OK</b> button	Clicking this button applies the edits to the cookies to the Add Web access condition window or Edit Web access condition window.	
5	Cancel button	Clicking this button closes the Edit cookie window without applying the edits to the cookies, and returns to the Add Web access condition window or Edit Web access condition window.	

• You cannot interact with other windows while working in the Edit cookie window.

# 10.6.10 Edit query window

#### (1) Window configuration and Window description

This window displays the same contents as the Edit cookie window, except that *query* is substituted for *cookie*. For details, see 10.6.9 Edit cookie window.

#### (2) Supplemental notes

• You cannot interact with other windows while working in the Edit query window.

#### 10.6.11 Edit Web transaction window

#### (1) Window configuration and Window description

This window exhibits the same information and behavior as the Register Web transaction window, except that the **Registration** button in the Register Web transaction window appears as the **Refresh** button in this window. For details, see 10.6.6 Register Web transaction window.

# (2) Supplemental notes

• You cannot interact with other windows while working in the Edit Web transaction window.

10.6.12 Configuration information settings area (Business group settings with the System performance monitor tab selected)

(1) Window configuration

	1	2		3
	Configuration information settin	gs		
	Service group Group01	Service Service01		Refresh configuration information
	System performance monitor	Availability monitor		
	Business group settings =>	Monitor item settings		
	From the Business group list, select	business groups to associate with the se	ervice	
гΙ	Business groups			
	Business group	Host	Monitored target	
	BGroup01	Host01	🎯 Agent01	
	BGroup02	Host03	🝪 Agent02	
			🍪 Agent03	
	BGroup03	Host04	🚱 Agent04	
4				
니			To Monitor item settings	
L			To moritor item settings	
			5	

# (2) Window description

No.	Item	Description	
1	Service group	This box displays the name of the service group selected in the Services area.	
2	Service	This box displays the name of the monitored service selected in the <b>Services</b> area.	
3	Refresh configuration information button	Clicking this button displays the Confirmation of refreshing configuration information window that you use to review the most recent (refreshed) contents of the <b>Business groups</b> area. The <b>Refresh configuration information</b> button is deactivated when Performance Management is not linked. <sup>#</sup>	
4	Business groups	This area displays a list of business groups that the user can access. By selecting the check box for a business group, you can associate it with a monitored service. You can associate multiple business groups with a single monitored service. A business group that is already associated with a monitored service appears with its check box selected.	
5	To Monitor item settings button	Clicking this button displays the monitoring item settings.	

#

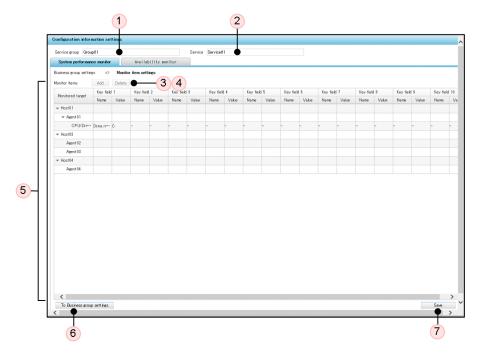
If no value has been set for the pfmManagerHost property in the jplitslm.properties system definition file, it is assumed that Performance Management is not linked.

# (3) Supplemental notes

• While the **Configuration information settings** area is being displayed for a monitored service, even if monitoring item settings for that monitored service are changed in another browser, the changed information will not be reflected on the screen until the **Configuration information settings** area is refreshed.

# 10.6.13 Configuration information settings area (Monitoring item settings with the System performance monitor tab selected)

#### (1) Window configuration



#### (2) Window description

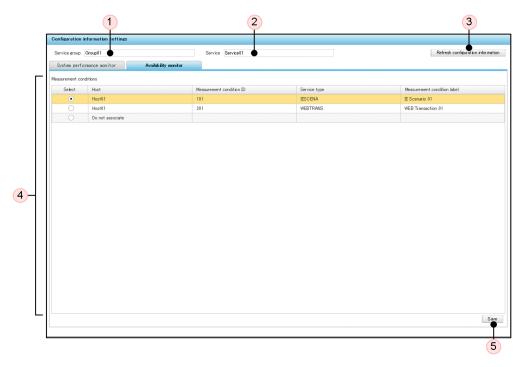
No.	Item	Description	
1	Service group	This box displays the name of the service group selected in the Services area.	
2	Service	This box displays the name of the monitored service selected in the Services area.	
3	Add button	Clicking this button adds a monitoring item.	
4	Delete button	Clicking this button deletes a monitoring item.	
5	Monitor items	<ul> <li>Monitored target This column displays a hierarchical list of hosts, monitoring agents, and monitoring items selected from the business group settings. </li> <li>Key field X</li> </ul>	

No.	Item	Description
5	Monitor items	X is a number from 1 to 10. If the monitoring item is a single instance, the hyphen (-) is displayed. If the monitoring item has multiple metrics, the key field information is displayed.
6	To Business group settings button	Clicking this button displays the business group settings.
7	Save button	Clicking this button saves the monitoring item settings displayed on the screen.

- While the **Configuration information settings** area is being displayed for a monitored service, even if monitoring item settings for that monitored service are changed in another browser, the changed information will not be reflected on the screen until the **Configuration information settings** area is refreshed.
- If you do any of the following before you click the **Save** button, the settings will be discarded:
  - Select another service from the Services area.
  - Click the To Business group settings button.
  - Navigate to somewhere outside the Configuration information settings area
- If multiple users are logged in to SLM Manager, and a service group administrator registers or deletes a monitored target, the timing for reflecting the change on the other users' screens is described in (1) Timing of updating the number of registered monitored targets.

# 10.6.14 Configuration information settings area (with the Availability monitor tab selected)

#### (1) Window configuration



JP1/Service Level Management Description

# (2) Window description

The following table lists the items that are displayed:

No.	Item	Description
1	Service group	This box displays the name of the service group selected in the Services area.
2	Service	This box displays the name of the monitored service selected in the Services area.
3	Refresh configuration information button	Clicking this button displays the Confirmation of refreshing configuration information window that you use to review the most recent (refreshed) Performance Management configuration information from the <b>Measurement conditions</b> area. The <b>Refresh configuration information</b> button is deactivated when Performance
		Management is not linked. <sup>#</sup>
4	Measurement conditions	• Select
		Select the radio button for the measurement condition you wish to associate with the monitored service.
		To clear the radio button settings, select the <b>Do not associate</b> radio button.
		If a measurement condition is already associated with the monitored service, its radio button appears already selected.
		• Host
		This column displays the name of the host of the measurement condition.
		Measurement condition ID
		This column displays the ID of the measurement condition.
		• Service type
		This column indicates whether the service is running as an IE scenario or a Web transaction.
		Measurement condition label
		This column displays the remark for the measurement condition.
5	Save button	Clicking this button saves the measurement condition settings that were entered.

#

If no value is set for the pfmManagerHost property in the jplitslm.properties system definition file, it is assumed that Performance Management is not linked.

# (3) Supplemental notes

- While the **Configuration information settings** area is being displayed for a monitored service, even if the monitoring item settings for that monitored service are changed from another browser, the changed information will not be reflected on the screen until the **Configuration information settings** area is refreshed.
- If you do any of the following before you click the Save button, the settings will be discarded:
  - Select another service from the Services area.
  - Navigate to somewhere outside the Configuration information settings area.
- When measurement conditions are acquired, any measurement condition that is the same before and after acquisition will inherit the previous radio button setting for associating it with the monitored service.
- When measurement conditions are acquired, a measurement condition that is added on the Performance Management side will be added to the SLM measurement conditions in an unassociated state. For a measurement condition that is deleted on the Performance Management side, its association is automatically canceled and it is deleted from the SLM measurement conditions.

- If you change the measurement condition ID and service type of a measurement condition on the Performance Management side, on the SLM side it is assumed that the original measurement condition was deleted and a new measurement condition was added.
- If the host of the PFM Agent for Service Response belongs to a business group, the measurement conditions will be visible only to service group administrators with permission to view that business group. If the host of the PFM - Agent for Service Response does not belong to a business group, the measurement conditions will be visible to all system administrators.
- If different service group administrators are changing the settings of the same service group at the same time, the settings of the last service group administrator to change the settings are the ones that take effect.
- If multiple service group administrators are changing settings, and a service group administrator clicks the **Save** button, until the settings are applied to SLM, the other service group administrators will not be able to click the **Save** button to apply their settings to SLM.

#### 10.6.15 Add Items to be Monitored window

#### (1) Window configuration

Select	Monitor item
0	Available Memory
0	CPU Usage
$\bigcirc$	Disk Busy %
0	Logical Disk Free Size
0	Network Bytes

# (2) Window description

No.	Item	Description
1	Monitoring items	This area displays a list of monitoring items that belong to the monitoring agent that was selected when you clicked the Add button in the Configuration information settings area (Monitor item settings with the System performance monitor tab selected). Nothing is selected at the time the window is displayed.
2	OK button	For a single-instance monitoring item, clicking the <b>OK</b> button adds the monitoring item and returns to the <b>Configuration information settings</b> area.
		For a multi-instance monitoring item, clicking the <b>OK</b> button displays the Key field information settings window.
3	Cancel button	Clicking this button stops addition of monitoring items and returns to the <b>Configuration</b> information settings area.

# 10.6.16 Key field information settings window

# (1) Window configuration

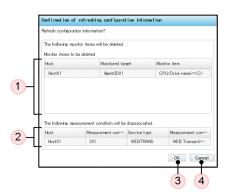
	nitor itemDisk Busy 🖌 🛡	Key field 1	Select key field 1 Key field 2	Key field 3	V Select key Key field 4	Key field 5	Key field 6	Add line Key field 7	Key field 8	Key field 9	Key fiel
	) Monitor item name	Ney neid i	Key field 2	Pey ted 3	Ney ted 4	rey ted o	Ney field 0	Ney neid 7	Puey field a	Ney field 3	rey te
	Disk Busy NKN Disk Tim…	A LASK TIME									
	Disk Busy was Disk Tim										
Reg	sistered key fields Monitor item name	Key field 1	Key field 2	Key field 3	Key field 4	Key field 5	Key field 6	Key field 7	Key field 8	Key field 9	Key fie
Reg		Key field 1 Ni Disk Time	Key field 2	Key field 3	Key field 4	Key field 5	Key field 6	Key field 7	Key field 8	Key field 9	Key fie
Reg	Monitor item name	% Disk Time	Key field 2	Key field 3	Key field 4	Key field 5	Key field 6	Key field 7	Key field 8	Key field 9	Key fiel
Rieg	Monitor item name	% Disk Time	Key field 2 -	Key field 3	Key field 4 -	Keyfield 5 -	Key field 6 -	Key field 7 -	Key field 8 -	Key field 9 -	Key fie
Rieg	Monitor item name	% Disk Time	Key field 2	Key field 3	Key field 4 -	Key field 5	Key field 6	Key field 7 -	Key field 8	Key field 9 -	Key fie
Rep	Monitor item name	% Disk Time	Key field 2 -	Key field 3	Key field 4	Key field 5	Key field 6	Key field 7	Key field 8	Key field 9	Key f

# (2) Window description

No.	Item	Description
1	Monitor item	This box displays the monitoring item selected in the Add Items to be Monitored window.
2	Select key field pull-down menus	<ul><li>The key fields used to generate the name of the monitoring item are selected from these pull-down menus.</li><li>You must make a selection from Select key field 1, but Select key field 2 is optional.</li></ul>
3	Add line button	Clicking this button adds one line to the key field information for the monitoring item.
4	Key field information for the monitoring item	<ul> <li>Check box Select a monitoring item's check box to register the monitoring item. If you select the check box in the header, the check boxes in all rows are selected. Similarly, if you clear the check box in the header, the check boxes in all rows are cleared.</li> <li>Monitor item name This column displays the monitoring item name generated from the value in Monitor item and the values selected in the Select key field pull-down menus.</li> <li>Key field X Enter in the text boxes in these columns the key field information for the monitoring item. The number of key field items is determined by the monitoring item that is being registered. All columns are blank by default. A character string consisting of 0 to 1,024 bytes can be specified in a text box.</li> </ul>
5	Registered key fields	This area displays the registered key field information.
6	OK button	Clicking this button registers the key field information. The only thing that will be registered will be the key field information you selected from the monitoring item's key field information list. When you click the <b>OK</b> button, the Key field information settings window closes and the monitoring item registered in the Key field information settings window is added below the monitored target that was selected when you clicked the <b>Add</b> button in the <b>Configuration information settings</b> area.
7	Cancel button	Clicking this button cancels registration of the key field information.

# 10.6.17 Confirmation of refreshing configuration information window

#### (1) Window configuration



# (2) Window description

The following table lists the items that are displayed:

No.	Item	Description
1	Monitor items to be deleted	This area displays a table of the monitoring items that are to be deleted by the process for updating the configuration information.
		If no monitoring items are to be deleted, <b>No monitor items to delete</b> is displayed in place of the table.
2	Measurement conditions to be disassociated	This area displays a table of the measurement conditions that are to be disassociated when measurement conditions are deleted by the process for updating the configuration information and dissolving the associations between the selected monitored services and the measurement conditions.
		If no measurement conditions are being disassociated, <b>No measurement conditions to be disassociated</b> is displayed in place of the table.
3	OK button	Clicking this button executes the updates to the configuration information and measurement conditions.
4	Cancel button	Clicking this button cancels the updates to the configuration information and measurement conditions.

# (3) Supplemental notes

- Configuration information cannot be updated simultaneously from multiple browsers within the same SLM system. However, it is permissible to update the configuration information from another browser in the period from when you click the **Refresh configuration information** button in the **Configuration information settings** area until you click the **OK** button in the Confirmation of refreshing configuration information window, because this period is not considered to be part of the update process.
- In the period from when you click the **Refresh configuration information** button in the **Configuration information settings** area until you click the **OK** button in the Confirmation of refreshing configuration information window, if a different browser updates the configuration information for the same monitored service, causing an inconsistency in the contents of the Confirmation of refreshing configuration information window, the following actions will be performed when you click the **OK** button:
  - The configuration information update process will abort.
  - A notification will be posted that configuration information updating has been executed from another browser, and you will be prompted to restart the configuration information process.

10. SLM Windows

10.6.18 Monitor settings area (monitored target within the monitored service selected in the Services area)

(1) Window configuration

$\square$	itor settings	Threshold	5	hit 6		Trend mo		7
	Avg. response	3000	-	ms		24	hours	•
	Throughput	500		er sec		24	hours	
0	Error rate	0.0	9			24	TIOUTS	
-	dict. settings							
ays in I	8 alculation Days till start 9	Period o	f analysis 10	)				
30	days 1 days	Short ra	nge 🗸	1				
	Item name (11)		Sensitivity	12	Correlated in	ems	(	13
	Avg. response		Middle 🗸		None		V	
	Throughput		Middle 🗸					
	Error rate		Middle 🗸					

# (2) Window description

No.	Item	Description
1	Service group	This box displays the name of the service group to which the monitored target selected in the <b>Services</b> area belongs.
2	Service	This box displays the name of the monitored service to which the monitored target selected in the <b>Services</b> area belongs.
3	Monitored target	This box displays the name of the monitored target selected in the Services area.
SLO r	nonitor settings	
4	Item name	This column displays a list of monitoring items. Use the check box for each monitoring item to specify whether threshold monitoring is to be performed:
		Selected: Perform threshold monitoring.
		Cleared: Do not perform threshold monitoring.
		If you select the check box in the header row, the check boxes for all the monitoring item rows are selected. Similarly, if you clear the check box in the header row, the check boxes for all the monitoring item rows are cleared.
5	Threshold	Enter in this column a threshold value for each monitoring item. The following restrictions apply:
		Avg. Response monitoring item
		- You can specify a value in the range from 1 to 300000. You can enter a value greater
		than 300000, but we recommend that you not do so to avoid errors.
		- The unit is milliseconds.
		- You must specify a threshold value for average response time that is shorter than the length of the monitored service's timeout period. If you specify a period that is longer than

No.	Item	Description
5	Threshold	the timeout period, monitoring will be disabled so that the average response time will not exceed the threshold.
		Throughput monitoring item
		- You can specify a value in the range from 1 to 1000000. You can enter a value greater than 1000000, but we recommend that you not do so to avoid errors.
		- The unit is per second.
		Error rate monitoring item
		- You can specify a value in the range from 0 to 99.9. You can enter a value greater than 99.9, but we recommend that you not do so to avoid errors.
		- The unit is percent (%).
		- Only numeric digits and the period (.) can be entered.
		- You can specify up one decimal place.
6	Unit	This column displays the unit of each monitoring item's value, as follows:
		Avg. Response: in ms (milliseconds)
		Throughput: per sec (transactions per second)
		Error rate: %
7	Trend monitor	You make entries in this column when trend monitoring is to be performed for each monitoring item.
		To perform trend monitoring, threshold monitoring must be selected with the applicable check
		box under <b>Item name</b> .
		Check box
		Selected: Perform trend monitoring.
		Cleared: Do not perform trend monitoring.
		Text box
		Specify in each text box the amount of time over which trend monitoring is to be performed for that monitoring item.
		A warning will be issued if a trend is detected that indicates that the threshold might be exceeded within the specified period from the present time. The following restrictions apply:
		- You can specify a value in the range from 1 to 168. You can enter a value greater than 168, but we recommend that you not do so to avoid errors.
		- The unit is hours.
Error	Predict. settings <sup>#</sup>	
8	Days in baseline calculation	Enter in this text box the number of days' worth of service performance that are to be used in the calculation of the baseline. A value must be entered even if out-of-range value detection is not performed. The following restrictions apply:
		• You can specify a value in the range from 1 to 60.
		• The unit is days.
9	Days till start	Enter in this text box the number of days' worth of past service performance for the monitored service that are to be obtained before out-of-range value detection will be started. A value must be entered even if out-of-range value detection is not performed. The following
		restrictions apply:
		• You can specify a value in the range from 1 to 60.
		• The unit is days.
10	Period of analysis	Select the period of analysis for out-of-range value detection from the following items:
		Short range: Past 60 days
		Long range: Past 5 years
		Period of analysis is deactivated when Web transaction is selected from Services.
11	Item name	This column displays a list of monitoring items. Use each monitoring item's check box to

No.	Item	Description
11	Item name	Selected: Perform out-of-range value detection. Cleared: Do not perform out-of-range value detection.
		If you select the check box in the header, the check boxes on all the rows are selected. Similarly, if you clear the check box in the header, the check boxes on all the rows are cleared.
12	Sensitivity	In this column, use the pull-down menu for each monitoring item to specify its sensitivity for out-of-range value detection. You can select for each monitoring item a sensitivity of <b>High</b> , <b>Middle</b> , or <b>Low</b> . The higher the sensitivity, the more likely detection becomes.
13	Correlated items	Use this column to specify whether out-of-range value detection is to be performed for a combination of multiple monitoring items. Use the pull-down menu to select the monitoring item to be combined. No selection can be made for a monitoring item that does not allow out-of-range value detection in combination with another monitoring item; nothing is displayed in this field in such a case.
		Note that even if <b>Throughput</b> is selected from this pull-down menu, out-of-range value detection of throughput alone will not be performed. To perform out-of-range value detection of throughput alone, you must use the separate <b>Throughput</b> item to specify out-of-range value detection.
14	Apply button	Clicking this button applies the settings.

#

This area is for configuring out-of-range value detection.

#### (3) Supplemental notes

- When setting the following monitor items, if the **Settings** button is clicked without stopping monitoring of the monitored service to set the monitor items for, an error message is displayed and the settings are not reflected.
  - Whether SLO monitoring has been implemented
  - Whether to monitor trends
  - Whether predictive error detection has been implemented
  - Period of analysis of predictive error detection
- Even when text boxes are not active, the values entered in them are retained until another monitored service is selected or a transition to another window occurs.
- If a service group administrator sets monitoring items while multiple users are logged in to SLM Manager, those settings will not be reflected on the screens of other service group administrators until those other service group administrators display or refresh the **Monitor settings** area of the Settings window.

# 10.6.19 Monitor settings area (monitored service selected in the Services area)

(1) Window configuration

_	Service group	1 iroup13		 Service							Short r		1					Clear	base monit	
Γ	Monitor Rem	SLO monitor s Monitor Thresi		Occurrence (Times exc	e frequency sected/meas	red) T	rend ma	onitor		edict. setti Days in ba		culation	Days till star	t Sens	tivity	0 courre	nce frequ	ency (measured)		nitor item
	- Host01	4	5		6		(	7	8	) (	9		10		12)		13			5
	CP UKDr···· Heep	<ul> <li>✓</li> <li>✓</li> <li>✓</li> <li>✓</li> <li>✓</li> <li>✓</li> <li>✓</li> <li>✓</li> <li>✓</li> </ul>	30.0 %		1			14 hours 14 hours		30 da			1 days		ddle ∨ ddle ∨		/ 60			•

# (2) Window description

No.	Item	Description
1	Service group	This box displays the name of the service group to which the monitored service selected in the <b>Services</b> area belongs.
2	Service	This box displays the name of the monitored service selected in the Services area.
3	Monitor item	This column displays the names of the monitoring items.
SLO n	nonitor settings	
4	Monitor	Use the check boxes in this column to specify for each item whether threshold monitoring is to be performed: Selected: Perform threshold monitoring.
		Cleared: Do not perform threshold monitoring.
5	Threshold	This column indicates whether the threshold of the monitoring item is an upper-limit threshold value or a lower-limit threshold value:
		T : Upper-limit threshold value
		Lower-limit threshold value
		Enter in the text box a threshold value for the monitoring item. You can enter a value that is greater than or equal to 0 for the threshold. A number with decimal places can be entered. However, because the precision is 7 digits, do not enter a value that exceeds 7 digits.
6	Occurrence frequency (Times exceeded/measured)	Specify in this column for each monitoring item the number of times the threshold can be exceeded within a specified number of measurements before an event is issued.
		You can specify a value in the range from 1 to 100 for the number of times exceeded and for the number of measurements. However, you cannot specify a value for the number of times exceeded that is greater than the number of measurements.
7	Trend monitor	For each monitoring item, specify the check box in this column if you wish to perform trend monitoring.

No.	Item	Description
7	Trend monitor	To perform trend monitoring, a threshold value must have been entered for the monitoring item for which you wish to perform trend monitoring.
		Check box
		Selected: Perform trend monitoring.
		Cleared: Do not perform trend monitoring.
		Text box
		Specify the amount of time during which trend monitoring is to be performed.
		A warning will be issued if a trend is detected indicating that the threshold might be exceeded within the specified period from the present time. The following restrictions apply:
		- You can specify a value in the range from 1 to 168. You can enter a value that is greater than 168, but we recommend that you not do so to avoid errors.
		- The unit is hours.
Error	Predict. settings	
8	Monitor	For each monitoring item, select the check box in this column if you wish to perform out-of- range value detection:
		Selected: Perform out-of-range value detection.
		Cleared: Do not perform out-of-range value detection.
		If you select the check box in the header, the check boxes in all the rows are selected. Similarly, if you clear the check box in the header, the check boxes in all the rows are cleared.
9	Days in baseline calculation	Enter in this text box the number of days' worth of service performance that are to be used in the calculation of the baseline. A value must be entered even if out-of-range value detection is not performed. The following restrictions apply:
		<ul><li>You can specify a value in the range from 1 to 60.</li><li>The unit is days.</li></ul>
10	Days till start	<ul> <li>Input for how many days the past system performance of a monitored service must be obtained at the least to start out-of-range value detection. Input a value even when not performing out-of-range value detection. The following restrictions apply to the entry.</li> <li>You can specify a value in the range from 1 to 60.</li> </ul>
		• The unit is days.
11	Period of analysis	Select the period of analysis for out-of-range value detection from the following items: Short range: Past 60 days Long range: Past 5 years
12	Sensitivity	In this column, use the pull-down menu for each monitoring item to specify its sensitivity for out-of-range value detection. You can select for each monitoring item a sensitivity of <b>High</b> , <b>Middle</b> , or <b>Low</b> . The higher the sensitivity, the more likely detection becomes.
13	Occurrence frequency (Times exceeded/measured)	Specify in this column for each monitoring item the number of times the threshold can be exceeded within a specified number of measurements before an event is issued.
		You can specify a value in the range from 1 to 100 for the number of times exceeded and for the number of measurements. However, you cannot specify a value for the number of times exceeded that is greater than the number of measurements.
14	Clear base monitor item button	Click this button to reset the settings for the monitoring item specified in <b>SLO monitor</b> settings and Error Predict. settings to the default (all unselected status). This button is displayed when the service monitoring configuration is System.
15	Base monitor item radio button	<ul><li>Select the radio button for the monitoring item to be used as the base for selecting the dates to be used for creating the baseline.</li><li>These radio buttons are displayed when the service monitoring configuration is System.</li></ul>
16	Apply button	Clicking this button applies the settings.

- The settings will be discarded if you do any of the following before you click the Save button:
  - Select another service in the Services area.
  - Select anything outside the Monitor settings area.

# 10.6.20 Start/Stop monitor area

# (1) Window configuration

	op monitor		
•	Service group	Service	Monitored status
	Group01	Service01	Stop
	Group01	Service02	Stop
	Group01	Service03	Stop
	Group02	Service04	Stop
	Group02	Service05	Stop
	Group03	Service06	Stop
	Group04	Service07	Stop

# (2) Window description

No.	Item	Description
1	Check boxes	Select the check boxes for the monitored services whose monitoring you wish to start or stop. If you select the check box in the header, the check boxes for all the rows are selected. Similarly, if you clear the check box in the header, the check boxes for all the rows are cleared.
2	Service group	This column displays the name of the service group for each monitored service.
3	Service	This column displays the name of each monitored service.
4	Monitored status	This column displays the current monitoring status of each monitored service: <b>Start</b> : Monitoring has started (monitoring is being performed). <b>Stop</b> : Monitoring has stopped (monitoring is not being performed).

No.	Item	Description
5	Start button	Clicking this button starts monitoring of the monitored services whose check box is selected.
6	Stop button	Clicking this button stops monitoring of the monitored services whose check box is selected.

- Until start monitoring processing has finished for the selected monitored services, no other operations can be performed.
- If no check boxes are selected in the Start/Stop monitor area, you cannot click the Start button.
- If you click the **Start** button while a monitored service that is already being monitored is selected, its monitoring status does not change.
- When you select multiple monitored services and start monitoring, their start processes are executed in parallel. As a result, even if an error occurs in the start process for one monitored service, the start processes continue for the other monitored services. However, if you attempt to start monitoring of a monitored service that has been deleted by another user, an error message will be displayed and the start processes for all the monitored services will be suspended. In such a case, you must start over by selecting the monitored services whose monitoring is to be started and clicking the **Start** button again.
- If monitoring fails to start for any of the selected monitored services, an error message is displayed. Correct the error, and then click the **Start** button again.
- If the SLM UR that is to monitor the selected monitored services is not running, monitoring of those monitored services will not start. You can check which monitored services failed to start in the KNAS16304-E message that is output to the message log.
- When monitoring of a monitored service starts, the start time is output to the message log. The messages that are output for the various types of monitoring are listed below.

Service performance monitoring

- Threshold monitoring: KNAS32017-I message.
- Trend monitoring: KNAS32018-I message.
- Error detection: KNAS32019-I message.

System performance monitoring

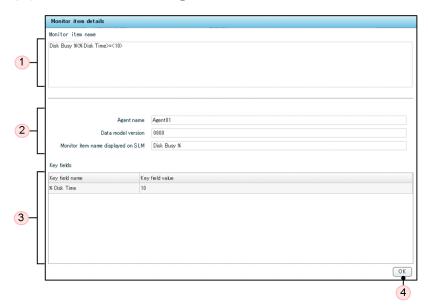
- Threshold monitoring: message KNAS32023-I.
- Trend monitoring: KNAS32024-I message.
- Error detection: KNAS32025-I message.

Availability monitoring

- Availability monitoring: KNAS32027-I message.
- When you start monitoring a monitored service, monitoring by the SLM UR that is being used to monitor stops and then restarts. This means that, for Web transactions that are monitored by the same SLM UR as the monitored services that are starting, their monitoring will start fresh again from the first Web access following restart.
- Until stop monitoring processing has finished for the selected monitored services, no other operations can be performed.
- If no check boxes are selected in the Start/Stop monitor area, you cannot click the Stop button.
- If you select a monitored service whose monitoring has already stopped and click the **Stop** button, its monitored status will not change.

- When you select multiple monitored services and stop monitoring, their stop processes are executed in parallel. As a result, even if an error occurs in the stop process for one monitored service, the stop processes continue for the other monitored services. However, if you attempt to stop monitoring of a monitored service that has been deleted by another user, an error message will be displayed and the stop processes for all the monitored services will be suspended. In such a case, you must start over by selecting the monitored services whose monitoring is to be stopped and clicking the **Stop** button again.
- If monitoring fails to stop for some of the monitored services, an error message is displayed. Correct the error, and then click the **Stop** button again.
- Even if the SLM UR that is monitoring the selected monitored services is not running, monitoring of the selected monitored services will stop successfully. The KNAS16414-W message indicating that SLM UR is not running will be output to the message log.
- When you stop monitoring a monitored service, monitoring by the SLM UR that is being used to monitor stops and then restarts. This means that, for Web transactions that are monitored by the same SLM UR as the monitored services that are starting, their monitoring will start fresh again from the first Web access following restart.
- If you start (resume) monitoring more than 24 hours after stopping monitoring, there might not be a full minute's worth of acquired information since the time monitoring finally stopped to use for the baseline calculation. In this case, you can correct this situation by continuing to monitor for at least one hour, or by stopping monitoring and restarting.

#### 10.6.21 Monitor item details window



#### (1) Window configuration

# (2) Window description

No.	Item	Description
1	Monitor item name	This area displays the name of a system performance monitoring item. If the name of the monitoring item is too long to fit in the area, an abbreviated version of the name is displayed.

No.	Item	Description
2	Monitoring item information	<ul> <li>Agent name         This box displays the name of the monitoring agent to which the monitoring item belongs.     </li> <li>Data model version         This box displays the data model version of the monitoring agent to which the monitoring item belongs.     </li> <li>Monitor item name displayed on SLM         This box displays the monitoring item name that was set in Performance Management and that is displayed in SLM.     </li> </ul>
3	Key fields	This area displays a table of the key field names and key field values. In the case of a single instance, this table will be empty. You can move the cursor over it to view the entire character string.
4	OK button	Clicking this button closes the Monitor item details window.



# Messages

This chapter explains the messages issued by SLM.

## 11.1 Format of messages

This section describes the output format of the SLM messages, as well as the format of the explanations used in this manual.

## 11.1.1 Output format of messages

A message output by SLM consists of a message ID that starts with KNAS, followed by a message text.

```
KNASnnnnn-Zmessage-text
```

The elements of the message ID are as follows:

#### KNAS

An identifier indicating that the message is an SLM message.

#### nnnnn

The serial number of the message.

#### Ζ

The type of message.

The following table shows the message types, the contents of each message type, and the corresponding Windows event log type.

## Table 11-1: Message types, their contents, and the Windows event log types

Туре	Contents	Type of Windows event log
E	Indicates an error message. These messages instruct the user that corrective action is required.	Error
I	Indicates a notification message. These messages provide the user with information.	Information
Q	Indicates a notification message. These messages ask the user to select an action.	Notification
W	Indicates a warning message. These messages issue a warning, although processing continues. The user is recommended to take corrective action as necessary.	Warning

## 11.1.2 Format of message explanations

The format of the explanations of SLM output messages used in this manual is shown below. Not all of these items are provided for some messages.

message-ID

message-text

xx....xx: Indicator of a variable value contained in the message text.

Explanation of the variable shown in the message text (xx....xx is lower-case letters).

Description

Description of the message.

(S)

Processing performed by the system at the time the message is output.

(O)

Corrective action to be taken by the operator when the message has been output.

## 11.1.3 For system administrators

When a problem occurs, begin by collecting data needed to investigate why the message was issued, as detailed in 7.1.6 Collecting the data needed for determining the cause of a problem.

If an error dialog box is displayed when the problem occurs, start collecting data while the dialog box is being displayed.

The following table shows the destinations of the SLM messages.

Table 11-2: Message destinations

ID	Message destination						
	Audit log	On screen	Event log	Integrated trace log	Message log		
KNAS02000-I	N	N	Y	Y	Y		
KNAS02001-I	N	Ν	Y	Y	Y		
KNAS02002-E	N	Ν	Y	Y	Y		
KNAS02003-I	N	Ν	N	Y	Y		
KNAS02004-I	N	Ν	N	Y	Y		
KNAS02005-I	N	N	N	Y	Y		
KNAS02006-I	N	Ν	N	Y	Y		
KNAS02007-I	N	N	N	N	N		
KNAS02008-I	N	N	N	N	N		
KNAS02009-E	N	Ν	N	N	N		
KNAS02010-E	N	Ν	N	Y	Y		
KNAS02025-E	N	N	N	Y	Y		
KNAS02035-E	N	N	N	Y	Y		
KNAS02036-E	N	N	N	Y	Y		
KNAS02043-I	N	N	N	Y	Y		
KNAS02089-I	N	N	N	Y	Y		
KNAS02090-I	N	N	N	Y	Y		
KNAS02091-E	N	N	N	Y	Y		
KNAS02092-W	N	N	N	Y	Y		
KNAS02094-E	N	N	N	Y	Y		
KNAS02095-E	N	N	N	Y	Y		
KNAS02099-E	N	N	N	Y	Y		
KNAS02102-I	N	N	N	Y	Y		
KNAS02118-E	N	N	N	Y	Y		
KNAS02119-E	N	N	N	Y	Y		
KNAS02120-E	N	N	N	Y	Y		
KNAS02121-E	N	N	N	Y	Y		
KNAS02125-W	N	N	N	Y	N		
KNAS02126-W	N	N	N	Y	Y		
KNAS02127-I	N	N	N	Y	Y		

ID	Message destination						
	Audit log	On screen	Event log	Integrated trace log	Message log		
KNAS02128-E	N	N	N	Y	Y		
KNAS02129-E	N	N	N	Y	Y		
KNAS02133-I	N	N	N	Y	Y		
KNAS03004-E	N	N	N	N	Y		
KNAS03005-E	N	N	N	N	Y		
KNAS03007-E	N	N	N	N	Y		
KNAS03016-W	N	N	N	N	Y		
KNAS03020-E	N	N	N	N	Y		
KNAS03022-I	N	N	N	N	Y		
KNAS03023-I	N	N	N	N	Y		
KNAS03024-I	N	N	N	N	Y		
KNAS03025-I	N	N	N	N	Y		
KNAS03026-I	N	N	N	N	Y		
KNAS03027-E	N	N	N	N	Y		
KNAS03028-E	N	N	N	N	Y		
KNAS03029-W	N	N	N	N	Y		
KNAS03030-E	N	N	N	N	Y		
KNAS03031-E	N	N	N	N	Y		
KNAS03032-E	N	N	N	N	Y		
KNAS03033-W	N	N	N	N	Y		
KNAS03034-W	N	N	N	N	Y		
KNAS03035-W	N	N	N	N	Y		
KNAS03036-I	N	N	N	N	Y		
KNAS03037-I	N	N	N	N	Y		
KNAS03038-E	N	N	N	N	Y		
KNAS03039-E	N	N	N	N	Y		
KNAS03040-W	N	N	N	N	Y		
KNAS03041-W	N	N	N	N	Y		
KNAS03042-E	N	N	N	N	Y		
KNAS03044-E	N	N	N	N	Y		
KNAS03045-W	N	N	N	N	Y		
KNAS03046-W	N	N	N	N	Y		
KNAS03503-E	N	N	N	N	Y		
KNAS03504-E	N	N	N	N	Y		

ID	Message destination						
	Audit log	On screen	Event log	Integrated trace log	Message log		
KNAS03505-E	N	N	N	N	Y		
KNAS03507-W	N	N	N	N	Y		
KNAS03508-I	N	N	N	N	Y		
KNAS03509-I	N	N	N	N	Y		
KNAS03510-I	N	N	N	N	Y		
KNAS03511-I	N	N	N	N	Y		
KNAS03512-I	N	N	N	N	Y		
KNAS03513-I	N	N	N	N	Y		
KNAS03514-I	N	N	N	N	Y		
KNAS03515-E	N	N	N	N	Y		
KNAS03516-E	N	N	N	N	Y		
KNAS03517-E	N	N	N	N	Y		
KNAS03518-E	N	N	N	N	Y		
KNAS03519-E	N	N	N	N	Y		
KNAS05000-E	N	N	N	N	Y		
KNAS09000-E	N	N	N	Y	N		
KNAS09001-E	N	N	N	N	N		
KNAS09002-E	N	N	N	Y	N		
KNAS09003-E	N	N	N	Y	N		
KNAS09004-E	N	N	N	Y	N		
KNAS09005-W	N	N	N	Y	N		
KNAS09007-E	N	N	N	N	Y		
KNAS09008-E	N	N	N	N	Y		
KNAS09009-E	N	N	N	N	Y		
KNAS09014-E	N	N	N	Y	N		
KNAS09015-W	N	N	N	Y	N		
KNAS09016-E	N	N	N	N	Y		
KNAS09021-E	N	N	N	N	Y		
KNAS09022-E	N	N	N	Y	N		
KNAS09023-E	N	N	N	N	Y		
KNAS09100-E	N	N	N	N	Y		
KNAS09500-I	Y	N	N	N	N		
KNAS09501-E	Y	N	N	N	N		
KNAS09502-I	Y	N	N	N	N		

ID	Message destination						
	Audit log	On screen	Event log	Integrated trace log	Message log		
KNAS09503-E	Y	N	N	N	N		
KNAS09504-I	Y	N	N	N	N		
KNAS09505-E	Y	N	N	N	N		
KNAS09506-I	Y	N	N	N	N		
KNAS09507-E	Y	N	N	N	N		
KNAS09508-I	Y	N	N	N	N		
KNAS09509-E	Y	N	N	N	N		
KNAS09510-I	Y	N	N	N	N		
KNAS09511-E	Y	N	N	N	N		
KNAS09512-I	Y	N	N	N	N		
KNAS09513-E	Y	N	N	N	N		
KNAS09514-I	Y	N	N	N	N		
KNAS09515-E	Y	N	N	N	N		
KNAS09516-I	Y	N	N	N	N		
KNAS09517-E	Y	N	N	N	N		
KNAS09518-I	Y	N	N	N	N		
KNAS09519-E	Y	N	N	N	N		
KNAS09520-I	Y	N	N	N	N		
KNAS09521-E	Y	N	N	N	N		
KNAS09522-I	Y	N	N	N	N		
KNAS09523-E	Y	N	N	N	N		
KNAS09524-I	Y	N	N	N	N		
KNAS09525-E	Y	N	N	N	N		
KNAS09526-I	Y	N	N	N	N		
KNAS09527-E	Y	N	N	N	N		
KNAS09600-E	N	N	N	N	Y		
KNAS09601-E	N	N	N	N	Y		
KNAS09602-E	N	N	N	N	Y		
KNAS09603-E	N	N	N	N	Y		
KNAS10000-I	N	Y	N	N	N		
KNAS10001-E	N	Y	N	N	N		
KNAS10002-Q	N	Y	N	N	N		
KNAS10003-I	N	Y	N	N	N		
KNAS11400-I	N	Y	N	N	N		

ID	Message destination						
	Audit log	On screen	Event log	Integrated trace log	Message log		
KNAS11500-I	N	Y	N	N	N		
KNAS11600-Q	N	Y	N	N	N		
KNAS11601-E	N	Y	N	N	N		
KNAS11602-W	N	Y	N	N	N		
KNAS11603-I	N	Y	N	N	N		
KNAS11604-Q	N	Y	N	N	N		
KNAS11605-I	N	Y	N	N	N		
KNAS11606-Q	N	Y	N	N	N		
KNAS11607-I	N	Y	N	N	N		
KNAS11700-I	N	Y	N	N	N		
KNAS11701-Q	N	Y	N	N	N		
KNAS11702-I	N	Y	N	N	N		
KNAS11703-I	N	Y	N	N	N		
KNAS11704-I	N	Y	N	N	N		
KNAS11705-Q	N	Y	N	N	N		
KNAS11706-I	N	Y	N	N	N		
KNAS11707-Q	N	Y	N	N	N		
KNAS11708-Q	N	Y	N	N	N		
KNAS11709-Q	N	Y	N	N	N		
KNAS11710-I	N	Y	N	N	N		
KNAS11711-E	N	Y	N	N	N		
KNAS11712-I	N	Y	N	N	N		
KNAS11713-Q	N	Y	N	N	N		
KNAS11714-Q	N	Y	N	N	N		
KNAS11715-I	N	Y	N	N	N		
KNAS11716-I	N	Y	N	N	N		
KNAS11717-I	N	Y	N	N	N		
KNAS11718-Q	N	Y	N	N	N		
KNAS11719-Q	N	Y	N	N	N		
KNAS11720-E	N	Y	N	N	N		
KNAS15000-I	N	Y	N	N	Y		
KNAS15001-E	N	Y	N	N	Y		
KNAS15005-E	N	Y	N	N	Y		
KNAS15006-E	N	Y	N	N	Y		

ID	Message destination						
	Audit log	On screen	Event log	Integrated trace log	Message log		
KNAS15007-E	N	Y	N	N	Y		
KNAS15008-E	N	Y	N	N	Y		
KNAS15009-I	N	Y	N	N	Y		
KNAS15011-E	N	Y	N	N	Y		
KNAS15012-E	N	Y	N	N	Y		
KNAS15013-E	N	Y	N	N	Y		
KNAS15014-I	N	Y	N	N	Y		
KNAS15015-I	N	Y	N	N	Y		
KNAS15016-E	N	Y	N	N	Y		
KNAS15300-I	N	N	N	N	Y		
KNAS15301-E	N	Y	N	N	Y		
KNAS15302-E	N	Y	N	N	Y		
KNAS15304-E	N	Y	N	N	Y		
KNAS15305-E	N	Y	N	N	Y		
KNAS15306-I	N	N	N	N	Y		
KNAS15307-E	N	N	N	N	Y		
KNAS15308-E	N	Y	N	N	Y		
KNAS15309-E	N	Y	N	N	Y		
KNAS15310-E	N	Y	N	N	Y		
KNAS15311-E	N	N	N	N	Y		
KNAS15312-E	N	Y	N	N	Y		
KNAS15313-E	N	Y	N	N	N		
KNAS15400-I	N	N	N	N	Y		
KNAS15401-E	N	N	N	N	Y		
KNAS15403-E	N	N	N	N	Y		
KNAS15404-E	N	N	N	N	Y		
KNAS15405-I	N	N	N	N	Y		
KNAS15500-I	N	N	N	N	Y		
KNAS15501-E	N	Y	N	N	Y		
KNAS15502-E	N	Y	N	N	Y		
KNAS15503-E	N	Y	N	N	Y		
KNAS15504-E	N	Y	N	N	Y		
KNAS15505-E	N	Y	N	N	Y		
KNAS15507-E	N	Y	N	N	Y		

ID	Message destination						
	Audit log	On screen	Event log	Integrated trace log	Message log		
KNAS15508-E	N	Y	N	N	Y		
KNAS15509-E	N	Y	N	N	Y		
KNAS15510-E	N	Y	N	N	Y		
KNAS15511-E	N	Y	N	N	Y		
KNAS15512-E	N	Y	N	N	Y		
KNAS15513-E	N	Y	N	N	Y		
KNAS15600-I	N	N	N	N	Y		
KNAS15601-E	N	Y	N	N	Y		
KNAS15602-E	N	Y	N	N	Y		
KNAS15603-E	N	Y	N	N	Y		
KNAS15604-E	N	Y	N	N	Y		
KNAS15605-E	N	Y	N	N	Y		
KNAS15607-E	N	Y	N	N	Y		
KNAS15608-E	N	Y	N	N	Y		
KNAS15609-E	N	Y	N	N	Y		
KNAS15610-E	N	Y	N	N	Y		
KNAS15712-I	N	N	N	N	Y		
KNAS15713-E	N	N	N	N	Y		
KNAS15714-E	N	N	N	N	Y		
KNAS15715-E	N	N	N	N	Y		
KNAS15716-E	N	Y	N	N	Y		
KNAS15717-E	N	Y	N	N	Y		
KNAS15718-E	N	Y	N	N	Y		
KNAS15719-W	N	Y	N	N	Y		
KNAS15720-E	N	Y	N	N	Y		
KNAS15721-E	N	Y	N	N	Y		
KNAS15722-E	N	Y	N	N	Y		
KNAS15723-E	N	Y	N	N	Y		
KNAS15724-E	N	Y	N	N	Y		
KNAS15725-W	N	Y	N	N	Y		
KNAS15810-I	N	N	N	N	Y		
KNAS15811-E	N	N	N	N	Y		
KNAS15812-E	N	N	N	N	Y		
KNAS15813-E	N	N	N	N	Y		

ID	Message destination						
	Audit log	On screen	Event log	Integrated trace log	Message log		
KNAS15814-E	N	Y	N	N	Y		
KNAS15815-E	N	Y	N	N	Y		
KNAS15816-W	N	Y	N	N	Y		
KNAS15817-E	N	Y	N	N	Y		
KNAS15818-E	N	Y	N	N	Y		
KNAS15819-E	N	Y	N	N	Y		
KNAS15908-E	N	N	N	N	Y		
KNAS15909-E	N	N	N	N	Y		
KNAS15910-E	N	N	N	N	Y		
KNAS15911-E	N	Y	N	N	Y		
KNAS15912-E	N	Y	N	N	Y		
KNAS15913-E	N	Y	N	N	Y		
KNAS15914-E	N	Y	N	N	Y		
KNAS15915-E	N	Y	N	N	Y		
KNAS15916-E	N	N	N	N	Y		
KNAS16000-E	N	Y	N	N	Y		
KNAS16001-E	N	Y	N	N	Y		
KNAS16002-E	N	Y	N	N	Y		
KNAS16003-E	N	Y	N	N	Y		
KNAS16004-E	N	Y	N	N	Y		
KNAS16005-E	N	Y	N	N	Y		
KNAS16100-I	N	N	N	N	Y		
KNAS16101-E	N	Y	N	N	Y		
KNAS16102-E	N	Y	N	N	Y		
KNAS16103-E	N	Y	N	N	Y		
KNAS16104-E	N	Y	N	N	Y		
KNAS16105-E	N	Y	N	N	Y		
KNAS16107-E	N	Y	N	N	Y		
KNAS16108-E	N	Y	N	N	Y		
KNAS16109-E	N	Y	N	N	Y		
KNAS16110-E	N	Y	N	N	Y		
KNAS16111-E	N	Y	N	N	Y		
KNAS16200-I	N	N	N	N	Y		
KNAS16201-E	N	Y	N	N	Y		

ID	Message destination						
	Audit log	On screen	Event log	Integrated trace log	Message log		
KNAS16202-E	N	Y	N	N	Y		
KNAS16203-E	N	Y	N	N	Y		
KNAS16204-E	N	Y	N	N	Y		
KNAS16205-E	N	Y	N	N	Y		
KNAS16206-E	N	Y	N	N	Y		
KNAS16207-E	N	Y	N	N	Y		
KNAS16300-I	N	N	N	N	Y		
KNAS16301-E	N	Y	N	N	Y		
KNAS16302-E	N	N	N	N	Y		
KNAS16303-E	N	N	N	N	Y		
KNAS16304-E	N	N	N	N	Y		
KNAS16305-E	N	N	N	N	Y		
KNAS16306-E	N	N	N	N	Y		
KNAS16307-E	N	N	N	N	Y		
KNAS16308-E	N	Y	N	N	Y		
KNAS16309-E	N	Y	N	N	Y		
KNAS16310-E	N	Y	N	N	Y		
KNAS16311-E	N	Y	N	N	Y		
KNAS16312-E	N	Y	N	N	Y		
KNAS16314-E	N	Y	N	N	Y		
KNAS16315-E	N	N	N	N	Y		
KNAS16316-E	N	N	N	N	Y		
KNAS16317-E	N	N	N	N	Y		
KNAS16318-E	N	Y	N	N	Y		
KNAS16319-E	N	Y	N	N	Y		
KNAS16320-E	N	Y	N	N	Y		
KNAS16321-E	N	Y	N	N	Y		
KNAS16322-E	N	Y	N	N	Y		
KNAS16323-W	N	N	N	N	Y		
KNAS16324-E	N	N	N	N	Y		
KNAS16325-E	N	Y	N	N	Y		
KNAS16400-I	N	N	N	N	Y		
KNAS16401-E	N	Y	N	N	Y		
KNAS16402-E	N	N	N	N	Y		

ID	Message destination						
	Audit log	On screen	Event log	Integrated trace log	Message log		
KNAS16403-E	N	N	N	N	Y		
KNAS16404-E	N	N	N	N	Y		
KNAS16405-E	N	N	N	N	Y		
KNAS16407-E	N	N	N	N	Y		
KNAS16408-E	N	Y	N	N	Y		
KNAS16409-E	N	Y	N	N	Y		
KNAS16410-E	N	Y	N	N	Y		
KNAS16411-E	N	Y	N	N	Y		
KNAS16412-E	N	Y	N	N	Y		
KNAS16414-W	N	N	N	N	Y		
KNAS16415-E	N	Y	N	N	Y		
KNAS16416-E	N	N	N	N	Y		
KNAS16417-E	N	N	N	N	Y		
KNAS16418-E	N	Y	N	N	Y		
KNAS16419-W	Y	Y	N	N	Y		
KNAS16420-E	N	N	N	N	Y		
KNAS16421-I	N	N	N	N	Y		
KNAS16422-E	N	Y	N	N	Y		
KNAS16423-E	N	Y	N	N	Y		
KNAS16424-E	N	Y	N	N	Y		
KNAS16425-E	N	N	N	N	Y		
KNAS16426-E	N	N	N	N	Y		
KNAS16427-E	N	N	N	N	Y		
KNAS16500-E	N	Y	N	N	Y		
KNAS16501-E	N	Y	N	N	Y		
KNAS16502-E	N	Y	N	N	Y		
KNAS16503-E	N	Y	N	N	Y		
KNAS16504-E	N	Y	N	N	Y		
KNAS16600-E	N	Y	N	N	Y		
KNAS16601-E	N	Y	N	N	Y		
KNAS16602-E	N	N	N	N	Y		
KNAS16603-E	N	Y	N	N	Y		
KNAS16700-E	N	Y	N	N	Y		
KNAS16701-E	N	Y	N	N	Y		

ID	Message destination						
	Audit log	On screen	Event log	Integrated trace log	Message log		
KNAS16702-E	N	Y	N	N	Y		
KNAS16703-E	N	Y	N	N	Y		
KNAS16800-E	N	Y	N	N	Y		
KNAS16801-E	N	Y	N	N	Y		
KNAS16802-E	N	Y	N	N	Y		
KNAS16803-E	N	Y	N	N	Y		
KNAS16804-E	N	Y	N	N	Y		
KNAS16805-E	N	Y	N	N	Y		
KNAS16900-E	N	Y	N	N	Y		
KNAS16901-E	N	Y	N	N	Y		
KNAS16902-E	N	N	N	N	Y		
KNAS16903-E	N	Y	N	N	Y		
KNAS17000-E	N	Y	N	N	Y		
KNAS17001-E	N	Y	N	N	Y		
KNAS17002-E	N	N	N	N	Y		
KNAS17003-E	N	Y	N	N	Y		
KNAS17300-E	N	Y	N	N	Y		
KNAS17301-E	N	Y	N	N	Y		
KNAS17302-E	N	Y	N	N	Y		
KNAS17303-E	N	Y	N	N	Y		
KNAS17304-E	N	Y	N	N	Y		
KNAS17400-E	N	Y	N	N	Y		
KNAS17401-E	N	Y	N	N	Y		
KNAS17402-E	N	Y	N	N	Y		
KNAS17403-E	N	Y	N	N	Y		
KNAS17404-E	N	Y	N	N	Y		
KNAS17500-I	N	N	N	N	Y		
KNAS17501-E	N	Y	N	N	Y		
KNAS17502-E	N	Y	N	N	Y		
KNAS17503-E	N	Y	N	N	Y		
KNAS17504-E	N	Y	N	N	Y		
KNAS17505-E	N	Y	N	N	Y		
KNAS17540-E	N	Y	N	N	Y		
KNAS17541-E	N	Y	N	N	Y		

ID	Message destination						
	Audit log	On screen	Event log	Integrated trace log	Message log		
KNAS17542-E	N	Y	N	N	Y		
KNAS17543-E	N	Y	N	N	Y		
KNAS17561-E	N	Y	N	N	Y		
KNAS17562-E	N	Y	N	N	Y		
KNAS17564-E	N	Y	N	N	Y		
KNAS17565-E	N	Y	N	N	Y		
KNAS17566-E	N	Y	N	N	Y		
KNAS17567-E	N	Y	N	N	Y		
KNAS17568-E	N	Y	N	N	Y		
KNAS17569-E	N	Y	N	N	Y		
KNAS17570-E	N	Y	N	N	Y		
KNAS17571-E	N	Y	N	N	Y		
KNAS17572-E	N	Y	N	N	Y		
KNAS17573-E	N	Y	N	N	Y		
KNAS17574-E	N	Y	N	N	Y		
KNAS17575-I	N	N	N	N	Y		
KNAS17576-E	N	Y	N	N	Y		
KNAS17577-E	N	Y	N	N	Y		
KNAS17578-E	N	Y	N	N	Y		
KNAS17579-E	N	Y	N	N	Y		
KNAS17580-E	N	Y	N	N	Y		
KNAS17581-E	N	Y	N	N	Y		
KNAS17582-E	N	Y	N	N	Y		
KNAS17583-I	N	N	N	N	Y		
KNAS17584-E	N	Y	N	N	Y		
KNAS17585-E	N	Y	N	N	Y		
KNAS17586-E	N	Y	N	N	Y		
KNAS17587-E	N	Y	N	N	Y		
KNAS17588-E	N	Y	N	N	Y		
KNAS17589-E	N	Y	N	N	Y		
KNAS17590-E	N	Y	N	N	Y		
KNAS17591-I	N	N	N	N	Y		
KNAS17592-E	N	Y	N	N	Y		
KNAS17593-E	N	Y	N	N	Y		

ID	Message destination						
	Audit log	On screen	Event log	Integrated trace log	Message log		
KNAS17594-E	N	Y	N	N	Y		
KNAS17595-E	N	Y	N	N	Y		
KNAS17596-E	N	Y	N	N	Y		
KNAS17597-E	N	Y	N	N	Y		
KNAS17598-E	N	Y	N	N	Y		
KNAS17600-I	N	N	N	N	Y		
KNAS17601-E	N	Y	N	N	Y		
KNAS17602-E	N	Y	N	N	Y		
KNAS17603-E	N	Y	N	N	Y		
KNAS17604-E	N	Y	N	N	Y		
KNAS17605-E	N	Y	N	N	Y		
KNAS17606-E	N	Y	N	N	Y		
KNAS17607-E	N	Y	N	N	Y		
KNAS17608-E	N	Y	N	N	Y		
KNAS17609-E	N	Y	N	N	Y		
KNAS17610-E	N	Y	N	N	Y		
KNAS17611-E	N	Y	N	N	Y		
KNAS17612-E	N	Y	N	N	Y		
KNAS17700-I	N	N	N	N	Y		
KNAS17701-E	N	Y	N	N	Y		
KNAS17702-E	N	Y	N	N	Y		
KNAS17703-E	N	Y	N	N	Y		
KNAS17704-E	N	Y	N	N	Y		
KNAS17705-E	N	Y	N	N	Y		
KNAS17706-E	N	Y	N	N	Y		
KNAS17707-E	N	Y	N	N	Y		
KNAS17708-E	N	Y	N	N	Y		
KNAS17709-E	N	Y	N	N	Y		
KNAS17710-E	N	Y	N	N	Y		
KNAS17800-E	N	Y	N	N	Y		
KNAS17801-I	N	Y	N	N	N		
KNAS17802-E	N	Y	N	N	Y		
KNAS17803-E	N	Y	N	N	Y		
KNAS17804-I	N	Y	N	N	N		

ID	Message destination						
	Audit log	On screen	Event log	Integrated trace log	Message log		
KNAS17805-W	N	Y	N	N	Y		
KNAS17806-E	N	Y	N	N	Y		
KNAS17807-E	N	N	N	N	Y		
KNAS17808-E	N	Y	N	N	Y		
KNAS18100-I	N	N	N	N	Y		
KNAS18101-E	N	Y	N	N	Y		
KNAS18102-E	N	Y	N	N	Y		
KNAS18103-E	N	Y	N	N	Y		
KNAS18104-E	N	Y	N	N	Y		
KNAS18105-E	N	Y	N	N	Y		
KNAS18106-E	N	Y	N	N	Y		
KNAS18107-E	N	Y	N	N	Y		
KNAS18108-E	N	Y	N	N	Y		
KNAS18109-E	N	Y	N	N	Y		
KNAS18110-E	N	Y	N	N	Y		
KNAS18111-E	N	Y	N	N	Y		
KNAS18200-E	N	Y	N	N	Y		
KNAS18201-E	N	Y	N	N	Y		
KNAS18202-E	N	Y	N	N	Y		
KNAS18203-E	N	Y	N	N	Y		
KNAS18300-I	N	N	N	N	Y		
KNAS18301-E	N	Y	N	N	Y		
KNAS18302-E	N	Y	N	N	Y		
KNAS18303-E	N	Y	N	N	Y		
KNAS18304-E	N	Y	N	N	Y		
KNAS18305-E	N	Y	N	N	Y		
KNAS18306-E	N	Y	N	N	Y		
KNAS18307-E	N	Y	N	N	Y		
KNAS18308-E	N	Y	N	N	Y		
KNAS18309-E	N	Y	N	N	Y		
KNAS18310-E	N	Y	N	N	Y		
KNAS18311-E	N	Y	N	N	Y		
KNAS18400-I	N	N	N	N	Y		
KNAS18401-E	N	Y	N	N	Y		

ID	Message destination						
	Audit log	On screen	Event log	Integrated trace log	Message log		
KNAS18402-E	N	Y	N	N	Y		
KNAS18403-E	N	Y	N	N	Y		
KNAS18404-E	N	Y	N	N	Y		
KNAS18405-E	N	Y	N	N	Y		
KNAS18406-E	N	Y	N	N	Y		
KNAS18407-E	N	Y	N	N	Y		
KNAS18408-E	N	Y	N	N	Y		
KNAS18409-E	N	Y	N	N	Y		
KNAS18410-W	N	N	N	N	Y		
KNAS18411-E	N	Y	N	N	Y		
KNAS18412-I	N	N	N	N	Y		
KNAS18413-E	N	Y	N	N	Y		
KNAS18414-E	N	Y	N	N	Y		
KNAS18415-E	N	Y	N	N	Y		
KNAS18416-E	N	Y	N	N	Y		
KNAS18417-E	N	Y	N	N	Y		
KNAS18418-E	N	Y	N	N	Y		
KNAS18419-E	N	Y	N	N	Y		
KNAS18420-I	N	N	N	N	Y		
KNAS18421-E	N	Y	N	N	Y		
KNAS18422-E	N	Y	N	N	Y		
KNAS18423-E	N	Y	N	N	Y		
KNAS18424-E	N	Y	N	N	Y		
KNAS18425-E	N	Y	N	N	Y		
KNAS18426-E	N	Y	N	N	Y		
KNAS18427-E	N	Y	N	N	Y		
KNAS18428-E	N	Y	N	N	Y		
KNAS18429-E	N	Y	N	N	Y		
KNAS18430-E	N	Y	N	N	Y		
KNAS18431-E	N	Y	N	N	Y		
KNAS18432-E	N	Y	N	N	Y		
KNAS18433-E	N	Y	N	N	Y		
KNAS18434-E	N	Y	N	N	Y		
KNAS18435-E	N	Y	N	N	Y		

ID	Message destination						
	Audit log	On screen	Event log	Integrated trace log	Message log		
KNAS18436-E	N	Y	N	N	Y		
KNAS18437-E	N	Y	N	N	Y		
KNAS18438-E	N	Y	N	N	Y		
KNAS18439-E	N	Y	N	N	Y		
KNAS18440-E	N	Y	N	N	Y		
KNAS18441-E	N	Y	N	N	Y		
KNAS18442-E	N	Y	N	N	Y		
KNAS18443-E	N	Y	N	N	Y		
KNAS18444-E	N	Y	N	N	Y		
KNAS18445-E	N	Y	N	N	Y		
KNAS18446-E	N	Y	N	N	Y		
KNAS18447-E	N	Y	N	N	Y		
KNAS18448-E	N	Y	N	N	Y		
KNAS18449-E	N	Y	N	N	Y		
KNAS18450-E	N	Y	N	N	Y		
KNAS18451-E	N	Y	N	N	Y		
KNAS18452-E	N	Y	N	N	Y		
KNAS18453-E	N	Y	N	N	Y		
KNAS18500-E	N	Y	N	N	Y		
KNAS18501-E	N	Y	N	N	Y		
KNAS18502-E	N	N	N	N	Y		
KNAS18503-E	N	Y	N	N	Y		
KNAS18600-E	N	Y	N	N	Y		
KNAS18601-E	N	Y	N	N	Y		
KNAS18602-E	N	Y	N	N	Y		
KNAS18610-E	N	Y	N	N	Y		
KNAS18611-E	N	Y	N	N	Y		
KNAS18612-E	N	Y	N	N	Y		
KNAS18613-E	N	Y	N	N	Y		
KNAS18700-E	N	Y	N	N	Y		
KNAS18701-E	N	Y	N	N	Y		
KNAS18702-E	N	Y	N	N	Y		
KNAS18703-E	N	Y	N	N	Y		
KNAS18704-E	N	Y	N	N	Y		

ID	Message destination						
	Audit log	On screen	Event log	Integrated trace log	Message log		
KNAS18800-E	N	Y	N	N	Y		
KNAS18801-E	N	Y	N	N	Y		
KNAS18802-E	N	Y	N	N	Y		
KNAS18803-E	N	Y	N	N	Y		
KNAS18804-E	N	Y	N	N	Y		
KNAS18805-E	N	Y	N	N	Y		
KNAS18900-I	N	N	N	N	Y		
KNAS18901-E	N	Y	N	N	Y		
KNAS18902-E	N	Y	N	N	Y		
KNAS18903-E	N	Y	N	N	Y		
KNAS18904-E	N	Y	N	N	Y		
KNAS18905-E	N	Y	N	N	Y		
KNAS18906-E	N	Y	N	N	Y		
KNAS18907-E	N	Y	N	N	Y		
KNAS18908-E	N	Y	N	N	Y		
KNAS18909-E	N	Y	N	N	Y		
KNAS30022-I	N	N	N	N	Y		
KNAS30023-I	N	N	N	N	Y		
KNAS30024-E	N	N	N	N	Y		
KNAS30025-I	N	N	N	N	Y		
KNAS30026-E	N	N	N	N	Y		
KNAS32003-W	N	N	N	N	Y		
KNAS32004-W	N	N	N	N	Y		
KNAS32007-W	N	N	N	N	Y		
KNAS32017-I	N	N	N	N	Y		
KNAS32018-I	N	N	N	N	Y		
KNAS32019-I	N	N	N	N	Y		
KNAS32020-I	N	N	N	N	Y		
KNAS32021-E	N	N	N	N	Y		
KNAS32022-W	N	N	N	N	Y		
KNAS32023-I	N	N	N	N	Y		
KNAS32024-I	N	N	N	N	Y		
KNAS32025-I	N	N	N	N	Y		
KNAS32026-I	N	N	N	N	Y		

ID	Message destination						
	Audit log	On screen	Event log	Integrated trace log	Message log		
KNAS32027-I	N	N	N	N	Y		
KNAS32028-W	N	N	N	N	Y		
KNAS34000-W	N	N	N	N	N		
KNAS34001-E	N	N	N	N	N		
KNAS34002-W	N	N	N	N	N		
KNAS34003-E	N	N	N	N	Y		
KNAS34004-W	N	N	N	N	Y		
KNAS34005-W	N	N	N	N	Y		
KNAS34006-E	N	N	N	N	Y		
KNAS34007-I	N	N	N	N	Y		
KNAS34008-E	N	N	N	N	Y		
KNAS34009-W	N	N	N	N	Y		
KNAS34010-W	N	N	N	N	Y		
KNAS50100-W	N	N	N	N	Y		
KNAS50102-W	N	N	N	N	Y		
KNAS50103-E	N	N	N	N	Y		
KNAS50104-E	N	N	N	N	Y		
KNAS50105-E	N	N	N	N	Y		
KNAS50106-E	N	N	N	N	Y		
KNAS50107-E	N	N	N	N	Y		
KNAS50108-E	N	N	N	N	Y		
KNAS50109-E	N	N	N	N	Y		
KNAS50110-E	N	N	N	N	Y		
KNAS50111-E	N	N	N	N	Y		
KNAS50112-E	N	N	N	N	Y		
KNAS50113-E	N	N	N	N	Y		
KNAS50200-I	N	N	N	N	Y		
KNAS50201-E	N	N	N	N	Y		
KNAS50202-E	N	N	N	N	Y		
KNAS50204-E	N	N	N	N	Y		
KNAS50205-E	N	N	N	N	Y		
KNAS50206-I	N	N	N	N	Y		
KNAS50207-E	N	N	N	N	Y		
KNAS50220-I	N	N	N	N	Y		

ID	Message destination						
	Audit log	On screen	Event log	Integrated trace log	Message log		
KNAS50221-E	N	N	N	N	Y		
KNAS50222-E	N	N	N	N	Y		
KNAS50224-E	N	N	N	N	Y		
KNAS50225-E	N	N	N	N	Y		
KNAS50226-I	N	N	N	N	Y		
KNAS50227-E	N	N	N	N	Y		
KNAS50241-E	N	N	N	N	Y		
KNAS50242-E	N	N	N	N	Y		
KNAS50243-E	N	N	N	N	Y		
KNAS50244-E	N	N	N	N	Y		
KNAS50245-E	N	N	N	N	Y		
KNAS50246-E	N	N	N	N	Y		
KNAS50247-E	N	N	N	N	Y		
KNAS70007-E	N	N	N	N	Y		
KNAS70008-E	N	N	N	N	Y		
KNAS90000-E	N	N	N	N	N		
KNAS90001-E	N	N	N	N	N		
KNAS90002-E	N	N	N	N	N		
KNAS90003-E	N	N	N	N	N		
KNAS90004-E	N	N	N	N	N		
KNAS90005-E	N	N	N	N	N		
KNAS90006-E	N	N	N	N	N		
KNAS90007-E	N	N	N	N	N		
KNAS90008-E	N	N	N	N	N		
KNAS90009-E	N	N	N	N	N		
KNAS90010-E	N	N	N	N	N		
KNAS90011-I	N	N	N	N	N		
KNAS90012-I	N	N	N	N	N		
KNAS90013-E	N	N	N	N	N		
KNAS90014-E	N	N	N	N	N		
KNAS91000-I	N	N	N	N	Y		
KNAS91001-I	N	N	N	N	Y		
KNAS91002-I	N	N	N	N	Y		
KNAS91020-E	N	N	N	N	Y		

ID	Message destination						
	Audit log	On screen	Event log	Integrated trace log	Message log		
KNAS91021-E	N	N	N	N	Y		
KNAS91022-E	N	N	N	N	Y		
KNAS91023-E	N	N	N	N	Y		
KNAS91024-E	N	N	N	N	Y		
KNAS91025-E	N	N	N	N	Y		
KNAS91026-E	N	N	N	N	Y		
KNAS91027-E	N	N	N	N	Y		
KNAS91028-E	N	N	N	N	Y		
KNAS91029-E	N	N	N	N	Y		
KNAS91030-E	N	N	N	N	Y		
KNAS91031-E	N	N	N	N	N		
KNAS91032-E	N	N	N	N	Y		
KNAS91033-E	N	N	N	N	Y		
KNAS91034-E	N	N	N	N	Y		
KNAS91035-E	N	N	N	N	Y		
KNAS91036-E	N	N	N	N	Y		
KNAS91100-I	N	N	N	N	N		
KNAS91120-E	N	N	N	N	Y		
KNAS91121-E	N	N	N	N	Y		
KNAS91200-I	N	N	N	N	N		
KNAS91220-E	N	N	N	N	Y		
KNAS91221-E	N	N	N	N	Y		
KNAS91223-E	N	N	N	N	Y		
KNAS91224-E	N	N	N	N	Y		
KNAS91225-E	N	N	N	N	Y		
KNAS91226-E	N	N	N	N	Y		
KNAS91227-E	N	N	N	N	Y		
KNAS91228-E	N	N	N	N	Y		
KNAS91300-I	N	N	N	N	N		
KNAS91301-E	N	N	N	N	Y		
KNAS91400-I	N	N	N	N	N		
KNAS91500-I	N	N	N	N	N		
KNAS91501-E	N	N	N	N	Y		
KNAS91502-E	N	N	N	Y	N		

ID	Message destination						
	Audit log	On screen	Event log	Integrated trace log	Message log		
KNAS91503-E	N	N	N	Y	N		
KNAS91504-E	N	N	N	Y	N		
KNAS91505-E	N	N	N	Y	N		
KNAS91506-E	N	Ν	N	Y	N		
KNAS91507-E	N	Ν	N	Y	N		
KNAS91508-E	N	Ν	N	Y	N		
KNAS91509-E	N	Ν	N	Y	N		
KNAS91600-I	N	N	N	N	N		
KNAS91700-I	N	Ν	N	N	N		
KNAS99000-I	N	N	N	N	N		
KNAS99001-E	N	Ν	N	Ν	N		
KNAS99002-E	N	Ν	N	N	N		
KNAS99003-E	N	Ν	N	Ν	N		
KNAS99013-E	N	N	N	N	N		
KNAS99050-I	N	Ν	N	Ν	N		
KNAS99051-E	N	N	N	N	N		
KNAS99052-E	N	Ν	N	Ν	N		
KNAS99053-E	N	N	N	N	N		
KNAS99054-E	N	Ν	N	Ν	N		
KNAS99055-W	N	N	N	N	N		
KNAS99056-E	N	N	N	N	N		
KNAS99057-E	N	N	N	N	N		
KNAS99058-W	N	N	N	N	N		
KNAS99059-E	N	N	N	N	N		
KNAS99060-E	N	Ν	N	N	N		
KNAS99061-W	N	N	N	N	N		
KNAS99062-W	N	N	N	N	N		
KNAS99063-W	N	N	N	N	N		

Legend:

Y: Message is output.

N: Message is not output.

## 11.3 Messages

## KNAS02000-I

SLM - aa....aa has started.

aa....aa: Product category (Manager or UR)

## KNAS02001-I

SLM - *aa....aa* has ended.

aa....aa: Product category (Manager or UR)

## KNAS02002-E

SLM - aa....aa has ended abnormally.

aa....aa: Product category (Manager or UR)

(S)

Suspends processing.

#### (O)

Collect data, and then contact a system administrator. For details about collecting data, see 7.1.6 Collecting the data needed for determining the cause of a problem.

## KNAS02003-I

The service status of SLM - aa....aa was set to "Starting".

aa....aa: Product category (Manager or UR)

## KNAS02004-I

The service status of SLM - aa....aa was set to "Running".

aa....aa: Product category (Manager or UR)

## KNAS02005-I

The service status of SLM - aa....aa was set to "Stopping"

aa....aa: Product category (Manager or UR)

## KNAS02006-I

The service status of SLM - aa....aa was set to "Stopped".

aa....aa: Product category (Manager or UR)

#### KNAS02007-I

An SLM - aa....aa service has started.

aa....aa: Product category (Manager)

## KNAS02008-I

An SLM - aa....aa service has stopped.

aa....aa: Product category (Manager)

## KNAS02009-E

An SLM - aa....aa service has not started due to an error.

aa....aa: Product category (Manager)

#### Description

Because an error has occurred in SLM - Manager, the services that comprise SLM - Manager have stopped.

(S)

Suspends processing.

#### (O)

Restart the services that comprise SLM - Manager. If this does not resolve the problem, contact a system administrator.

## KNAS02010-E

SLM - aa....aa has expired.

11. Messages

JP1/Service Level Management Description

aa....aa: Product category (Manager or UR)

## Description

The trial version has expired.

## (S)

Suspends processing.

## (O)

Please use the full product version.

## KNAS02025-E

Shared memory access has failed.

## Description

Shared memory has not been created yet.

## (S)

Suspends processing.

## (0)

Contact a system administrator.

## KNAS02035-E

An SLM - *aa....aa* process was killed. *bb....bb=cc....cc* 

aa....aa: Product category (Manager or UR)

bb....bb: GetExitCodeProcess

cc....cc: Error code

#### (S)

Suspends processing.

## (O)

Check the integrated trace log and message log, take any necessary corrective action, and then restart the SLM - Manager or SLM - UR services. Contact a system administrator if the problem reoccurs.

## KNAS02036-E

Process recovery for SLM - aa....aa has failed.

aa....aa: Product category (Manager or UR)

JP1/Service Level Management Description

(S)

Suspends processing.

(O)

Restart the SLM - Manager or SLM - UR service.

## KNAS02043-I

Monitoring of an SLM - aa....aa process will be started.

aa....aa: Product category (Manager or UR)

## KNAS02089-I

The process was restarted. process name=aa....aa

aa....aa: Process name (jslmmpcollect, jslmmengine, jslmmUR, jslmmRMI, cjstartweb, jslmuengine, jslmuUR, jslmuRMI, jslmmdao, or jslmmadaptor)

## KNAS02090-I

The system will wait for bb....bb seconds for the SLM - aa....aa service to start.

aa....aa: Product category (Manager or UR)

bb....bb: Wait time (seconds)

## KNAS02091-E

The starting of a SLM - aa....aa service has failed, as no embedded database was started.

aa....aa: Product category (Manager)

## Description

- Non-cluster operation: The SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition JL0) is not running.
- Cluster operation:

The SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0) or SLM - Manager DB Cluster Service (service name: HiRDBClusterService\_JL0) has not been started.

(S)

Suspends processing.

(0)

Start the SLM - Manager service **SLM - Manager DB Service**. If you are running in a cluster system, also start the SLM - Manager service **SLM - Manager DB Cluster Service**.

## KNAS02092-W

A SLM - aa....aa service was stopped.

aa....aa: Product category (Manager or UR)

## Description

```
There was a stop request during start processing of the SLM - Manager service SLM - Manager Service (service name: JP1_ITSLM_MGR_Service) or the SLM - UR service SLM - User Response Service (service name: JP1_ITSLM_UR_Service).
```

(S)

Suspends processing.

(O)

Restart the SLM - Manager or SLM - UR service.

## KNAS02094-E

An error occurred during the checking of the product information registration file.

(S)

Suspends processing.

(O)

Collect data, and then contact a system administrator.

For details about collecting data, see 7.1.6 Collecting the data needed for determining the cause of a problem.

## KNAS02095-E

A process stopped. process name=aa....aa

aa....aa: Process name (jslmmpcollect, jslmmengine, jslmmUR, jslmmRMI, cjstartweb, jslmuengine, jslmuUR, jslmuRMI, jslmmdao, or jslmmadaptor)

## Description

The process terminated abnormally.

(S)

Suspends processing.

## (0)

Restart the SLM - Manager or SLM - UR service.

## KNAS02099-E

The stopping of a process timed out. process name=aa....aa

aa....aa: Process name(jslmmpcollect,jslmmengine,jslmmUR,cjstartweb,jslmuengine,jslmuUR, jslmmdao, or jslmmadaptor)

#### Description

Stop processing for the aa....aa process timed out.

(S)

Suspends processing.

#### (O)

Restart the SLM - Manager or SLM - UR service.

## KNAS02102-I

The starting of a process is complete. process name=aa....aa

```
aa....aa: Process name (jslmmpcollect, jslmmengine, jslmmRMI, jslmmUR, cjstartweb,
jslmuengine, jslmuRMI, jslmuUR, jslmmdao, or jslmmadaptor)
```

## KNAS02118-E

An insufficient memory error occurred while attempting to allocate aa....aa bytes of memory.

aa....aa: Number of bytes

#### (S)

Suspends processing.

#### (O)

Exit SLM - Manager or SLM - UR, and then restart after allocating sufficient memory. Contact a system administrator if the problem reoccurs.

## KNAS02119-E

The command process could not be started. command=*aa....aa*, *bb....bb=cc....cc* 

## aa....aa: Command

#### bb....bb: GetLastError

#### cc....cc: Error code

#### (S)

Suspends processing.

#### (O)

Uninstall SLM - Manager, and then repeat the installation and setup. Contact a system administrator if the problem reoccurs.

#### KNAS02120-E

The command process ended due to an error. command=aa....aa, bb....bb=cc....cc

#### aa....aa: Command

bb....bb: GetLastError

#### cc....cc: Error code

#### (S)

Suspends processing.

#### (O)

Check the subsequent message. Or, run unsetup on SLM - Manager, and then run setup again. Contact a system administrator if the problem reoccurs.

## KNAS02121-E

Preparation for environment information (aa....aa) acquisition failed. bb....bb=cc....cc

aa....aa: ProgramName (registry name)

*bb....bb*: errno

cc....cc: Error code

## (S)

Suspends processing.

## (0)

Run unsetup on SLM - Manager or SLM - UR, and then run setup again. Contact a system administrator if the problem reoccurs.

#### KNAS02125-W

System Error occurred while starting SLM - aa....aa service.

## Description

An attempt to initialize the log failed.

(S)

Continues processing.

## (0)

Collect data, and then contact a system administrator.

For details about collecting data, see 7.1.6 Collecting the data needed for determining the cause of a problem.

## KNAS02126-W

A default value was assumed because the system failed to obtain the set value from a properties file. Check the set value. If the value is changed, restart the SLM - *aa....aa* service. properties file name=*bb....bb*, property key=*cc....cc* 

aa....aa: Product category (Manager or UR)

bb....bb: Name of the properties file (system definition file) whose default values were assumed

cc....cc: Name of the property key (system definition file property) whose default value was assumed

## (S)

Uses the default value due to the failure to obtain a setting in the system definition file.

(O)

Check the settings in the system definition file. Or, check the integrated trace log. For details about the integrated trace log, see 7.2.3 Integrated trace logs.

If you change the default value that was assumed, restart the SLM - Manager or SLM - UR service that was the target of the change.

## KNAS02127-I

The trial version of SLM - aa....aa is starting. number of days for the trial to expire=bb....bb

aa....aa: Product category (Manager or UR)

bb....bb: Number of days remaining until the trial period expires

## KNAS02128-E

An insufficient memory error occurred.

## (S)

Suspends processing.

JP1/Service Level Management Description

## (O)

Exit SLM - Manager or SLM - UR, allocate memory, and then restart. Contact a system administrator if the problem reoccurs.

## KNAS02129-E

The SLM - *aa....aa* runtime environment is not for version *bb....bb*. Complete the setup and then start the SLM - *aa....aa* services.

aa....aa: Product category (Manager or UR)

bb....bb: Version of SLM - aa....aa

#### Description

Setup has not been completed.

#### (S)

Suspends processing.

#### (O)

Stop SLM, complete the setup, and then start SLM again.

## KNAS02133-I

The evaluation version of SLM - aa....aa is starting. Number of days for the evaluation to expire=bb....bb

aa....aa: Product type (Manager, UR)

bb....bb: Number of days remaining until expiration date of evaluation version

#### KNAS03004-E

An error occurred while writing data to the database, following SLM - UR start notification.

## (S)

Suspends processing of writing data into the database for SLM - UR startup notification.

#### (O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0). If this does not resolve the problem, contact a system administrator.

## KNAS03005-E

An error occurred while deleting data from the database, following SLM - UR stop notification.

(S)

Suspends processing of deleting data from the database for SLM - UR stop notification.

(O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

## KNAS03007-E

A communication error occurred between the SLM - UR and the SLM - Manager. destination IP address=*aa....aa*, destination port number=*bb....bb* 

## aa....aa: Destination IP address

## bb....bb: Destination port number

Description

A communication error has occurred for one of the following reasons:

- An attempt to retry startup or termination notification from SLM UR to SLM Manager, in accordance with the announceRetryCount and announceRetryInterval properties in the SLM UR jplitslmur.properties system definition file, failed.
- An attempt to retry communication between SLM Manager and SLM UR, in accordance with the communicationRetryCount and communicationRetryInterval properties in the SLM Manager or SLM UR jplitslm.properties or jplitslmur.properties system definition file, failed.
- (S)

Suspends processing.

## (O)

Make sure SLM - Manager or SLM - UR is running. If it is running, check and, if necessary, revise the following property values specified in a system definition file:

- managerHost (jplitslm.properties or jplitslmur.properties)
- rmiManagerPort(jplitslm.properties or jplitslmur.properties)
- urHost(jplitslmur.properties)
- rmiUrPort (jplitslmur.properties)

## KNAS03016-W

The system will retry the operation, as a communication error has occurred. time to retry (seconds)=aa....aa

aa....aa: Time remaining until retry (in seconds)

(S)

Retries communication processing.

## KNAS03020-E

An error occurred while referencing the services monitored by the SLM - UR. SLM - UR IP address=aa....aa

aa....aa: IP address of SLM - UR

#### Description

An error occurred while referencing an SLM - UR monitored service.

(S)

Suspends data reference processing to the database for SLM - UR startup notification.

#### (O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0). If this does not resolve the problem, contact a system administrator.

## KNAS03022-I

A start notification was sent to the SLM - Manager. SLM - Manager IP address=aa....aa

aa....aa: IP address of the startup notification destination SLM - Manager

## KNAS03023-I

A stop notification was sent to the SLM - Manager. SLM - Manager IP address=aa....aa

aa....aa: IP address of the stop notification destination SLM - Manager

## KNAS03024-I

An SLM - UR start notification was received. SLM - UR IP address=aa....aa

aa....aa: IP address of the startup notification source SLM - UR

## KNAS03025-I

An SLM - UR stop notification was received. SLM - UR IP address=aa....aa

aa....aa: IP address of the stop notification source SLM - UR

## KNAS03026-I

A start notification was canceled, as the system could not confirm the start of SLM - UR. SLM - UR IP address=*aa*....*aa* 

aa....aa: IP address of the SLM - UR whose startup notification was canceled

#### (S)

Continues processing.

## (O)

Check the status of the SLM - UR service.

If the status of the service is stopped, determine whether it was stopped correctly, and then start SLM - UR if necessary.

If the status of the service is started, restart SLM - UR.

## KNAS03027-E

Database update failed while starting the SLM - Manager.

## (S)

Suspends processing.

## (O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

## KNAS03028-E

A communication error occurred while starting the SLM - Manager.

## (S)

Suspends processing.

## (0)

Restart the services that comprise SLM - Manager. If this does not resolve the problem, collect data, and then contact a system administrator.

For details about collecting data, see 7.1.6 Collecting the data needed for determining the cause of a problem.

## KNAS03029-W

Performance data transmission failed, as the system could not connect to the SLM - Manager.

## Description

A retry attempt in accordance with the communicationRetryCount and communicationRetryInterval properties failed because SLM - Manager was in the process of starting or stopping.

The following are possible causes:

- The connection failed because SLM Manager was in the process of starting or stopping.
- There is an error in the value specified for the managerHost or rmiManagerPort property.

## (S)

Suspends processing.

## (0)

Confirm the following:

- SLM Manager is running.
- The values specified for the managerHost and rmiManagerPort properties are correct.

# KNAS03030-E

An attempt to create a thread for the access log function failed.

## Description

An attempt to create a thread for outputting log files failed.

## (S)

Suspends processing.

## (O)

Restart the SLM-UR service.

# KNAS03031-E

An attempt to create the path specified for accessLogFilePath failed. accessLogFilePath=aa....aa

aa....aa: Path specified for accessLogFilePath

## Description

An attempt to create the path specified for accessLogFilePath in the SLM - UR system definition failed.

(S)

Suspends processing.

## (O)

 $Create the path that was specified for \verb"accessLogFilePath" in the SLM - UR system definition, and then restart the SLM - UR service.$ 

# KNAS03032-E

An attempt to create an http folder under the path that has been specified for accessLogFilePath failed. accessLogFilePath=*aa....aa* 

aa....aa: Path specified for accessLogFilePath

## Description

An attempt to create a folder named http under the path that has been specified for accessLogFilePath failed.

(S)

Suspends processing.

(0)

 $Create \ a \ folder \ named \ \texttt{http} \ under \ the \ path \ specified \ for \ \texttt{accessLogFilePath} \ in \ the \ SLM \ - \ UR \ system \ definition, \ and \ then \ restart \ the \ SLM \ - \ UR \ service.$ 

# KNAS03033-W

An attempt to delete the folder for the access log failed. folder name=aa....aa

aa....aa: Name of the folder that was not deleted

## Description

An attempt to delete the folder for the access log failed.

(S)

Continues processing.

(O)

Delete the folder that was not deleted.

# KNAS03034-W

An attempt to change the output destination for the access log file failed. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

Description

An attempt to change the output destination for the access log file failed.

(S)

Continues processing without being able to display access logs for the interval over which the service failed.

(O)

If you want to resume access log output, restart the SLM-UR service.

## KNAS03035-W

An attempt to write to the access log file failed. service group name=*aa....aa*, service name=*bb....bb*, file name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the access log file

#### Description

An attempt to write to the access log file failed.

(S)

Continues processing without being able to display access logs for the interval over which the service failed.

(O)

Make sure the access log file exists and that the write permissions are correct. If this does not resolve the problem, contact a system administrator.

### KNAS03036-I

The access log for the requested time does not exist. service group name=*aa....aa*, service name=*bb....bb*, start time=*cc....cc*, range=*dd....dd* 

aa....aa: Name of the service group to which the monitored service belongs

*bb....bb*: Name of the monitored service

*cc....cc*: Start time

dd....dd: Range (minutes)

Description

The access log for the specified time does not exist. No access logs are displayed.

### KNAS03037-I

The time currently being acquired is included in the requested time. The access log that is being acquired cannot be displayed. service group name=*aa....aa*, service name=*bb....bb*, start time=*cc....cc*, range=*dd....dd* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Start time

dd....dd: Range (minutes)

### Description

The time currently being acquired is included in the specified time. The access logs that are displayed exclude the access log that is currently being acquired.

## KNAS03038-E

The file that links the access log file and services cannot be accessed. file name=aa....aa

aa....aa: Name of the access log file

#### Description

The file that links the access log file and services cannot be accessed.

No access log file could be found for the corresponding service.

### (S)

Suspends processing.

### (0)

Check the read permissions to the paths under the path specified in accessLogFilePath, and then restart the SLM-UR service. If this does not resolve the problem, contact a system administrator.

### KNAS03039-E

The file that links the access log file and services cannot be created. file name=aa....aa

aa....aa: Name of the access log file

#### Description

The file that links the access log file and services cannot be created.

#### (S)

- When SLM UR is starting: Suspends processing.
- When access logs are being output: Continues processing.

#### (O)

Check the write permissions to the paths under the path specified in accessLogFilePath, and then restart the SLM-UR service. If this does not resolve the problem, contact a system administrator.

#### KNAS03040-W

The file that links the access log file and services cannot be updated. file name=aa....aa

#### aa....aa: Name of the access log file

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## Description

The file that links the access log file and services cannot be updated.

(S)

- When SLM UR is starting: Suspends processing.
- When access logs are being output: Continues processing.

## (0)

Check the write permissions to the paths under the path specified in accessLogFilePath. Set or acquire the correct permissions if necessary. If this does not resolve the problem, contact a system administrator.

# KNAS03041-W

An attempt to create the folder for the access log failed. folder name=aa....aa

aa....aa: Name of the folder where the access logs are stored or the folder corresponding to the service

## Description

An attempt to create one of the following folders failed:

- The total milliseconds folder for storing the access log files
- The folder corresponding to the service
- (S)

Continues processing.

## (O)

Check the write permissions to the paths under the path specified in accessLogFilePath. Set or acquire the correct permissions if necessary. If this does not resolve the problem, contact a system administrator.

# KNAS03042-W

Access logs can no longer be output because the thread that outputs access logs was stopped.

## Description

A failure occurred in the thread that outputs access logs to a file and the thread was stopped.

(S)

Continues processing after stopping output of the access logs.

## (O)

If you want to resume access log output, restart the SLM-UR service.

## KNAS03044-E

An attempt to read the access log failed. (access log file name=aa....aa)

aa....aa: Name of the access log file

## Description

An attempt to read the access log failed.

(S)

Continues processing.

### (0)

If the access log file is not required, delete it.

## KNAS03045-W

SLM - Manager (Slave) failed to send SLM-UR startup information to SLM - Manager (Master). (SLM - UR IP address = aa...aa, IP address of SLM - Manager (Slave) = bb...bb, RMI port number of SLM - Manager (Slave) = cc...cc)

aa....aa: IP address of SLM - UR

bb....bb: IP address of the slave instance of SLM - Manager

cc....cc: Port number

#### Description

A communication error occurred.

#### (S)

Continues processing.

(0)

Check the startup status of the master instance of SLM - Manager. If started, check the status of the network and execute the jslmmgrconnect command from the environment of the master instance of SLM - Manager.

## KNAS03046-W

SLM - Manager (Slave) failed to send SLM-UR stopping information to SLM - Manager (Master). (SLM - UR IP address = aa...aa, IP address of SLM - Manager (Slave) = bb....bb, RMI port number of SLM - Manager (Slave) = cc...cc)

aa....aa: IP address of SLM - UR

bb....bb: IP address of the slave instance of SLM - Manager

cc....cc: Port number

#### Description

A communication error occurred.

## (S)

Continues processing.

## (O)

Check the startup status of the master instance of SLM - Manager. If started, check the status of the network and execute the jslmmgrconnect command from the environment of the master instance of SLM - Manager.

# KNAS03503-E

According to a SLM - Manager (Slave) startup notification, an error occurred while data was being written to the database.

## Description

An error occurred while writing data into the database according to a start notification of a slave instance of SLM - Manager.

## (S)

Interrupts the process of writing data into the database according to a start notification of a slave instance of SLM - Manager.

### (O)

Restart the services of SLM - Manager and restart SLM - Manager DB Service. If this does not resolve the problem, contact a system administrator.

# KNAS03504-E

According to a SLM - Manager (Slave) stop notification, an error occurred while data from the database was being deleted.

#### Description

An error occurred while deleting data from the database according to a stop notification of a slave instance of SLM - Manager.

#### (S)

Interrupts the process of deleting data from the database according to a stop notification of a slave instance of SLM - Manager.

#### (O)

Restart the services of SLM - Manager and restart SLM - Manager DB Service. If this does not resolve the problem, contact a system administrator.

# KNAS03505-E

According to a SLM - Manager(Master) startup notification, an error occurred while data was being written to the database.

#### Description

An error occurred while writing data into the database according to a start notification of the master instance of SLM - Manager.

(S)

Interrupts the process of writing data into the database according to a start notification of the master instance of SLM - Manager.

(O)

Restart the services of SLM - Manager and restart SLM - Manager DB Service. If this does not resolve the problem, contact a system administrator.

## KNAS03507-W

The system will try the operation again, because a communication error occurred. (time to retry (seconds) = aa....aa)

aa....aa: Time to retry (seconds)

#### Description

A communication error occurred.

(S)

Retries communication processing.

## KNAS03508-I

A startup notification was sent to SLM - Manager(Master). (SLM - Manager(Master) IP address = *aa....aa*)

aa....aa: IP address of the startup notification destination of the master instance of SLM - Manager

#### Description

A start notification was sent to the master instance of SLM - Manager.

#### KNAS03509-I

A stop notification was sent to SLM - Manager(Master). (SLM - Manager(Master) IP address = aa....aa)

aa....aa: IP address of the stop notification destination master instance of SLM - Manager

#### Description

A stop notification was sent to the master instance of SLM - Manager.

#### KNAS03510-I

An SLM - Manager (Slave) startup notification was received. (SLM - Manager (Slave) IP address = aa....aa)

aa....aa: IP address of the startup notification source slave instance of SLM - Manager

#### Description

A notification indicating that a slave instance of SLM - Manager has started was received.

## KNAS03511-I

An SLM - Manager (Slave) stop notification was received. (SLM - Manager (Slave) IP address = aa....aa)

aa....aa: IP address of the stop notification source slave instance of SLM - Manager

## Description

A notification indicating that a slave instance of SLM - Manager has started was received.

## KNAS03512-I

A startup notification was canceled, because the system could not confirm the startup of SLM - Manager (Slave). (SLM - Manager (Slave) IP address = aa...aa)

aa....aa: IP address of the slave instance of SLM - Manager for which the startup notification has been canceled

### Description

The startup notification of the slave instance of SLM - Manager has been canceled.

#### (S)

Continues processing.

## (O)

Check the status of the service of the slave instance of SLM - Manager. If stopped, determine whether the stopped state is correct. If it is not correct, start the slave instance of SLM - Manager. If the slave instance of SLM - Manager has already been started, restart it.

# KNAS03513-I

A startup notification was sent to SLM - Manager (Slave). (SLM - Manager (Slave) IP address = aa....aa)

aa....aa: IP address of the startup notification destination slave instance SLM - Manager

## Description

A start notification was sent to a slave instance of SLM - Manager.

# KNAS03514-I

An SLM - Manager(Master) startup notification was received. (SLM - Manager(Master) IP address = aa....aa)

aa....aa: IP address of the startup notification source master instance of SLM - Manager

### Description

A master instance of SLM - Manager start notification was received.

## KNAS03515-E

A communication error occurred between SLM - Manager(Master) and SLM - Manager (Slave). (user operate type = aa...aa, destination IP address = bb....bb, destination port number = cc...cc)

aa....aa: Indicator of request

bb....bb: IP address of destination of connection

cc....cc: Number of port at connection destination

### Description

Retried according to communicationMSRetryCount definitions and communicationMSRetryInterval definitions but failed.

### (S)

Interrupts processing.

## (O)

Check that the master instance of SLM - Manager or a slave instance of SLM - Manager has been started. If started, review the specified values of the managerHost definition, rmiManagerPort definition, and masterHost definition.

If a connection still cannot be established upon reviewing the definitions, specify the IP address of a slave instance of SLM - Manager at the destination of connection = *aa....aa* and the RMI communication port number = *bb....bb* and execute the jslmmgrconnect command.

# KNAS03516-E

An error occurred during processing of SLM - Manager. (user operate type = aa...aa, IP address = bb....bb, port number = cc....cc)

aa....aa: Indicator of request

bb....bb: IP address of destination of connection

cc....cc: Number of port at connection destination

## Description

An error occurred in processing within SLM - Manager.

```
(S)
```

Interrupts processing.

## (0)

Check the log of SLM - Manager and take corrective action based on the message.

## KNAS03517-E

A communication error occurred between SLM -Manager(Master) and SLM-Manager (Slave) during processing of a startup or stop notification. (destination IP address = aa...aa, destination port number = bb....bb)

aa....aa: IP address of destination of connection

bb....bb: Number of port at connection destination

Description

Retried according to announceSlaveRetryCount definitions and announceSlaveRetryInterval definitions but failed. Retried according to announceMasterRetryCount definitions and announceMasterRetryInterval definitions but failed.

(S)

Interrupts processing.

### (0)

Check that the master instance of SLM - Manager or a slave instance of SLM - Manager has been started. If started, review the specified values of the managerHost definition, rmiManagerPort definition, and masterHost definition. If a connection still cannot be established upon reviewing the definitions, specify the IP address of a slave instance of SLM - Manager at the destination of connection = aa....aa and the RMI communication port number = bb....bb and execute the jslmmgrconnect command.

## KNAS03518-E

An error occurred during processing of a start or stop notification in SLM - Manager.

#### Description

An error occurred in processing within SLM - Manager.

#### (S)

Interrupts processing.

#### (0)

Check the log of SLM - Manager and take corrective action based on the message.

## KNAS03519-E

An SLM - Manager service could not start due to an error. An inconsistency exists between a manager\_type definition item and a masterHost property. (manager\_type = aa...aa, masterHost = bb....bb)

## aa....aa: Type of SLM - Manager

bb....bb: Host name of the master instance of SLM - Manager

## Description

The service has stopped as an error occurred with SLM - Manager.

## (S)

Interrupts processing.

## (O)

Check the settings for masterHost of the system definition file. When there are not problems, check the value for manager\_type of the options file.

# KNAS05000-E

JP1 event issuance failed. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc*, reason code=*dd....dd* 

- aa....aa: Name of the service group to which the monitored service belongs
- bb....bb: Name of the monitored service
- cc....cc: Name of the monitored target

## dd....dd: Reason code

## Description

The reason codes have the following meanings:

- DUPLICATE: A JP1 extended event attribute is duplicated.
- IOERROR: An I/O error occurred.
- OVERFLOW: A JP1 extended event attribute has exceeded the size limit.
- PARAM: An invalid value was specified for a JP1 event attribute.
- SEQUENCE: The connection with the event server was closed.
- SERVER: The event server is not running, or an error occurred in the event server.

## (S)

SLM - Manager continues processing.

## (0)

Take corrective action based on the reason codes as shown below. To resume notification of JP1 events, stop the monitoring of the monitored service and restart monitoring.

- DUPLICATE, OVERFLOW, PARAM, or SEQUENCE Contact a system administrator.
- IOERROR or SERVER

Confirm that the JP1/Base event server is running. If this does not resolve the problem, contact a system administrator.

# KNAS09000-E

Initialization for log acquisition has failed. method name=*aa....aa*, return code=*bb....bb*, output trace file path=*cc....cc* 

- aa....aa: Name of the method that failed to initialize
- bb....bb: Return code of the method that failed to initialize
- cc....cc: Log file path for the initialization failure (for integrated trace, the character string SysLog)
- (S)
  - The system environment is incorrect, but SLM Manager or SLM UR continues processing.
- (O)

Restart the SLM - Manager or SLM - UR service. If this does not resolve the problem, contact a system administrator.

## KNAS09001-E

OS common log output has failed. message ID=aa....aa

aa....aa: ID of the message that failed to be output to the common OS log

(S)

The system environment is incorrect, but SLM - Manager or SLM - UR continues processing.

(O)

Restart the SLM - Manager or SLM - UR service. If this does not resolve the problem, contact a system administrator.

#### KNAS09002-E

The loading of a properties file has failed. properties file name=aa....aa

aa....aa: Name of the properties file (system definition file) that failed to be read

#### (S)

Terminates processing of SLM - Manager or SLM - UR due to an incorrect system environment.

#### (O)

Confirm that the properties file (system definition file) exists, and that you have read permission for it.

## KNAS09003-E

Property acquisition has failed. properties file name=aa....aa, property key=bb....bb

aa....aa: Name of the failed properties file (system definition file)

*bb....bb*: Name of the failed property key (system definition file property)

#### Description

A required property is not specified.

## (S)

Terminates processing of SLM - Manager or SLM - UR due to an incorrect system environment.

## (O)

Check the value specified for the property.

## KNAS09004-E

A properties file contains an incorrect set value. Check the set value. If the value is changed, restart the SLM - Manager services. properties file name=*aa*....*aa*, property key=*bb*....*bb* 

aa....aa: Name of the failed properties file (system definition file)

*bb....bb*: Name of the failed property key (system definition file property)

(S)

Terminates processing of SLM - Manager due to an incorrect system environment.

### (O)

Check the specified value of the property.

## KNAS09005-W

A default value was assumed because the system failed to obtain the set value from a properties file. Check the set value. If the value is changed, restart the SLM - Manager services. properties file name=*aa....aa*, property key=*bb....bb* 

aa....aa: Name of the properties file (system definition file) from which the default value was assumed

bb....bb: Name of the properties key (system definition file property) whose default value was assumed

(S)

Uses the default value due to the failure to obtain a setting in the system definition file.

(O)

Check the settings in the system definition file. Or, check the integrated trace log. For details about the integrated trace log, see 7.2.3 Integrated trace logs.

If you change the assumed value, restart the services that comprise SLM - Manager.

## KNAS09007-E

RMI registry registration has failed.

#### Description

An attempt to register into the RMI registry failed for one of the following reasons:

• A network failure occurred.

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- RMI server has not started.
- (S)

Suspends processing.

## (0)

Restart the SLM - Manager or SLM - UR service. If this does not resolve the problem, contact a system administrator.

## KNAS09008-E

RMI registry registration has failed.

## Description

An attempt to remove registration in the RMI registry failed for one of the following reasons:

- A network failure occurred.
- RMI server has not started.
- Remote object has not been registered.

### (S)

Suspends processing.

## (0)

Restart the SLM - Manager or SLM - UR service. If this does not resolve the problem, contact a system administrator.

# KNAS09009-E

RMI call has failed.

## Description

An attempt to call RMI failed for one of the following reasons:

- A network failure occurred.
- RMI server has not started.
- Remote object has not been registered.

#### (S)

Suspends processing.

## (O)

Restart the SLM - Manager or SLM - UR service. If this does not resolve the problem, contact a system administrator.

# KNAS09014-E

A properties file contains an incorrect set value. Check the set value. If the value is changed, restart the SLM - UR services. properties file name=*aa*....*aa*, property key=*bb*....*bb* 

aa....aa: Name of the invalid properties file (system definition file)

*bb....bb*: Name of the invalid property key (system definition file property)

## (S)

Terminates processing of SLM - UR due to an incorrect system environment.

## (O)

Check the specified value of the property.

## KNAS09015-W

A default value was assumed because the system failed to obtain the set value from a properties file. Check the set value. If the value is changed, restart the SLM - UR services. properties file name=*aa....aa*, property key=*bb....bb* 

aa....aa: Name of the properties file (system definition file) from which the default value was assumed

bb....bb: Name of the properties key (system definition file property) whose default value was assumed

## (0)

Check the settings in the system definition file. Or, check the integrated trace log. For details about the integrated trace log, see 7.2.3 Integrated trace logs.

If you change the default value that was assumed, restart the SLM - UR service.

# KNAS09016-E

The starting of the RMI server has failed. details=aa....aa

aa....aa: Exception information message

## Description

A RemoteException exception occurred in the execution of LocateRegistry.createRegistry().

## (S)

Suspends processing.

## (0)

Determine the cause from the information, take corrective action, and then restart the SLM - Manager or SLM - UR service.

## KNAS09021-E

An error occurred while registering a remote object to the RMI server. maintenance information=aa....aa

## aa....aa: URL of the remote object

## Description

A RemoteException exception occurred in remote object registration processing (during execution of java.rmi.Naming.rebind()).

## (S)

Suspends processing.

### (O)

Revise the system definition file settings shown below, and then start the SLM - Manager or SLM - UR service. If this does not resolve the problem, contact a system administrator.

### For SLM - Manager:

Revise the settings for the managerHost and rmiManagerPort properties in the jplitslm.properties system definition file.

## For SLM - UR:

Revise the settings for the urHost and rmiUrPort properties in the jplitslmur.properties system definition file.

## KNAS09022-E

The checking of set values in a properties file has failed. reason code=aa....aa, maintenance information=bb....bb

### aa....aa: Reason code

bb....bb: Exception message

## Description

While checking the settings in the properties file (system definition file), one of the following occurred:

- IOException occurred during execution of the jslmuripls command.
- IOException occurred when reading the output of the jslmuripls command.

#### (S)

Terminates processing of SLM - UR.

#### (O)

Take the corrective action shown below based on the reason code. If this does not resolve the problem, contact a system administrator.

• COMMAND\_FAILURE: Make sure the person running the jslmuripls command has access permission.

# KNAS09023-E

The process will be stopped, as the number of error occurrences has exceeded the upper limit. error type=*aa....aa*, number of occurrences=*bb....bb* 

#### aa....aa: Error type

bb....bb: Number of errors that occurred

#### Description

The number of errors that occurred has exceeded the limit.

The error types have the following meanings:

- COMMUNICATION: Communication errors have exceeded the maximum number of error occurrences.
- DATABASE: Database access errors have exceeded the maximum number of error occurrences.

#### (S)

Stops the process in which the errors occurred.

#### (0)

Check the messages output to the message log, take corrective action, and then start the services that comprise SLM - UR or SLM - Manager.

# KNAS09100-E

The establishment of a connection to the database has failed.

#### Description

The attempt to establish connection with the database failed.

#### (S)

Terminates processing of SLM - Manager.

#### (O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

# KNAS09500-I

A user is now logged in. (user name = aa...aa)

#### aa....aa: User name

Description

Shows the content of the audit log.

#### KNAS09501-E

Login failed. (user name = aa...aa)

## aa....aa: User name

#### Description

Shows the content of the audit log.

## KNAS09502-I

A user was logged out. (user name = aa...aa)

aa....aa: User name

#### Description

Shows the content of the audit log.

### KNAS09503-E

Logout failed. (user name = aa....aa)

aa....aa: User name

#### Description

Shows the content of the audit log.

## KNAS09504-I

A service monitoring operation was successful. (service group name = aa...aa, service name = bb....bb, operation type = cc...cc)

aa....aa: Service group name

bb....bb: Service name

cc....cc: Operation type

Description

Shows the content of the audit log. The operation types are as follows.

- "START": Start Monitoring

- "STOP": Stop Monitoring

#### KNAS09505-E

A service monitoring operation failed. (service group name = aa...aa, service name = bb....bb, operation type = cc...cc)

aa....aa: Service group name

bb....bb: Service name

cc....cc: Operation type

#### Description

Shows the content of the audit log. The operation types are as follows.

### - "START": Start Monitoring

- "STOP": Stop Monitoring

#### KNAS09506-I

A service operation was successful. (service group name = *aa....aa*, service name = *bb....bb*, operation type = *cc....cc*)

aa....aa: Service group name

- bb....bb: Service name
- cc....cc: Operation type

### Description

Shows the content of the audit log. The operation types are as follows.

- "ADD": Register monitoring
- "DELETE": Delete monitoring
- "REFER": Reference

### KNAS09507-E

A service operation failed. (service group name = aa...aa, service name = bb...bb, operation type = cc...cc)

- *aa....aa*: Service group name
- bb....bb: Service name
- cc....cc: Operation type

#### Description

Shows the content of the audit log. The operation types are as follows.

- "ADD": Register monitoring
- "DELETE": Delete monitoring
- "REFER": Reference

#### KNAS09508-I

An operation on a monitoring item was successful. (service group name = aa...aa, service name = bb....bb, monitored target name = cc...cc, type = dd....dd, operation type = ee...ee)

#### aa....aa: Service group name

#### bb....bb: Service name

#### cc....cc: Monitored target name

JP1/Service Level Management Description

### dd....dd: Monitoring type

#### ee....ee: Operation type

#### Description

Shows the content of the audit log. The types of monitoring are as follows.

- "SERVICE": Service performance
- "SYSTEM": System performance
- The operation types are as follows.
- "UPDATE": Update Monitoring Settings
- "REFER": Reference

### KNAS09509-E

An operation on a monitoring item failed. (service group name = aa...aa, service name = bb....bb, monitored target name = cc...cc, type = dd....dd, operation type = ee...ee)

- aa....aa: Service group name
- bb....bb: Service name
- cc....cc: Monitored target name
- dd....dd: Type of monitoring
- ee....ee: Operation type

### Description

Shows the content of the audit log. The types of monitoring are as follows.

- "SERVICE": Service performance
- "SYSTEM": System performance

The operation types are as follows.

- "UPDATE": Update Monitoring Settings
- "REFER": Reference

#### KNAS09510-I

An operation on configuration information was successful. (service group name = aa...aa, service name = bb...bb, operation type = cc...cc)

#### aa....aa: Service group name

bb....bb: Service name

#### cc....cc: Operation type

### Description

Shows the content of the audit log. The operation types are as follows.

- "UPDATE": Update Monitoring Settings
- "REFER": Reference

### KNAS09511-E

An operation on configuration information failed. (service group name = aa....aa, service name = bb....bb, operation type =cc....cc)

aa....aa: Service group name

- bb....bb: Service name
- cc....cc: Operation type

### Description

Shows the content of the audit log. The operation types are as follows.

- "UPDATE": Update Monitoring Settings
- "REFER": Reference

## KNAS09512-I

System performance monitoring settings were saved. (service group name = aa...aa, service name = bb....bb)

*aa....aa*: Service group name

bb....bb: Service name

Description

Shows the content of the audit log.

#### KNAS09513-E

Failed to configure system performance monitoring settings. (service group name = *aa....aa*, service name = *bb....bb*)

aa....aa: Service group name

bb....bb: Service name

#### Description

Shows the content of the audit log.

### KNAS09514-I

Availability monitoring settings were saved. (service group name = *aa....aa*, service name = *bb....bb*)

aa....aa: Service group name

bb....bb: Service name

#### Description

Shows the content of the audit log.

## KNAS09515-E

Failed to configure availability monitoring settings. (service group name = *aa....aa*, service name = *bb....bb*)

aa....aa: Service group name

bb....bb: Service name

#### Description

Shows the content of the audit log.

#### KNAS09516-I

An operation on a Web transaction was successful. (service group name = aa...aa, service name = bb...bb, Web transaction name =cc...cc, operation type = dd...dd)

aa....aa: Service group name

bb....bb: Service name

- cc....cc: Web transaction name
- dd....dd: Operation type

#### Description

Shows the content of the audit log. The operation types are as follows.

- "ADD": Register a web transaction
- "EDIT": Edit a web transaction
- "DELETE": Delete a web transaction
- "RE-SORT": Refresh the order in which Web transactions are sorted
- "REFER": Reference

## KNAS09517-E

An operation on a Web transaction failed. (service group name = aa...aa, service name = bb...bb, Web transaction name =cc...cc, operation type = dd...dd)

- aa....aa: Service group name
- bb....bb: Service name
- cc....cc: Web transaction name
- dd....dd: Operation type

#### Description

Shows the content of the audit log. The operation types are as follows.

- "ADD": Register a web transaction
- "EDIT": Edit a web transaction
- "DELETE": Delete a web transaction
- "RE-SORT": Refresh the order in which Web transactions are sorted
- "REFER": Reference

#### KNAS09518-I

A service detection operation was successful. (source IP = aa...aa, operation type = bb....bb)

- aa....aa: Source IP
- bb....bb: Operation type

Description

Shows the content of the audit log. The operation types are as follows.

- "START": Start detection
- "STOP": Stop detection

### KNAS09519-E

A service detection operation failed. (source IP = aa...aa, operation type = bb....bb)

#### aa....aa: Source IP

#### bb....bb: Operation type

#### Description

Shows the content of the audit log. The operation types are as follows.

- "START": Start detection

- "STOP": Stop detection

#### 11. Messages

JP1/Service Level Management Description

## KNAS09520-I

An operation on a Web transaction detection was successful. (source IP = aa...aa, operation type = bb....bb)

aa....aa: Source IP

bb....bb: Operation type

### Description

Shows the content of the audit log. The operation types are as follows.

- "START": Start detection
- "STOP": Stop detection

### KNAS09521-E

An operation on a Web transaction detection failed. (source IP = aa...aa, operation type = bb....bb)

#### aa....aa: Source IP

bb....bb: Operation type

#### Description

Shows the content of the audit log. The operation types are as follows.

- "START": Start detection

- "STOP": Stop detection

## KNAS09522-I

A template operation was successful. (service group name = aa...aa, service name = bb....bb, template name = cc...cc, operation type = dd....dd)

- aa....aa: Service group name
- bb....bb: Service name
- cc....cc: Template name
- dd....dd: Operation type

Description

Shows the content of the audit log. The operation types are as follows.

- "ADD": Add template
- "EDIT": Edit template
- "DELETE": Delete template

## KNAS09523-E

A template operation failed. (service group name = aa....aa, service name = bb....bb, template name =cc....cc, operation type=dd....dd)

- aa....aa: Service group name
- bb....bb: Service name
- cc....cc: Template name
- dd....dd: Operation type

#### Description

Shows the content of the audit log. The operation types are as follows.

- "ADD": Add template
- "EDIT": Edit template
- "DELETE": Delete template

#### KNAS09524-I

A report was output. (service group name = *aa....aa*, service name = *bb....bb*, template name =*cc....cc*)

- *aa....aa*: Service group name
- bb....bb: Service name
- cc....cc: Template name

#### Description

Shows the content of the audit log.

## KNAS09525-E

Failed to output a report. (service group name = aa...aa, service name = bb....bb, template name =cc...cc)

- aa....aa: Service group name
- bb....bb: Service name
- cc....cc: Template name

#### Description

Shows the content of the audit log.

## KNAS09526-I

A command was executed. (command name = aa...aa, arguments = bb....bb)

#### aa....aa: Command name

## bb....bb: Argument

### Description

Shows the content of the audit log.

## KNAS09527-E

Execution of a command failed. (command name = aa....aa, arguments = bb....bb)

#### aa....aa: Command name

#### bb....bb: Argument

### Description

Shows the content of the audit log.

### KNAS09600-E

Failed to initialize an audit log.

#### Description

Failed to initialize the audit log.

### (S)

Continues processing without outputting the audit log.

## KNAS09601-E

Failed to open an audit log file.

#### Description

Failed to open the audit log file.

#### (S)

Continues processing without outputting the audit log.

## KNAS09602-E

Failed to close an audit log file.

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JP1/Service Level Management Description

### Description

Failed to close the audit log file.

### (S)

Continues processing.

## KNAS09603-E

Failed to output an audit log file.

## Description

Failed to output the audit log.

## (S)

Continues processing without outputting the audit log.

# KNAS10000-I

The manual cannot be located.

## (0)

Install the manual. For details, see 5.1.8 Installing the HTML manual.

# KNAS10001-E

Connection to the SLM - Manager has failed.

## Description

An attempt to communicate with SLM - Manager failed.

### (S)

Suspends processing.

#### (O)

Check that the communications environment with SLM - Manager is normal and that SLM - Manager has started successfully.

If you want to close the browser or close the browser tab in which this window was opened, press the **OK** button on the dialog box that is displayed. If you want to retry the connection to SLM - Manager, press the **Cancel** button.

# KNAS10002-Q

Do you want to log out?

## KNAS10003-I

The maximum allowable number of selections has been exceeded. maximum allowable number of selections=*aa*....*aa* 

### aa....aa: Maximum number that can be selected

#### Description

The number of items selected by the user at the client exceeds the maximum value.

#### (S)

Discards the selections.

#### (O)

Re-select items without selecting unneeded items.

### KNAS11400-I

A system performance monitor item was deleted. The screen will be refreshed.

#### Description

A system performance monitoring item has been deleted by another user.

#### (S)

Refreshes the window.

#### (O)

Check the most recent system performance information.

## KNAS11500-I

A monitor item being displayed on the performance chart was deleted. The screen will be refreshed.

#### Description

A monitoring item in a performance chart has been deleted by another user.

#### (S)

Refreshes the window.

#### (O)

Check the most recent service configuration information.

## KNAS11600-Q

Do you want to output the CSV file?

# KNAS11601-E

CSV file output has failed.

### Description

This is an error in the environment at the machine to which you are trying to output to a CSV file. Factors to consider include the following:

- Insufficient disk space
- No write permission

#### (S)

Suspends processing.

(O)

Check for problems such as the following in the environment of the machine to which you are trying to output to a CSV file:

- Insufficient disk space
- No write permission

Because the file might be incomplete, it is recommended that you delete the CSV file that was output.

## KNAS11602-W

The output of the CSV was canceled.

#### Description

Output of the CSV file was suspended for one of the following reasons:

- Cancel was selected in the dialog box when the CSV file was output.
- A forced cancellation was executed on the machine to which you are trying to output the CSV file.
- (S)

Suspends processing.

# KNAS11603-I

The template was registered successfully.

# KNAS11604-Q

Do you want to save the edited template?

JP1/Service Level Management Description

## KNAS11605-I

The edited template was saved successfully.

## KNAS11606-Q

Do you want to delete the template?

## KNAS11607-I

The template was deleted successfully.

## KNAS11700-I

The selected service was registered successfully.

# KNAS11701-Q

Do you want to delete the selected service?

# KNAS11702-I

The selected service was deleted successfully.

# KNAS11703-I

The monitor settings were registered.

## KNAS11704-I

The Web transaction was registered successfully.

# KNAS11705-Q

Do you want to delete the selected Web transaction?

## KNAS11706-I

The selected Web transaction was deleted successfully.

## KNAS11707-Q

Do you want to delete the Web access condition?

#### KNAS11708-Q

Do you want to delete all available URIs?

## KNAS11709-Q

Do you want to delete the selected line?

## KNAS11710-I

No more Web access conditions can be added, as the upper limit on the number of conditions has been reached.

## KNAS11711-E

The Web access condition cannot be added, as the same condition has already been registered.

## Description

The same Web access condition is already registered.

#### (S)

Suspends processing.

#### (O)

Modify the Web access condition and try again.

<sup>11.</sup> Messages

# KNAS11712-I

The Web transaction was edited successfully.

# KNAS11713-Q

The URI of the service does not end with "/". Its full path will be registered as a monitored target. Do you want to proceed to the registration?

## KNAS11714-Q

The stopping of service monitoring has failed. Do you want to force the stopping of service monitoring?

## KNAS11715-I

The configuration information was refreshed successfully.

## KNAS11716-I

The availability monitor settings were saved successfully.

# KNAS11717-I

The system performance monitor settings were saved successfully.

# KNAS11718-Q

Do you want to save the availability monitor settings?

## KNAS11719-Q

Do you want to save the system performance monitor settings?

# KNAS11720-E

The selected monitor item cannot be added, as a different monitor item having the same values for all key fields already exists.

#### Description

There is a row with all the same key field values.

#### (S)

Suspends processing.

### (O)

Check and, if necessary, revise the values of the key fields, and then try again.

### KNAS15000-I

A service was deleted by a different user. The screen will be refreshed.

## (0)

Check the most recent list of monitored services.

If you want to see which monitored services have changed, check the message log.

# KNAS15001-E

An error occurred, making it impossible to continue.

#### (S)

Suspends processing and returns to the login window.

#### (O)

Contact a system administrator.

## KNAS15005-E

Initialization of the SLM - Manager service has failed.

#### (S)

Suspends processing and returns to the login window.

#### (O)

Check the message log. If an error message was output immediately before this message, take corrective action according to that message.

If this message is output again, contact a system administrator.

# KNAS15006-E

The session with the SLM - Manager has become invalid.

## Description

The session is no longer valid for one of the following reasons:

- The SLM Manager service SLM Manager Service (service name: JP1\_ITSLM\_MGR\_Service) has restarted.
- The session has timed out.

### (S)

Suspends processing and returns to the login window.

#### (O)

Log in again.

# KNAS15007-E

An insufficient memory error occurred in the Web container server.

## (S)

Suspends processing and returns to the login window.

### (O)

Stop the services that comprise SLM - Manager, allocate memory, and then restart. If this does not resolve the problem, contact a system administrator.

# KNAS15008-E

The specified regular expression is invalid. type=aa....aa, regular expression=bb....bb

aa....aa: Type

bb....bb: Regular expression

## Description

The possible types indicated by *aa....aa* are as follows:

- path: Path
- query: Query
- cookie: Cookie

#### (S)

Suspends processing.

## (0)

Check and, if necessary, revise the regular expression.

<sup>11.</sup> Messages

## KNAS15009-I

A Web transaction was deleted by a different user. The screen will be refreshed.

### (S)

Refreshes the window.

## (O)

Check the updated services.

To see which Web transactions have changed, check the message log.

# KNAS15011-E

The monitoring configuration of the specified service is already changed. The screen will be refreshed. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Service group name

### bb....bb: Service name

Description

Log out, because the configuration of the service was changed by the jslmmgrconfig command.

### (S)

Log out.

### (0)

Login again.

# KNAS15012-E

A communication error occurred between SLM -Manager(Master) and SLM-Manager (Slave). (destination IP address = aa...aa, destination port number = bb....bb)

aa....aa: IP address of destination of connection

bb....bb: Number of port at connection destination

## Description

Retried according to announceRetryCount definitions and announceRetryInterval definitions but failed. Retried according to communicationRetryCount definitions and communicationRetryInterval definitions but failed.

## (S)

Interrupts processing.

## (0)

Check that the master instance of SLM - Manager or a slave instance of SLM - Manager has been started. If started, review the specified values of the managerHost definition, rmiManagerPort definition, urHost definition, and rmiUrPort definition.

Specify the IP address of the destination of connection = *aa....aa* and the port number of the destination of connection = *bb....bb* and execute the jslmmgrconnect command.

### KNAS15013-E

An error occurred during processing of SLM - Manager (Slave). (destination IP address = aa...aa, destination port number = bb....bb)

aa....aa: IP address of destination of connection

bb....bb: Number of port at connection destination

#### Description

An error occurred in processing within a slave instance of SLM - Manager.

(S)

Interrupts processing.

#### (O)

Check the log of the slave instance of SLM - Manager and take corrective action based on the message.

## KNAS15014-I

A UR was not connected. (UR IP address = aa...aa)

aa....aa: IP address of UR

#### Description

The UR is not connected.

#### (S)

Refreshes the window.

#### (O)

Check that the UR has been started.

#### KNAS15015-I

A monitoring item was deleted. The screen will be refreshed. (monitor item name = aa....aa)

### aa....aa: Monitor item name

#### Description

The monitor item has been deleted and does not exist.

#### (S)

Refreshes the window.

## (0)

Check the updated services.

## KNAS15016-E

Non-existent service has been specified. The screen will be refreshed.

#### Description

Either the service has been deleted due to the action of a different user, or the instance of SLM - Manager managing the service is stopped.

#### (S)

Refreshes the window.

### (O)

Check the updated services.

Check the message log to check the services that have been changed. If the instance of SLM - Manager managing the service is stopped, start this SLM - Manager.

## KNAS15300-I

A user is now logged in. user name=aa....aa

aa....aa: User name

## KNAS15301-E

Login has failed. The user name or password is incorrect.

#### (S)

Suspends processing and returns to the login window.

#### (O)

Log in by entering the JP1 user name and password registered on the authentication server for the connection destination.

## KNAS15302-E

Login has failed. The system cannot connect to JP1/Base.

#### Description

An attempt to log in failed for one of the following reasons:

• JP1/Base is not running.

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• A communications failure occurred.

#### (S)

Suspends processing and returns to the login window.

### (O)

After starting JP1/Base, restart the services that comprise SLM - Manager.

### KNAS15304-E

Login has failed. maintenance information=aa....aa

### aa....aa: Error type

### Description

An error occurred during the login process.

#### (S)

Suspends processing and returns to the login window.

#### (O)

Contact a system administrator.

## KNAS15305-E

Login has failed. maintenance information 1=aa....aa, maintenance information 2=bb....bb

#### aa....aa: Error type

bb....bb: Return code

### Description

An error occurred during the login process.

### (S)

Suspends processing and returns to the login window.

## (0)

Contact a system administrator.

# KNAS15306-I

Initialization for the user authentication function of JP1/Base was performed.

## KNAS15307-E

Initialization for the user authentication function of JP1/Base has failed. reason code=*aa....aa*, maintenance information=*bb....bb* 

#### aa....aa: Reason code

bb....bb: Error type

### Description

The reason codes have the following meanings:

- NO\_JBSHOST: The specified authentication server does not exist, or the authentication server has not been set.
- JBSHOST ENT: Authentication server definition information is incorrect.
- REMOTE: A communications error occurred.
- INTERNAL: An error other than the above occurred.
- (S)

Suspends processing.

#### (0)

After taking the following corrective measure based on the reason code, restart the services that comprise SLM - Manager.

- NO\_JBSHOST: Check and, if necessary, revise the setting for the jbsHostName property in the SLM Manager jplitslm.properties system definition file.
- JBSHOST\_ENT: Check and, if necessary, revise the settings for the JP1/Base authentication server.
- REMOTE: Confirm that JP1/Base has started. If JP1/Base has not started, start it.
- INTERNAL: Contact a system administrator.

### KNAS15308-E

Login has failed. The specified user has no permission to access the SLM. user name=aa....aa

aa....aa: User name

### (S)

Suspends processing and returns to the login window.

### (O)

Set SLM permissions for the JP1 user, and then log in again.

For details about setting permissions for JP1 users, see 5.2.3 Specifying operation permissions for each JP1 user.

## KNAS15309-E

Login has failed. An insufficient memory error occurred in the JP1/Base authentication server.

(S)

Suspends processing and returns to the login window.

### (O)

Terminate other programs that are using memory on the JP1/Base authentication server, and then log in again.

## KNAS15310-E

Login has failed. An error occurred while obtaining access permissions. maintenance information=aa....aa

aa....aa: Error type

#### (S)

Suspends processing and returns to the login window.

#### (O)

Contact a system administrator.

### KNAS15311-E

Initialization for the user authentication function of JP1/Base has failed. reason code=aa...aa, maintenance information 1=bb....bb, maintenance information 2=cc...cc

#### aa....aa: Reason code

#### bb....bb: Error type

#### cc....cc: Return code

#### Description

The reason codes have the following meanings:

• INTERNAL: An error occurred during initialization processing of the JP1/Base user authentication function.

#### (S)

Suspends processing.

### (O)

Take the corrective action shown below based on the reason code.

• INTERNAL: Contact a system administrator.

## KNAS15312-E

Login has failed. An error occurred during a database operation.

### (S)

Suspends processing and returns to the login window.

### (O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). In addition, if the command for cleaning up the database (jslmmgrdbcleanup) has not been executed in a long time, execute the command jslmmgrdbcleanup. If this does not resolve the problem, contact a system administrator.

## KNAS15313-E

Login has failed. The user name or password is incorrect. The screen was locked, as the number of login failures reached the upper limit.

#### Description

The entered user name or password is not correct, and the number of failed login attempts has reached the maximum.

(S)

Locks the screen because the maximum number of login failures has been reached.

(O)

After refreshing the window, log in by entering a JP1 user name and password registered on the authentication server for the connection destination.

### KNAS15400-I

A user was logged out. user name=aa....aa

aa....aa: User name

# KNAS15401-E

Logout has failed. The system cannot connect to JP1/Base.

#### Description

An attempt to log out failed for one of the following reasons:

- JP1/Base is not running.
- A communications failure occurred.
- (S)

Suspends processing.

(0)

Start JP1/Base, and then restart the services that comprise SLM - Manager.

## KNAS15403-E

Logout has failed. maintenance information=aa....aa

#### aa....aa: Error information

#### Description

An error occurred during logout processing.

(S)

Suspends processing.

#### (O)

Contact a system administrator.

### KNAS15404-E

Logout has failed. maintenance information 1=aa....aa, maintenance information 2=bb....bb

#### aa....aa: Error type

bb....bb: Return code

Description

An error occurred during logout processing.

(S)

Suspends processing.

(O)

Contact a system administrator.

## KNAS15405-I

A session timeout was detected. A logout will be performed. user name=aa....aa

aa....aa: User name

# KNAS15500-I

A service was registered. service group name=aa....aa, service name=bb....bb

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

## KNAS15501-E

Service registration has failed. The specified service name is already registered in the same service group. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

Description

The specified monitored service name is already registered in the same service group. Each monitored service name in a service group must be unique.

(S)

Suspends processing.

(O)

Revise the name of the monitored service. Set a name for the monitored service that is not already registered within the same service group.

## KNAS15502-E

Service registration has failed. An error occurred during a database operation. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

(S)

Suspends processing and returns to the login window.

#### (O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

### KNAS15503-E

Service registration has failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

(S)

Suspends processing.

(O)

Wait a while, and then retry the operation. If the problem re-occurs, communication with SLM - UR might have failed. Check the message  $\log(UserResponseMessageM[N].log)$ . If there is no problem in the message  $\log_{N}$  restart the services that comprise SLM - Manager.

### KNAS15504-E

Service registration has failed. service group name=aa....aa, service name=bb....bb

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

#### Description

An error occurred while processing registration of a service.

#### (S)

Suspends processing and returns to the login window.

#### (0)

Contact a system administrator.

### KNAS15505-E

Service registration has failed. The processing timed out. Wait for a while and retry.

### Description

Because another user was executing an operation that cannot be executed at the same time, it was necessary to wait for the earlier processing to be completed. However, a timeout occurred because the earlier processing had not finished after waiting for at least 10 seconds.

#### (S)

Suspends processing.

#### (O)

Wait a while, and then retry the operation.

## KNAS15507-E

Service registration has failed. An error occurred during database space allocation. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

#### bb....bb: Name of the monitored service

### Description

An attempt to allocate database space for registering a monitored service failed.

(S)

Suspends processing.

(0)

 $Run \ the \ database \ cleanup \ command \ (\texttt{jslmmgrdbcleanup}) \ and \ try \ the \ operation \ again.$ 

For details about the jslmmgrdbcleanup command, see 9.8 jslmmgrdbcleanup (cleans up database) in 9. Commands.

If the problem reoccurs after you have executed the database cleanup command (jslmmgrdbcleanup), there is not enough space in the database. Extend the database space, and then execute setup again.

# KNAS15508-E

Service registration has failed. The SLM - UR version you are using to monitor the registered service cannot monitor a service by specifying its path. service group name=*aa....aa*, service name=*bb....bb*, SLM - UR IP address=*cc....cc*, version=*dd....dd* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: IP address of SLM - UR

dd....dd: Version of SLM - UR

(S)

Suspends processing.

### (O)

Monitor the registered monitored service under SLM - UR version 09-51 or later.

## KNAS15509-E

Service registration has failed. The SLM - UR version you are using to monitor the registered service cannot monitor a service by specifying its port. service group name=*aa*....*aa*, service name=*bb*....*bb*, SLM - UR IP address=*cc*....*cc*, version=*dd*....*dd* 

aa....aa: Name of the service group to which the monitored service belongs

*bb....bb*: Name of the monitored service

cc....cc: IP address of SLM - UR

dd....dd: Version of SLM - UR

### Description

The monitored service for which the port was specified in the URI cannot be monitored in the version of SLM - UR which is to monitor the registered monitored service. For details about the URIs supported by SLM, see (3) Supplemental notes in 10.6.4 Add/Delete monitor area.

### (S)

Suspends processing.

## (O)

Monitor the registered monitored service under SLM - UR version 09-51 or later.

## KNAS15510-E

Service registration has failed. The operation cannot be performed, as a detection process by a different user is in progress. Wait for a while and retry. detection type=*aa*....*aa* 

## aa....aa: Type of detection

## Description

Another user is performing detection. Other operations cannot be executed on monitored services while detection is underway.

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

## (S)

Suspends processing.

## (O)

Wait until the detection processing that the other user is executing has been completed, and then retry the operation.

# KNAS15511-E

Service registration has failed. A command having an exclusive relationship is in progress. Wait for a while and retry.

## Description

The processing cannot be executed because a command that is in an exclusive relationship is running.

(S)

Suspends processing.

## (O)

Wait for the command that is in an exclusive relationship to complete its execution, and then retry the operation.

# KNAS15512-E

Service registration failed. An error occurred during processing of SLM - Manager (Slave). (service group name = aa...aa, service name = bb....bb)

#### aa....aa: Service group name

bb....bb: Service name

Description

An error occurred during processing of a slave instance of SLM - Manager.

(S)

Interrupts processing.

#### (0)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

## KNAS15513-E

Service registration failed. The SLM - Manager instance linked with the specified SLM - UR instance was not found. (service group name = aa...aa, service name = bb....bb, SLM - UR IP address =cc...cc)

aa....aa: Service group name

bb....bb: Service name

cc....cc: IP address of SLM - UR

#### Description

The SLM - Manager to link with the specified SLM - UR cannot be found.

(S)

Interrupts processing.

(O)

Check that the services of SLM - UR and the instance of SLM - Manager to link with SLM - UR are started. If started, review the specification of the IP address of SLM - UR to make sure this is correct.

## KNAS15600-I

A service was deleted. service group name=aa....aa, service name=bb....bb

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

## KNAS15601-E

Service deletion has failed. The specified service is already deleted and does not exist. The screen will be refreshed. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

#### bb....bb: Name of the monitored service

### Description

The specified monitored service has already been deleted by another user.

### (S)

Refreshes the window.

### (0)

Check the most recent list of monitored services.

If you want to see which monitored services have changed, check the message log.

## KNAS15602-E

Service deletion has failed. An error occurred during a database operation. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

(S)

Suspends processing and returns to the login window.

(O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

## KNAS15603-E

Service deletion has failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

(S)

Suspends processing.

(O)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS15604-E

Service deletion has failed. service group name=aa....aa, service name=bb....bb

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

### Description

An error occurred while processing deletion of a monitored service.

#### (S)

Suspends processing and returns to the login window.

### (0)

Contact a system administrator.

## KNAS15605-E

Service deletion has failed. The processing timed out. Wait for a while and retry.

## Description

Because another user was executing an operation that cannot be executed at the same time, it was necessary to wait for the earlier processing to be completed. However, a timeout occurred because the earlier processing had not finished after waiting of at least 10 seconds.

## (S)

Suspends processing.

### (O)

Wait a while, and then retry the operation.

## KNAS15607-E

Service deletion has failed. The operation cannot be performed, as the monitored status of the specified service is "Starting". Stop the service monitoring and then retry. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

### Description

Monitoring of the specified monitored service is starting. A monitored service cannot be deleted while monitoring of it is starting.

## (S)

Suspends processing.

### (0)

Stop monitoring of the monitored service, and then retry the operation.

## KNAS15608-E

Service deletion has failed. The operation cannot be performed, as a detection process by a different user is in progress. Wait for a while and retry. detection type=*aa*....*aa* 

#### aa....aa: Type of detection

#### Description

Another user is performing detection. Other operations cannot be executed on monitored services while detection is being performed.

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions
- (S)

Suspends processing.

#### (O)

Wait until the detection processing that the other user is executing has been completed, and then retry the operation.

### KNAS15609-E

Service deletion has failed. A command having an exclusive relationship is in progress. Wait for a while and retry.

#### Description

The processing cannot be executed because a command that is in an exclusive relationship is running.

(S)

Suspends processing.

#### (O)

Wait for the command that is in an exclusive relationship to complete its execution, and then retry the operation.

### KNAS15610-E

Service deletion has failed. An error occurred during the SLM - Manager(Slave) processing. service group name=*aa....aa*, service name=*bb....bb* 

#### aa....aa: Service group name

#### bb....bb: Service name

#### Description

An error occurred during processing of a slave instance of SLM - Manager.

(S)

Interrupts processing.

## (O)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

## KNAS15712-I

A detection process was started. detection type=aa....aa

aa....aa: Type of detection

#### Description

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

### KNAS15713-E

The starting of a detection process has failed. During the processing for SLM - UR, an inter-process communication error occurred in the SLM - Manager. SLM - UR IP address=*aa*....*aa*, detection type=*bb*....*bb* 

aa....aa: IP address of SLM - UR

#### bb....bb: Type of detection

#### Description

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

#### (S)

Suspends the affected SLM - UR processing, and continues other SLM - UR processing.

## (O)

Wait a while, and then retry the operation. If the problem reoccurs, restart SLM - UR and the services that comprise SLM - Manager.

## KNAS15714-E

The starting of a detection process has failed. An error occurred during the SLM - UR processing. SLM - UR IP address=*aa*....*aa*, detection type=*bb*....*bb* 

#### aa....aa: IP address of SLM - UR

#### bb....bb: Type of detection

#### Description

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

#### (S)

Suspends the affected SLM - UR processing, and continues other SLM - UR processing.

#### (O)

Check the messages output to the SLM - UR message log, and then take corrective action.

### KNAS15715-E

The starting of a detection process has failed. A communication error occurred between the SLM - UR and the SLM - Manager. SLM - UR IP address=*aa*....*aa*, detection type=*bb*....*bb* 

aa....aa: IP address of SLM - UR

#### bb....bb: Type of detection

#### Description

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

#### (S)

Suspends the relevant SLM - UR processing, and continues other SLM - UR processing.

#### (O)

Check the communication environment between SLM - UR and SLM - Manager. If there is a problem with the communication environment, restart the SLM - UR service and the services that comprise SLM - Manager.

### KNAS15716-E

The starting of a detection process has failed. An error occurred during a database operation. detection type=aa....aa

#### aa....aa: Type of detection

#### Description

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions

• service or webTransaction: Detection of monitored services or Web transactions

#### (S)

Suspends processing and returns to the login window.

#### (O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager **DB Service** (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

## KNAS15717-E

The starting of a detection process has failed. The processing timed out. Wait for a while and retry. detection type=aa...aa

#### aa....aa: Type of detection

#### Description

Because another user was executing an operation that cannot be executed at the same time, it was necessary to wait for the earlier processing to be completed. However, a timeout occurred because the earlier processing had not finished after waiting for at least 10 seconds.

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

#### (S)

Suspends processing.

#### (O)

Wait a while, and then retry the operation.

### KNAS15718-E

The starting of a detection process has failed. The operation cannot be performed, as monitoring, or a detection process by a different user, is in progress. If there are services being monitored, stop all monitoring and then retry. If there is no service being monitored, wait for a while and retry. detection type=aa...aa

#### *aa....aa*: Type of detection

#### Description

There are monitored services being monitored, or another user is performing detection. A detection operation cannot be executed while monitoring or other detection is being performed.

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

(S)

Suspends processing.

(O)

If there are monitored services being monitored, stop all monitoring, and then retry the operation. If no monitored services are being monitored, wait until the detection processing that the other user is executing has been completed, and then retry the operation.

# KNAS15719-W

In the starting of a detection process, errors have occurred during the processing of one or more SLM - UR instances. If the detection process encounters a problem, check whether the SLM - UR service is running normally. detection type=aa....aa

## aa....aa: Type of detection

## Description

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

## (S)

Continues processing.

## (0)

If detection cannot be executed, check whether SLM - UR started successfully.

# KNAS15720-E

The starting of a detection process has failed. No available SLM - UR service exists. detection type=aa....aa

# aa....aa: Type of detection

## Description

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

## (S)

Suspends processing.

## (O)

Start the SLM - UR service SLM - User Response Service (service name: JP1\_ITSLM\_UR\_Service).

## KNAS15721-E

The starting of a detection process has failed. An inter-process communication error occurred in the SLM - Manager. detection type=*aa....aa* 

#### aa....aa: Type of detection

#### Description

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

#### (S)

Suspends processing.

#### (O)

Wait a while, and then retry the operation. If the problem re-occurs, communication with SLM - UR might have failed. Check the message  $\log(UserResponseMessageM[N].log)$ . If there is no problem in the message  $\log_{N}$  restart the services that comprise SLM - Manager.

## KNAS15722-E

The starting of a detection process has failed. detection type=aa....aa

### aa....aa: Type of detection

### Description

An error occurred during detection startup processing.

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

## (S)

Suspends processing and returns to the login window.

## (O)

Contact a system administrator.

# KNAS15723-E

The starting of a detection process has failed. No available SLM - UR instance exists. Check whether the SLM - UR service is running normally. detection type=*aa*....*aa* 

## aa....aa: Type of detection

### Description

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

#### (S)

Suspends processing.

#### (O)

Make sure SLM - UR started successfully.

## KNAS15724-E

The starting of a detection process has failed. An error occurred during the SLM-UR or SLM - Manager(Slave) processing. detection type=*aa*....*aa* 

#### *aa....aa*: Type of detection

#### Description

An error occurred during processing of SLM - UR or a slave instance of SLM - Manager.

The types of detection are as follows.

- 1. "service": Detection of services
- 2. "webTransaction": Detection of Web transactions
- 3. "service or webTransaction": Detection of services or Web transactions

#### (S)

Interrupts processing.

### (O)

Check the message log and take corrective action based on the message output immediately prior to this message.

### KNAS15725-W

In the starting of a detection process, errors occurred during the processing of one or more SLM - UR or SLM - Manager (Slave) instances. If the detection process encounters a problem, check whether the SLM - UR or SLM - Manager (Slave) service is running normally. (detection type = aa...aa)

### aa....aa: Type of detection

#### Description

An error occurred with the processing of one or more of SLM - UR and a slave instance of SLM - Manager upon processing the start of detection.

The types of detection are as follows.

- 1. "service": Detection of services
- 2. "webTransaction": Detection of Web transactions
- 3. "service or webTransaction": Detection of services or Web transactions

## (S)

Continues processing.

## (O)

If detection cannot be performed normally, check that SLM - UR and the slave instance of SLM - Manager are operating normally.

## KNAS15810-I

A detection process was stopped. detection type=aa....aa

## aa....aa: Type of detection

## Description

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

## KNAS15811-E

The stopping of a detection process has failed. During the processing for SLM - UR, an inter-process communication error occurred in the SLM - Manager. SLM - UR IP address=*aa*....*aa*, detection type=*bb*....*bb* 

### aa....aa: IP address of SLM - UR

### bb....bb: Type of detection

## Description

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

# (S)

Suspends the affected SLM - UR processing, and continues other SLM - UR processing.

## (O)

Wait a while, and then retry the operation. If the problem reoccurs, restart SLM - UR and the services that comprise SLM - Manager.

## KNAS15812-E

The stopping of a detection process has failed. An error occurred during the SLM - UR processing. SLM - UR IP address=*aa....aa*, detection type=*bb....bb* 

aa....aa: IP address of SLM - UR

*bb....bb*: Type of detection

### Description

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions
- (S)

Suspends the affected SLM - UR processing, and continues other SLM - UR processing.

#### (O)

Check the messages output to the SLM - UR message log, and then take corrective action.

## KNAS15813-E

The stopping of a detection process has failed. A communication error occurred between the SLM - UR and the SLM - Manager. SLM - UR IP address=*aa*....*aa*, detection type=*bb*....*bb* 

#### aa....aa: IP address of SLM - UR

### bb....bb: Type of detection

### Description

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

### (S)

Suspends the affected SLM - UR processing, and continues other SLM - UR processing.

(O)

Check the communication environment between SLM - UR and SLM - Manager. If there is a problem with the communication environment, restart the SLM - UR service and the services that comprise SLM - Manager.

### KNAS15814-E

The stopping of a detection process has failed. The processing timed out. Wait for a while and retry. detection type=aa...aa

#### aa....aa: Type of detection

### Description

Because another user was executing an operation that cannot be executed at the same time, it was necessary to wait for the earlier processing to be completed. However, a timeout occurred because the earlier processing had not finished after waiting for at least 10 seconds.

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

#### (S)

Suspends processing.

(O)

Wait a while, and then retry the operation.

### KNAS15815-E

The stopping of a detection process has failed. The operation cannot be performed, as the current status is not "Detecting". detection type=*aa*....*aa* 

#### aa....aa: Type of detection

#### Description

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

#### (S)

Suspends processing.

#### (0)

Check and, if necessary, revise the operation to be executed.

### KNAS15816-W

In the stopping of a detection process, errors have occurred during the processing of one or more SLM - UR instances. Check whether the SLM - UR service is running normally. detection type=*aa*....*aa* 

#### aa....aa: Type of detection

#### Description

The detection types have the following meanings:

• service: Detection of monitored services

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- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

#### (S)

Continues processing.

#### (O)

Make sure SLM - UR started successfully.

### KNAS15817-E

The stopping of a detection process has failed. An inter-process communication error occurred in the SLM - Manager. detection type=aa....aa

#### aa....aa: Type of detection

#### Description

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

#### (S)

Suspends processing.

#### (O)

Wait a while, and then retry the operation. If the problem re-occurs, communication with SLM - UR might have failed. Check the message log (UserResponseMessageM[N].log). If there is no problem in the message log, restart the services that comprise SLM - Manager.

## KNAS15818-E

The stopping of a detection process has failed. detection type=aa....aa

#### aa....aa: Type of detection

#### Description

An error occurred during detection stop processing.

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

(S)

Suspends processing and returns to the login window.

## (O)

Contact a system administrator.

## KNAS15819-E

Failed to stop detection processing. An error occurred during the SLM-UR or SLM - Manager (Slave) processing. (detection type = aa....aa)

## aa....aa: Type of detection

## Description

An error occurred during processing of SLM - UR or a slave instance of SLM - Manager.

The types of detection are as follows.

- 1. "service": Detection of services
- 2. "webTransaction": Detection of Web transactions
- 3. "service or webTransaction": Detection of services or Web transactions

### (S)

Interrupts processing.

## (O)

Check the message log and take corrective action based on the message output immediately prior to this message.

## KNAS15908-E

The acquisition of detection results has failed. During the processing for SLM - UR, an inter-process communication error occurred in the SLM - Manager. SLM - UR IP address=*aa*....*aa*, detection type=*bb*....*bb* 

### aa....aa: IP address of SLM - UR

### bb....bb: Type of detection

### Description

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

### (S)

Suspends the relevant SLM - UR processing, and continues other SLM - UR processing.

### (0)

Wait a while, and then retry the operation. If the problem reoccurs, restart SLM - UR and the services that comprise SLM - Manager.

## KNAS15909-E

The acquisition of detection results has failed. An error occurred during the SLM - UR processing. SLM - UR IP address=*aa....aa*, detection type=*bb....bb* 

aa....aa: IP address of SLM - UR

bb....bb: Type of detection

#### Description

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions
- (S)

Suspends the affected SLM - UR processing, and continues other SLM - UR processing.

#### (0)

Check the messages output to the SLM - UR message log, and then take corrective action.

#### KNAS15910-E

The acquisition of detection results has failed. A communication error occurred between the SLM - UR and the SLM - Manager. SLM - UR IP address=*aa*....*aa*, detection type=*bb*....*bb* 

#### aa....aa: IP address of SLM - UR

### bb....bb: Type of detection

#### Description

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

## (S)

Suspends the relevant SLM - UR processing, and continues other SLM - UR processing.

### (O)

Check the communication environment between SLM - UR and SLM - Manager. If there is a problem with the communication environment, restart the SLM - UR service and the services that comprise SLM - Manager.

# KNAS15911-E

The acquisition of detection results has failed. The processing timed out. detection type=aa....aa

### aa....aa: Type of detection

JP1/Service Level Management Description

### Description

Because another user was executing an operation that cannot be executed at the same time, it was necessary to wait for the earlier processing to be completed. However, a timeout occurred because the earlier processing had not finished after waiting for at least 10 seconds.

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

#### (S)

Suspends processing.

#### (0)

Wait a while, and then retry the operation.

## KNAS15912-E

The acquisition of detection results has failed. The operation cannot be performed, as the current status is not "Detecting". detection type=*aa....aa* 

#### aa....aa: Type of detection

#### Description

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

#### (S)

Suspends processing.

#### (O)

Check and, if necessary, revise the operation to be executed.

### KNAS15913-E

The acquisition of detection results has failed. An inter-process communication error occurred in the SLM - Manager. detection type=*aa....aa* 

### aa....aa: Type of detection

### Description

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions

- service or webTransaction: Detection of monitored services or Web transactions
- (S)

Suspends processing.

### (O)

Wait a while, and then retry the operation. If the problem re-occurs, communication with SLM - UR might have failed. Check the message log (UserResponseMessageM[N].log). If there is no problem in the message log, restart the services that comprise SLM - Manager.

## KNAS15914-E

The acquisition of detection results has failed. detection type=aa....aa

#### aa....aa: Type of detection

#### Description

An error occurred while obtaining detection results.

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

## (S)

Suspends processing and returns to the login window.

#### (O)

Contact a system administrator.

## KNAS15915-E

The acquisition of detection results has failed. There is no SLM - UR instance available to continue the detection process. The detection process will be stopped. detection type=*aa....aa* 

#### aa....aa: Type of detection

#### Description

SLM - UR was stopped or an error occurred while obtaining detection results; as a result, there is no SLM - UR that is able to continue detection.

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

### (S)

Suspends processing and places detection in stopped status.

## (O)

Check the messages output to the message log, and then take corrective action. Make sure SLM - UR is running.

## KNAS16000-E

The acquisition of monitor settings has failed. An error occurred during a database operation. service group name=*aa*....*aa*, service name=*bb*....*bb*, monitored target name=*cc*....*cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

#### (S)

Suspends processing and returns to the login window.

#### (0)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

## KNAS16001-E

The acquisition of monitor settings has failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

### (S)

Suspends processing.

#### (O)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS16002-E

The acquisition of monitor settings has failed. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

JP1/Service Level Management Description

#### cc....cc: Name of the monitored target

### Description

An error occurred while obtaining monitoring settings.

#### (S)

Suspends processing and returns to the login window.

#### (O)

Contact a system administrator.

## KNAS16003-E

The acquisition of monitor settings has failed. The specified service is already deleted and does not exist. The screen will be refreshed. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

### Description

The specified monitored service has already been deleted by another user.

(S)

Refreshes the window.

#### (0)

Check the most recent list of monitored services.

If you want to see which monitored services have changed, check the message log.

## KNAS16004-E

The acquisition of monitor settings has failed. The specified Web transaction is already deleted and does not exist. The screen will be refreshed. service group name=aa....aa, service name=bb....bb, monitored target name=cc....cc

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

### Description

The specified Web transaction has already been deleted by another user.

(S)

Refreshes the window.

(O)

Check the most recent list of monitored services.

If you want to see which Web transactions have changed, check the message log.

#### KNAS16005-E

The acquisition of monitor settings has failed. An error occurred during processing of SLM - Manager (Slave). service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc* 

aa....aa: Service group name

bb....bb: Service name

cc....cc: Monitored target name

#### Description

An error occurred during processing of a slave instance of SLM - Manager.

#### (S)

Interrupts processing.

#### (O)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

## KNAS16100-I

A monitor item was set. service group name=aa....aa, service name=bb....bb, monitored target name=cc....cc

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

*cc....cc*: Name of the monitored target

### KNAS16101-E

The setting of monitor items has failed. The specified service is already deleted and does not exist. The screen will be refreshed. service group name=aa...aa, service name=bb....bb, monitored target name=cc...cc

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

#### Description

The specified monitored service has already been deleted by another user.

(S)

Refreshes the window.

(O)

Check the most recent list of monitored services.

If you want to see which monitored services have changed, check the message log.

## KNAS16102-E

The setting of monitor items has failed. An error occurred during a database operation. service group name=*aa*....*aa*, service name=*bb*....*bb*, monitored target name=*cc*....*cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

(S)

Suspends processing and returns to the login window.

#### (O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager **DB Service** (service name: HiRDBEmbeddedEdition\_JL0). If this does not resolve the problem, contact a system administrator.

### KNAS16103-E

The setting of monitor items has failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

(S)

Suspends processing.

#### (O)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

#### KNAS16104-E

The setting of monitor items has failed. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

#### bb....bb: Name of the monitored service

JP1/Service Level Management Description

#### cc....cc: Name of the monitored target

### Description

An error occurred while setting monitoring items.

### (S)

Suspends processing and returns to the login window.

### (0)

Contact a system administrator.

## KNAS16105-E

The setting of monitor items has failed. The processing timed out. Wait for a while and retry.

### Description

Because another user was executing an operation that cannot be executed at the same time, it was necessary to wait for the earlier processing to be completed. However, a timeout occurred because the earlier processing had not finished after waiting for at least 10 seconds.

## (S)

Suspends processing.

## (0)

Wait a while, and then retry the operation.

# KNAS16107-E

The setting of monitor items has failed. The operation cannot be performed, as the monitored status of the specified service is "Starting". Stop the service monitoring and then retry. service group name=aa....aa, service name=bb....bb, monitored target name=cc....cc

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

### Description

Monitoring of the specified monitored service is starting. Monitoring of a monitored service cannot be set up while the service is being monitored.

### (S)

Suspends processing.

### (O)

Stop monitoring of the monitored service, and then retry the operation.

## KNAS16108-E

The setting of monitor items has failed. The operation cannot be performed, as a detection process by a different user is in progress. Wait for a while and retry. detection type=*aa*....*aa* 

### aa....aa: Type of detection

### Description

Another user is detecting monitored services. Other operations cannot be executed on monitored services during detection.

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions
- (S)

Suspends processing.

#### (O)

Wait until the detection processing that the other user is executing has been completed, and then retry the operation.

### KNAS16109-E

The setting of monitor items has failed. A command having an exclusive relationship is in progress. Wait for a while and retry.

#### Description

The processing cannot be executed because a command that is in an exclusive relationship is running.

(S)

Suspends the processing.

#### (O)

Wait for the command that is in an exclusive relationship to complete its execution, and then retry the operation.

## KNAS16110-E

The setting of monitor items has failed. The specified Web transaction is already deleted and does not exist. The screen will be refreshed. service group name=aa...aa, service name=bb....bb, monitored target name=cc...cc

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

### Description

The specified Web transaction has already been deleted by another user.

(S)

Refreshes the window.

(O)

Check the most recent list of monitored services.

If you want to see which Web transactions have changed, check the message log.

# KNAS16111-E

The setting of monitor items has failed. An error occurred during processing of SLM - Manager (Slave). service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc* 

## aa....aa: Service group name

bb....bb: Service name

cc....cc: Monitored target name

## Description

An error occurred during processing of a slave instance of SLM - Manager.

## (S)

Interrupts processing.

### (O)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

## KNAS16200-I

The event status was changed to "Read". maintenance information=aa....aa

aa....aa: Event ID

# KNAS16201-E

Event status change has failed. An error occurred during a database operation. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

### (S)

Suspends processing and returns to the login window.

(O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0). If this does not resolve the problem, contact a system administrator.

# KNAS16202-E

Event status change has failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

#### (S)

Suspends processing.

## (O)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

# KNAS16203-E

Event status change has failed. service group name=aa....aa, service name=bb....bb, monitored target name=cc....cc

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

#### Description

An error occurred during processing of the change in event status.

### (S)

Suspends processing and returns to the login window.

# (O)

Contact a system administrator.

# KNAS16204-E

Event status update has failed. The specified event and service are already deleted and do not exist. The screen will be refreshed. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

### bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

## Description

The specified event and monitored service have already been deleted by another user.

(S)

Refreshes the window.

## (0)

Check the most recent list of monitored services.

If you want to see which monitored services have changed, check the message log.

# KNAS16205-E

Event status update has failed. The specified event and Web transaction are already deleted and do not exist. The screen will be refreshed. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

## Description

The specified event and Web transaction have already been deleted by another user.

(S)

Refreshes the window.

#### (O)

Check the most recent list of monitored services.

If you want to see which Web transactions have changed, check the message log.

# KNAS16206-E

Event status update has failed. The specified event and monitor item are already deleted and do not exist. The screen will be refreshed. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

### Description

The specified event and monitoring item have already been deleted by another user.

(S)

Refreshes the window.

# (0)

Check the latest configuration information.

## KNAS16207-E

Event status update has failed. An error occurred during processing of SLM - Manager (Slave).

### Description

An error occurred during processing of a slave instance of SLM - Manager.

(S)

Interrupts processing.

### (O)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

# KNAS16300-I

Service monitoring was started. service group name=aa....aa, service name=bb....bb

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

# KNAS16301-E

The starting of service monitoring has failed. The specified service is already deleted and does not exist. The screen will be refreshed. service group name=aa...aa, service name=bb....bb

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

Description

The specified monitored service has already been deleted by another user.

(S)

Refreshes the window.

### (0)

Check the most recent monitored services and monitoring statuses.

If you want to see which monitored services have changed, check the message log.

# KNAS16302-E

The starting of service monitoring has failed. During processing for the SLM - Manager, an inter-process communication error occurred in the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

(S)

Suspends processing of the relevant monitored service, and continues processing of other monitored services.

(0)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS16303-E

The starting of service monitoring has failed. During processing for the SLM - UR, an inter-process communication error occurred in the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb*, SLM - UR IP address=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

```
cc....cc: IP address of SLM - UR
```

(S)

Suspends the affected SLM - UR processing, and continues other SLM - UR processing.

#### (0)

Wait a while, and then retry the operation. If the problem reoccurs, restart SLM - UR or the services that comprise SLM - Manager.

# KNAS16304-E

The starting of service monitoring has failed. A communication error occurred between the SLM - UR and the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb*, SLM - UR IP address=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

*cc....cc*: IP address of SLM - UR

(S)

Suspends the affected SLM - UR processing, and continues other SLM - UR processing.

(O)

Check the communication environment between SLM - UR and SLM - Manager. If there is a problem with the communication environment, restart the SLM - UR service and the services that comprise SLM - Manager.

11. Messages

# KNAS16305-E

The starting of service monitoring has failed. An error occurred during processing for the SLM - UR. service group name=*aa....aa*, service name=*bb....bb*, SLM - UR IP address=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: IP address of SLM - UR

(S)

Suspends the affected SLM - UR processing, and continues other SLM - UR processing.

#### (O)

Check the messages output to the SLM - UR message log, and then take corrective action.

### KNAS16306-E

In the starting of service monitoring, the SLM - Manager post-processing failed.

Description

An error occurred during post-processing of the SLM - Manager in which an error occurred.

(S)

Suspends processing for all specified monitored services.

(O)

Check the message that was output immediately before this message and take corrective action. Restart the services that comprise SLM - Manager as necessary.

# KNAS16307-E

In the starting of service monitoring, the SLM - UR post-processing failed. SLM - UR IP address=aa....aa

## aa....aa: IP address of SLM - UR

Description

An error occurred during post-processing of the SLM - UR where an error occurred.

(S)

Suspends processing for all specified monitored services.

#### (O)

Check the message that was output immediately before this message and take corrective action. Restart SLM - UR and the services that comprise SLM - Manager as necessary.

# KNAS16308-E

For some of the specified services, the starting of service monitoring has failed. An error occurred during the starting of service monitoring.

### Description

An error occurred while monitoring of at least one of the specified monitored services was starting.

(S)

Continues processing.

### (0)

Check the most recent monitoring status from the window.

With respect to the monitored service for which processing failed, check the message log and take corrective action according to the message that was output immediately before this message.

# KNAS16309-E

For all of the specified services, the starting of service monitoring has failed. An error occurred during a database operation.

### (S)

Suspends processing for all specified monitored services and returns to the login window.

#### (O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

# KNAS16310-E

For all of the specified services, the starting of service monitoring has failed. An inter-process communication error occurred in the SLM - Manager.

#### Description

A communications error occurred during SLM - Manager processing.

### (S)

Suspends processing for all specified monitored services.

#### (O)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

# KNAS16311-E

For all of the specified services, the starting of service monitoring has failed.

### Description

An error occurred while monitoring of the monitored services was starting.

#### (S)

Suspends processing for all specified monitored services and returns to the login window.

#### (O)

Contact a system administrator.

# KNAS16312-E

The starting of service monitoring has failed. The processing timed out. Wait for a while and retry.

### Description

Because another user was executing an operation that cannot be executed at the same time, it was necessary to wait for the earlier processing to be completed. However, a timeout occurred because the earlier processing had not finished after waiting for at least 10 seconds.

### (S)

Suspends processing.

### (0)

Wait a while, and then retry the operation.

# KNAS16314-E

For all of the specified services, the starting of service monitoring has failed. An error occurred during postprocessing in the starting of service monitoring.

### Description

An error occurred during post-processing of the SLM - UR or SLM - Manager in which an error had occurred while monitoring of monitored services was starting.

#### (S)

Suspends processing for all specified monitored services and returns to the login window.

# (O)

Check the message log and take corrective action according to the message that was output immediately before this message.

# KNAS16315-E

The starting of service monitoring has failed. An error occurred during a database operation in the SLM - Manager processing. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

# bb....bb: Name of the monitored service

#### 11. Messages

JP1/Service Level Management Description

(S)

Suspends processing of the affected monitored service, and continues processing of other monitored services.

(O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0). If this does not resolve the problem, contact a system administrator.

# KNAS16316-E

The starting of service monitoring has failed. An error occurred during the processing for SLM - Manager. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

Description

An error occurred while monitoring of a monitored service for SLM - Manager was starting.

(S)

Suspends processing of the affected monitored service, and continues processing of other monitored services.

# (O)

Restart the services that comprise SLM - Manager.

# KNAS16317-E

The starting of service monitoring will be stopped, as the number of services that can be monitored at a time will exceed the maximum. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

# Description

The specified number of services for which monitoring is to be started has exceeded the maximum number of monitored services that can be monitored at the same time.

(S)

Suspends processing of the affected monitored service, and continues processing of other monitored services.

(O)

If you want to start monitoring a new monitored service, stop monitoring of another monitored service before starting the new monitoring.

# KNAS16318-E

The starting of service monitoring has failed. The SLM - UR version you are using to monitor the specified service cannot monitor a service by specifying its path. service group name=*aa....aa*, service name=*bb....bb*, SLM - UR IP address=*cc....cc*, version=*dd....dd* 

*aa....aa*: Name of the service group to which the monitored service belongs

- bb....bb: Name of the monitored service
- cc....cc: IP address of SLM UR
- dd....dd: Version of SLM UR

#### (S)

Suspends processing.

### (O)

Use SLM - UR version 09-51 or later to monitor the specified monitored service.

# KNAS16319-E

The starting of service monitoring has failed. The SLM - UR version you are using to monitor the specified service cannot monitor a Web transaction. service group name=*aa....aa*, service name=*bb....bb*, SLM - UR IP address=*cc....cc*, version=*dd....dd* 

aa....aa: Name of the service group to which the monitored service belongs

- bb....bb: Name of the monitored service
- cc....cc: IP address of SLM UR
- dd....dd: Version of SLM UR

### (S)

Suspends processing.

#### (O)

Use SLM - UR version 09-51 or later to monitor the specified monitored service.

## KNAS16320-E

The starting of service monitoring has failed. The SLM - UR version you are using to monitor the specified service cannot monitor a service by specifying its port. service group name=*aa....aa*, service name=*bb....bb*, SLM - UR IP address=*cc....cc*, version=*dd....dd* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

#### cc....cc: IP address of SLM - UR

JP1/Service Level Management Description

## dd....dd: Version of SLM - UR

### (S)

Suspends processing.

### (0)

Use SLM - UR version 09-51 or later to monitor the specified monitored service.

## KNAS16321-E

The starting of service monitoring has failed. The operation cannot be performed, as a detection process by a different user is in progress. Wait for a while and retry. detection type=*aa....aa* 

#### aa....aa: Type of detection

### Description

Another user is performing detection. Other operations cannot be executed on monitored services while detection processing is underway.

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions
- (S)

Suspends processing.

### (0)

Wait until the detection processing that the other user is executing has been completed, and then retry the operation.

# KNAS16322-E

The starting of service monitoring has failed. A command having an exclusive relationship is in progress. Wait for a while and retry.

## Description

The processing cannot be executed because a command that is in an exclusive relationship is running.

(S)

Suspends the processing.

#### (O)

Wait for the command that is in an exclusive relationship to complete its execution, and then retry the operation.

# KNAS16323-W

For a monitor item of the specified service, the starting of monitor has failed. An error occurred during the starting of the monitor item.

### Description

An error occurred during startup processing of monitoring items in one or more of the specified services.

(S)

Continues processing.

### (O)

Check the most recent monitoring status from the window.

Check the message log for the monitoring items for which processing failed, and take corrective action according to the message that was output immediately before this message.

# KNAS16324-E

The starting of a service monitor item has failed. During the processing for SLM - Manager, an inter-process communication error occurred in the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

### Description

An inter-process communications error occurred in SLM - Manager while monitoring of a monitoring item was starting for an SLM - Manager service.

#### (S)

Suspends monitoring startup processing of the monitoring items of the service.

### (O)

Wait a while, and then retry the operation. If the problem reoccurs, restart the SLM - Manager service.

## KNAS16325-E

The starting of service monitoring has failed. The operation cannot be performed, as a configuration information refreshing by a different user is in progress. Wait for a while and retry.

#### Description

The processing cannot be executed because another user is updating the configuration information.

#### (S)

Suspends processing.

#### (O)

Wait for updating of the configuration information to be completed, and then try again. If the problem reoccurs, restart the SLM - Manager service.

## KNAS16400-I

Service monitoring was stopped. service group name=aa....aa, service name=bb....bb

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

### KNAS16401-E

The stopping of service monitoring has failed. The specified service is already deleted and does not exist. The screen will be refreshed. service group name=*aa*...*aa*, service name=*bb*...*bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

#### Description

The specified monitored service has already been deleted by another user.

### (S)

Refreshes the window.

#### (O)

Check the most recent monitored services and monitoring statuses.

If you want to see which monitored services have changed, check the message log.

## KNAS16402-E

The stopping of service monitoring has failed. During the processing for SLM - Manager, an inter-process communication error occurred in the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored the service belongs

bb....bb: Name of the monitored service

#### Description

An inter-process communications error occurred in SLM - Manager while monitoring of a monitored service for SLM - Manager was stopping.

#### (S)

Suspends processing. In the case of a forced stop, continues processing.

#### (O)

Check whether monitoring of the relevant service has stopped. If it has not stopped, wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

# KNAS16403-E

The stopping of service monitoring has failed. During the processing for SLM - UR, an inter-process communication error occurred in the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb*, SLM - UR IP address=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: IP address of SLM - UR

(S)

Suspends the affected SLM - UR processing, and continues other SLM - UR processing.

#### (O)

Check whether monitoring of the affected service has stopped. If it has not stopped, wait a while, and then retry the operation. If the problem reoccurs, restart SLM - UR and the services that comprise SLM - Manager.

### KNAS16404-E

The stopping of service monitoring has failed. A communication error occurred between the SLM - UR and the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb*, SLM - UR IP address=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: IP address of SLM - UR

(S)

Suspends the affected SLM - UR processing, and continues other SLM - UR processing.

#### (O)

Check whether monitoring of the affected service has stopped. If it has not stopped, check the communication environment between SLM - UR and SLM - Manager. If there is a problem with the communication environment, restart the SLM - UR service and the services that comprise SLM - Manager.

### KNAS16405-E

The stopping of service monitoring has failed. An error occurred during the SLM - UR processing. service group name=*aa....aa*, service name=*bb....bb*, SLM - UR IP address=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: IP address of SLM - UR

#### (S)

Suspends the affected SLM - UR processing, and continues other SLM - UR processing.

11. Messages

### (O)

Check whether monitoring of the affected service has stopped. If it has not stopped, check the messages output to the SLM - UR message log, and then take corrective action.

# KNAS16407-E

In the stopping of service monitoring, the SLM - UR post-processing failed. SLM - UR IP address=aa....aa

aa....aa: IP address of SLM - UR

#### Description

An error occurred during post-processing of the SLM - UR where an error occurred.

#### (S)

Suspends processing for all specified monitored services.

#### (O)

Check the message in the message log that was output immediately before this message and take corrective action. If necessary, restart SLM - UR and the services that comprise SLM - Manager.

### KNAS16408-E

For some of the specified services, the stopping of service monitoring has failed. An error occurred during the stopping of service monitoring.

#### Description

An error occurred while monitoring of at least one monitored service was stopping.

#### (S)

Continues processing.

#### (O)

Check the most recent monitoring status from the window.

With respect to a monitored service where processing failed, check the message log, and then take corrective action according to the message that was output immediately before this message.

## KNAS16409-E

For all of the specified services, the stopping of service monitoring has failed. An error occurred during a database operation.

#### (S)

Suspends processing for all specified monitored services and returns to the login window.

### (O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0). If this does not resolve the problem, contact a system administrator.

# KNAS16410-E

For all of the specified services, the stopping of service monitoring has failed. An inter-process communication error occurred in the SLM - Manager.

# (S)

Suspends processing for all specified monitored services.

### (O)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

# KNAS16411-E

For all of the specified services, the stopping of service monitoring has failed.

### Description

An error occurred while monitoring of a monitored service was stopping.

### (S)

Suspends processing for all specified monitored services and returns to the login window.

#### (O)

Contact a system administrator.

## KNAS16412-E

The stopping of service monitoring has failed. The processing timed out. Wait for a while and retry.

## Description

Because another user was executing an operation that cannot be executed at the same time, it was necessary to wait for the earlier processing to be completed. However, a timeout occurred because the earlier processing had not finished after waiting for at least 10 seconds.

#### (S)

Suspends processing.

### (0)

Wait a while, and then retry the operation.

## KNAS16414-W

The SLM - UR service is being stopped. The stopping of service monitoring will continue. SLM - UR IP address=*aa*....*aa* 

*aa....aa*: IP address of SLM - UR

#### (S)

Continues processing, with the exception of the processing for the SLM - UR service SLM - User Response Service (service name: JP1\_ITSLM\_UR\_Service), which is being stopped.

#### (O)

If you need to do processing for the SLM - UR service SLM - User Response Service after this message has been output, start the SLM - UR service SLM - User Response Service.

### KNAS16415-E

For all of the specified services, the stopping of service monitoring has failed. An error occurred during postprocessing in the stopping of service monitoring.

#### Description

An error occurred during post-processing of the SLM - UR or SLM - Manager where an error occurred while monitoring of monitored services was stopping.

(S)

Suspends processing for all the specified services and returns to the login window.

(O)

Check the message log and take corrective action according to the message that was output immediately before this message.

#### KNAS16416-E

The stopping of service monitoring has failed. An error occurred during a database operation in the SLM - Manager processing. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

(S)

Suspends processing of the affected monitored service, and continues processing of other monitored services. In the case of a forced stop, continues processing.

(O)

Check whether monitoring of the affected service has stopped. If it has not stopped, restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

## KNAS16417-E

The stopping of service monitoring has failed. An error occurred during the processing for SLM - Manager. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

(S)

Suspends processing of the affected monitored service, and continues processing of other monitored services. In the case of a forced stop, continues processing.

(O)

Check whether monitoring of the affected service has stopped. If it has not stopped, restart the services that comprise SLM - Manager.

# KNAS16418-E

The stopping of service monitoring has failed. The operation cannot be performed, as a detection process by a different user is in progress. Wait for a while and retry. detection type=*aa....aa* 

### aa....aa: Type of detection

### Description

Another user is performing detection. Other operations cannot be executed on monitored services while detection processing is underway.

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

(S)

Suspends processing.

(O)

Wait until the detection processing that the other user is executing has been completed, and then retry the operation.

## KNAS16419-W

For a monitor item of the specified service, the stopping of the monitor has failed. An error occurred during the stopping of the monitor item.

#### Description

An error occurred while monitoring of a monitoring item in one or more of the specified services was stopping.

(S)

Continues processing.

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(O)

Check the most recent monitoring status from the window.

Check the message log for the monitoring item for which processing failed, and take corrective action according to the message that was output immediately before this message.

# KNAS16420-E

The stopping of a service monitor item has failed. During the processing for SLM - Manager, an inter-process communication error occurred in the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

Description

An inter-process communications error occurred in SLM - Manager while monitoring of a monitoring item was stopping for an SLM - Manager service.

(S)

Continues processing.

(0)

Wait a while, and then retry the operation. If the problem reoccurs, restart the SLM - Manager service.

## KNAS16421-I

Service monitoring was forced to be stopped. service group name=aa....aa, service name=bb....bb

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

# KNAS16422-E

The forced stopping of service monitoring has failed. An error occurred during a database operation.

## Description

An error occurred in a database operation.

(S)

Suspends processing and returns to the login window.

### (O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

## KNAS16423-E

The forced stopping of service monitoring has failed. During the processing for SLM - Manager, an inter-process communication error occurred in the SLM - Manager.

### Description

An inter-process communications error occurred in SLM - Manager.

### (S)

Suspends processing.

## (0)

If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS16424-E

The stopping of service monitoring has failed. The operation cannot be performed, as a configuration information refreshing by a different user is in progress. Wait for a while and retry.

### Description

The processing cannot be executed because another user is updating the configuration information.

(S)

Suspends processing.

### (O)

Wait for the updating of the configuration information to be completed, and then try again. If the problem reoccurs, restart the services that comprise SLM - Manager.

# KNAS16425-E

In the stopping of a service monitor item, the SLM - Manager post-processing failed.

## Description

An error occurred during post-processing of the SLM - Manager where an error occurred.

(S)

Suspends processing for all specified monitored services.

(O)

Check in the message log for the message that was output immediately before this message and take corrective action.

If necessary, restart the services that comprise SLM - Manager.

# KNAS16426-E

Starting of service monitoring failed. An error occurred during the SLM - Manager(Slave) processing.

### Description

An error occurred during processing of a slave instance of SLM - Manager.

### (S)

Interrupts processing.

### (O)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

# KNAS16427-E

Stopping of service monitoring failed. An error occurred during the SLM - Manager(Slave) processing.

### Description

An error occurred during processing of a slave instance of SLM - Manager.

### (S)

Interrupts processing.

## (0)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

# KNAS16500-E

The acquisition of a services list has failed. An error occurred during a database operation. service group name=*aa*....*aa* 

#### aa....aa: Name of the service group

Description

An error occurred in a database operation. If the error occurred during the initialization process or before the name of the service group was obtained, service group name = "" is displayed.

#### (S)

Suspends processing and returns to the login window.

# (0)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

# KNAS16501-E

The acquisition of a services list has failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa*....*aa* 

#### *aa....aa*: Name of the service group

### Description

An inter-process communications error occurred in SLM - Manager. If the error occurred during the initialization process or before the name of the service group was obtained, service group name = "" is displayed.

(S)

Suspends processing.

(O)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

### KNAS16502-E

The acquisition of a services list has failed. service group name=aa....aa

#### aa....aa: Name of the service group

### Description

An error occurred while acquiring the list of services. If the error occurred during the initialization process or before the name of the service group was obtained, service group name = "" is displayed.

(S)

Suspends the processing and returns to the login window.

#### (O)

Contact a system administrator.

## KNAS16503-E

The acquisition of a services list has failed. The operation cannot be performed, as a configuration information refreshing by a different user is in progress. Wait for a while and retry.

#### Description

The processing cannot be executed because another user is updating the configuration information.

(S)

Suspends processing.

(O)

Wait for the updating of the configuration information to be completed, and then try again. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS16504-E

The acquisition of a services list has failed. An error occurred during processing of SLM - Manager (Slave).

#### Description

An error occurred during processing of a slave instance of SLM - Manager.

## (S)

Interrupts processing.

### (0)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

# KNAS16600-E

The acquisition of service performance information has failed. An error occurred during a database operation.

### (S)

Suspends processing and returns to the login window.

### (O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

# KNAS16601-E

The acquisition of service performance information has failed. An inter-process communication error occurred in the SLM - Manager.

# (S)

Suspends processing.

#### (0)

If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS16602-E

The acquisition of service performance information has failed. The operation cannot be performed, as a configuration information refreshing by a different user is in progress. Wait for a while and retry.

## Description

The processing cannot be executed because another user is updating the configuration information.

(S)

Suspends processing.

# (O)

Wait for the updating of the configuration information to be completed, and then try again. If the problem reoccurs, restart the services that comprise SLM - Manager.

# KNAS16603-E

The acquisition of service performance information has failed. An error occurred during processing of SLM - Manager (Slave).

### Description

An error occurred during processing of a slave instance of SLM - Manager.

(S)

Interrupts processing.

### (O)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

# KNAS16700-E

The acquisition of a events list has failed. An error occurred during a database operation.

### (S)

Suspends processing and returns to the login window.

#### (O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0). If this does not resolve the problem, contact a system administrator.

# KNAS16701-E

The acquisition of a events list has failed. An inter-process communication error occurred in the SLM - Manager.

#### (S)

Suspends processing.

#### (O)

If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS16702-E

The acquisition of a events list has failed. The operation cannot be performed, as a configuration information refreshing by a different user is in progress. Wait for a while and retry.

#### Description

The processing cannot be executed because another user is updating the configuration information.

### (S)

Suspends processing.

### (0)

Wait for the updating of the configuration information to be completed, and then try again. If the problem reoccurs, restart the services that comprise SLM - Manager.

# KNAS16703-E

Failed to acquire an events list. An error occurred during processing of SLM - Manager (Slave).

#### Description

An error occurred during processing of a slave instance of SLM - Manager.

(S)

Interrupts processing.

#### (O)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

## KNAS16800-E

The acquisition of a performance chart has failed. An error occurred during a database operation. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc* 

aa....aa: Name of the service group to which monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

(S)

Suspends processing and returns to the login window.

#### (O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

#### KNAS16801-E

The acquisition of a performance chart has failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa*....*aa*, service name=*bb*....*bb*, monitored target name=*cc*....*cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

<sup>11.</sup> Messages

JP1/Service Level Management Description

(S)

Suspends processing.

(O)

If the problem reoccurs, restart the services that comprise SLM - Manager.

# KNAS16802-E

The acquisition of a performance chart of the specified monitored item has failed. An error occurred during a database operation.

# Description

An error occurred in a database operation.

(S)

Suspends processing and returns to the login window.

## (0)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

# KNAS16803-E

The acquisition of a performance chart of the specified monitored item has failed. An inter-process communication error occurred in the SLM - Manager.

# Description

An inter-process communications error occurred in SLM - Manager.

(S)

Suspends processing.

# (O)

If the problem reoccurs, restart the services that comprise SLM - Manager.

# KNAS16804-E

The acquisition of a performance chart has failed. An error occurred during processing of SLM - Manager (Slave). service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc* 

aa....aa: Service group name

## bb....bb: Service name

cc....cc: Monitored target name

### Description

An error occurred during processing of a slave instance of SLM - Manager.

### (S)

Interrupts processing.

### (0)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

# KNAS16805-E

The acquisition of a performance chart of the specified monitored item has failed. An error occurred during processing of SLM - Manager (Slave).

## Description

An error occurred during processing of a slave instance of SLM - Manager.

### (S)

Interrupts processing.

## (O)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

# KNAS16900-E

The acquisition of the service group status summary has failed. An error occurred during a database operation.

## (S)

Suspends processing and returns to the login window.

## (0)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

## KNAS16901-E

The acquisition of the service group status summary has failed. An inter-process communication error occurred in the SLM - Manager.

## (S)

Suspends processing.

#### (O)

If the problem reoccurs, restart the services that comprise SLM - Manager.

# KNAS16902-E

The acquisition of the service group status summary has failed. The operation cannot be performed, as a configuration information refreshing by a different user is in progress. Wait for a while and retry.

### Description

The processing cannot be executed because another user is updating the configuration information.

(S)

Suspends processing.

(0)

Wait for the updating of the configuration information to be completed, and then try again. If the problem reoccurs, restart the services that comprise SLM - Manager.

# KNAS16903-E

The acquisition of the service group status summary has failed. An error occurred during processing of SLM - Manager (Slave).

### Description

An error occurred during processing of a slave instance of SLM - Manager.

(S)

Interrupts processing.

(O)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

# KNAS17000-E

The acquisition of warning services has failed. An error occurred during a database operation.

(S)

Suspends processing and returns to the login window.

## (O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

# KNAS17001-E

The acquisition of warning services has failed. An inter-process communication error occurred in the SLM - Manager.

## (S)

Suspends processing.

### (O)

If the problem reoccurs, restart the services that comprise SLM - Manager.

# KNAS17002-E

The acquisition of warning services has failed. The operation cannot be performed, as a configuration information refreshing by a different user is in progress. Wait for a while and retry.

## Description

The processing cannot be executed because another user is updating the configuration information.

(S)

Suspends processing.

### (0)

Wait for the updating of the configuration information to be completed, and then try again. If the problem reoccurs, restart the services that comprise SLM - Manager.

# KNAS17003-E

The acquisition of warning services has failed. An error occurred during processing of SLM - Manager (Slave).

## Description

An error occurred during processing of a slave instance of SLM - Manager.

(S)

Interrupts processing.

#### (0)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

## KNAS17300-E

Report data update has failed. The specified service is already deleted and does not exist. The screen will be refreshed. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

## Description

The specified monitored service has already been deleted by another user.

(S)

Refreshes the window.

(O)

Check the most recent list of monitored services.

If you want to see which monitored services have changed, check the message log.

# KNAS17301-E

Report data update has failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

(S)

Suspends processing.

(O)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

# KNAS17302-E

Report data update has failed. An error occurred during a database operation. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

(S)

Suspends processing and returns to the login window.

(O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

# KNAS17303-E

Report data update has failed. The specified Web transaction is already deleted and does not exist. The screen will be refreshed. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc* 

<sup>11.</sup> Messages

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

## Description

The specified Web transaction has already been deleted by another user.

(S)

Refreshes the window.

# (O)

Check the most recent list of monitored services.

If you want to see which Web transactions have changed, check the message log.

# KNAS17304-E

Report data update has failed. An error occurred during processing of SLM - Manager (Slave). service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc* 

aa....aa: Service group name

bb....bb: Service name

cc....cc: Monitored target name

### Description

An error occurred during processing of a slave instance of SLM - Manager.

(S)

Interrupts processing.

(0)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

# KNAS17400-E

The update of report chart data has failed. The specified service is already deleted and does not exist. The screen will be refreshed. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

#### Description

The specified monitored service has already been deleted by another user.

(S)

Refreshes the window.

(O)

Check the most recent list of monitored services.

If you want to see which monitored services have changed, check the message log.

# KNAS17401-E

The update of report chart data has failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa*....*aa*, service name=*bb*....*bb*, monitored target name=*cc*....*cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

(S)

Suspends processing.

(O)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

# KNAS17402-E

The update of report chart data has failed. An error occurred during a database operation. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

(S)

Suspends processing and returns to the login window.

(0)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

# KNAS17403-E

The update of report chart data has failed. The specified Web transaction is already deleted and does not exist. The screen will be refreshed. service group name=*aa...aa*, service name=*bb....bb*, monitored target name=*cc....cc* 

<sup>11.</sup> Messages

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

## Description

The specified Web transaction has already been deleted by another user.

(S)

Refreshes the window.

# (O)

Check the most recent list of monitored services.

If you want to see which Web transactions have changed, check the message log.

# KNAS17404-E

The update of report chart data has failed. An error occurred during processing of SLM - Manager (Slave). service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc* 

aa....aa: Service group name

bb....bb: Service name

cc....cc: Monitored target name

### Description

An error occurred during processing of a slave instance of SLM - Manager.

(S)

Interrupts processing.

(0)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

# KNAS17500-I

The report was output. service group name=aa....aa, service name=bb....bb, monitored target name=cc....cc

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

# KNAS17501-E

Report data output has failed. The specified service is already deleted and does not exist. service group name=*aa*....*aa*, service name=*bb*....*bb*, monitored target name=*cc*....*cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

#### Description

The specified monitored service has already been deleted by another user.

#### (S)

Outputs an empty CSV file and continues processing.

#### (O)

Log in again to check the latest status of the registered monitored services, and then select from among the monitored services that are present.

### KNAS17502-E

Report data output has failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

*cc....cc*: Name of the monitored target

#### (S)

Suspends processing.

#### (O)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

### KNAS17503-E

Report data output has failed. An error occurred during a database operation. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

#### (S)

Suspends processing and returns to the login window.

<sup>11.</sup> Messages

### (O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0). If this does not resolve the problem, contact a system administrator.

# KNAS17504-E

Report data output has failed. The specified Web transaction is already deleted and does not exist. service group name=*aa*....*aa*, service name=*bb*....*bb*, monitored target name=*cc*....*cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

## Description

The specified Web transaction has already been deleted by another user.

### (S)

Outputs an empty CSV file and continues processing.

#### (O)

Select a Web transaction that occurs in the registered monitored services when they have been updated to their latest status. By logging in again, you can see the latest status of the registered monitored services.

## KNAS17505-E

Report data output has failed. An error occurred during processing of SLM - Manager (Slave). service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc* 

aa....aa: Service group name

bb....bb: Service name

*cc....cc*: Monitored target name

## Description

An error occurred during processing of a slave instance of SLM - Manager.

### (S)

Interrupts processing.

## (O)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

# KNAS17540-E

Template acquisition has failed. An error occurred during processing of SLM - Manager (Slave). service group name=*aa....aa*, service name=*bb....bb* 

### aa....aa: Service group name

bb....bb: Service name

## Description

An error occurred during processing of a slave instance of SLM - Manager.

### (S)

Interrupts processing.

### (0)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

# KNAS17541-E

Template saving has failed. An error occurred during processing of SLM - Manager (Slave). service group name=*aa....aa*, service name=*bb....bb* 

### aa....aa: Service group name

bb....bb: Service name

### Description

An error occurred during processing of a slave instance of SLM - Manager.

#### (S)

Interrupts processing.

#### (O)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

# KNAS17542-E

Template deletion has failed. An error occurred during processing of SLM - Manager (Slave). service group name=*aa....aa*, service name=*bb....bb* 

#### aa....aa: Service group name

bb....bb: Service name

## Description

An error occurred during processing of a slave instance of SLM - Manager.

#### (S)

Interrupts processing.

# (O)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

# KNAS17543-E

The acquisition of template setting information has failed. An error occurred during processing of SLM - Manager (Slave). service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Service group name

bb....bb: Service name

Description

An error occurred during processing of a slave instance of SLM - Manager.

(S)

Interrupts processing.

### (O)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

# KNAS17561-E

Template acquisition has failed. An error occurred during a database operation. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

Description

An error occurred in a database operation.

(S)

Suspends processing and returns to the login window.

(O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

# KNAS17562-E

Template acquisition has failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

#### bb....bb: Name of the monitored service

#### Description

An inter-process communications error occurred in SLM - Manager.

#### (S)

Suspends processing.

### (0)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS17564-E

Template saving has failed. The specified template is already deleted and does not exist. The screen will be refreshed. service group name=*aa....aa*, service name=*bb....bb*, template name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the template

### Description

The specified template has already been deleted by another user.

(S)

Refreshes the window.

#### (0)

Check the saved status of the most recent templates, and then specify a template that exists.

## KNAS17565-E

Template deletion has failed. The specified template is already deleted and does not exist. The screen will be refreshed. service group name=*aa....aa*, service name=*bb....bb*, template name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the template

### Description

The specified template has already been deleted by another user.

(S)

Refreshes the window.

### (0)

Check the saved status of the most recent templates, and then specify a template that exists.

### KNAS17566-E

Template saving has failed. The number of templates has reached the upper limit. service group name=*aa....aa*, service name=*bb....bb*, template name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the template

#### Description

The template cannot be registered because the number of registered templates has reached the maximum.

(S)

Suspends processing.

(O)

Delete unwanted templates from the saved templates, and then create and save the new template.

### KNAS17567-E

Template saving has failed. A template with the specified template name already exists. service group name=*aa....aa*, service name=*bb....bb*, template name=*cc....cc*, operation type=*dd....dd* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the template

dd....dd: Type of operation

#### Description

A template with the specified template name has already been saved by another user. The meanings of the operation types are as follows:

- ADD: Add template
- EDIT: Edit template

(S)

Suspends processing.

(O)

Change the template name so that it is unique, and then save the template again.

### KNAS17568-E

Template acquisition has failed. service group name=aa....aa, service name=bb....bb

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

#### Description

An error occurred while retrieving the template.

#### (S)

Suspends processing and returns to the login window.

### (0)

Contact a system administrator.

## KNAS17569-E

Template acquisition has failed. The specified service is already deleted and does not exist. The screen will be refreshed. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

*bb....bb*: Name of the monitored service

#### Description

The specified service has already been deleted by another user.

(S)

Refreshes the window.

#### (O)

Check the updated services.

Check the message log to see which services have changed.

## KNAS17570-E

The acquisition of template setting information has failed. An error occurred during a database operation. service group name=*aa*....*aa*, service name=*bb*....*bb*, template name=*cc*....*cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the template

Description

An error occurred in a database operation.

(S)

Suspends processing and returns to the login window.

(O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

## KNAS17571-E

The acquisition of template setting information has failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb*, template name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

*cc....cc*: Name of the template

## Description

An inter-process communications error occurred in SLM - Manager.

#### (S)

Suspends processing.

#### (0)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS17572-E

The acquisition of template setting information has failed. service group name=*aa....aa*, service name=*bb....bb*, template name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

*cc....cc*: Name of the template

### Description

An error occurred while retrieving template settings information.

## (S)

Suspends processing.

## (0)

Restart the SLM - Manager services. If the problem reoccurs, contact a system administrator.

## KNAS17573-E

The acquisition of template setting information has failed. The specified service is already deleted and does not exist. The screen will be refreshed. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

#### Description

The specified service has already been deleted by another user.

#### (S)

Refreshes the window.

#### (O)

Check the updated services.

Check the message log to see which services have changed.

## KNAS17574-E

The acquisition of template setting information has failed. The specified template is already deleted and does not exist. The screen will be refreshed. service group name=*aa*....*aa*, service name=*bb*....*bb*, template name=*cc*....*cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the template

### Description

The specified template has already been deleted by another user.

### (S)

Refreshes the window.

### (O)

Check the saved status of the most recent templates, and then specify a template that exists.

## KNAS17575-I

The template was saved. service group name=*aa....aa*, service name=*bb....bb*, template name=*cc....cc*, operation type=*dd....dd* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

### cc....cc: Name of the template

### dd....dd: Type of operation

JP1/Service Level Management Description

### Description

The meanings of the operation types are as follows:

- ADD: Add template
- EDIT: Edit template

## KNAS17576-E

Template saving has failed. The specified service is already deleted and does not exist. The screen will be refreshed. service group name=*aa....aa*, service name=*bb....bb*, operation type=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Type of operation

## Description

The specified service has already been deleted by another user.

The meanings of the operation types are as follows:

- ADD: Add template
- EDIT: Edit template

### (S)

Refreshes the window.

### (0)

Check the updated services.

Check the message log to see which services have changed.

# KNAS17577-E

Template saving has failed. A command having an exclusive relationship is in progress. Wait for a while and retry. operation type=*aa*....*aa* 

### aa....aa: Type of operation

### Description

The processing cannot be executed because a command that is in an exclusive relationship is running.

The meanings of the operation types are as follows:

- ADD: Add template
- EDIT: Edit template

### (S)

Suspends processing.

# (O)

Wait for the command that is in an exclusive relationship to complete its execution, and then retry the operation.

## KNAS17578-E

Template saving has failed. The processing timed out. Wait for a while and retry. operation type=aa....aa

### aa....aa: Type of operation

#### Description

Because another user was executing an operation that cannot be executed at the same time, it was necessary to wait for the earlier processing to be completed. However, a timeout occurred because the earlier processing had not finished after waiting for at least 10 seconds.

The meanings of the operation types are as follows:

- ADD: Add template
- EDIT: Edit template
- (S)

Suspends processing.

### (O)

Wait a while, and then retry the operation.

## KNAS17579-E

Template saving has failed. An error occurred during a database operation. service group name=*aa....aa*, service name=*bb....bb*, template name=*cc....cc*, operation type=*dd....dd* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the template

dd....dd: Type of operation

#### Description

An error occurred in a database operation.

The meanings of the operation types are as follows:

- ADD: Add template
- EDIT: Edit template

#### (S)

Suspends processing and returns to the login window.

### (O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

## KNAS17580-E

Template saving has failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb*, template name=*cc....cc*, operation type=*dd....dd* 

aa....aa: Name of the service group to which the monitored service belongs

*bb....bb*: Name of the monitored service

cc....cc: Name of the template

*dd....dd*: Type of operation

#### Description

An inter-process communications error occurred in SLM - Manager. The meanings of the operation types are as follows:

- ADD: Add template
- EDIT: Edit template

#### (S)

Suspends processing.

### (O)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

### KNAS17581-E

Template saving has failed. The operation cannot be performed, as a detection process by a different user is in progress. Wait for a while and retry. detection type=*aa....aa*, operation type=*bb....bb* 

#### aa....aa: Type of detection

#### bb....bb: Type of operation

#### Description

Monitored services or Web transactions are being detected by another user. Other operations on templates cannot be performed while detection processing is underway.

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

The meanings of the operation types are as follows:

- ADD: Add template
- EDIT: Edit template

(S)

Suspends processing.

## (O)

Wait until the detection processing that the other user is executing has been completed, and then retry the operation.

### KNAS17582-E

Template saving has failed. service group name=*aa....aa*, service name=*bb....bb*, template name=*cc....cc*, operation type=*dd....dd* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

- cc....cc: Name of the template
- dd....dd: Type of operation

#### Description

An error occurred while saving a template.

The meanings of the operation types are as follows:

- ADD: Add template
- EDIT: Edit template
- (S)

Suspends processing and returns to the login window.

(O)

Contact a system administrator.

### KNAS17583-I

The template was deleted. service group name=aa....aa, service name=bb....bb, template name=cc....cc

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

*cc....cc*: Name of the template

### KNAS17584-E

Template deletion has failed. The specified service is already deleted and does not exist. The screen will be refreshed. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

#### Description

The specified monitored service has already been deleted by another user.

#### (S)

Refreshes the window.

#### (O)

Check the most recent list of monitored services.

Check the message log if you want to see which monitored services have changed.

## KNAS17585-E

Template deletion has failed. A command having an exclusive relationship is in progress. Wait for a while and retry.

### Description

The processing cannot be executed because a command that is in an exclusive relationship is running.

#### (S)

Suspends processing.

### (O)

Wait for the command that is in an exclusive relationship to complete its execution, and then retry the operation.

## KNAS17586-E

Template deletion has failed. The processing timed out. Wait for a while and retry.

#### Description

Because another user was executing an operation that cannot be executed at the same time, it was necessary to wait for the earlier processing to be completed. However, a timeout occurred because the earlier processing had not finished after waiting for at least 10 seconds.

#### (S)

Suspends processing.

### (O)

Wait a while, and then retry the operation.

## KNAS17587-E

Template deletion has failed. An error occurred during a database operation. service group name=*aa....aa*, service name=*bb....bb*, template name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

### bb....bb: Name of the monitored service

JP1/Service Level Management Description

#### cc....cc: Name of the template

#### Description

An error occurred in a database operation.

#### (S)

Suspends processing and returns to the login window.

#### (O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0). If this does not resolve the problem, contact a system administrator.

## KNAS17588-E

Template deletion has failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb*, template name=*cc....cc* 

- aa....aa: Name of the service group to which the monitored service belongs
- bb....bb: Name of the monitored service
- cc....cc: Name of the template

#### Description

An inter-process communications error occurred in SLM - Manager.

(S)

Suspends processing.

#### (O)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

### KNAS17589-E

Template deletion has failed. The operation cannot be performed, as a detection process by a different user is in progress. Wait for a while and retry. detection type=aa...aa

### *aa....aa*: Type of detection

#### Description

Monitored services or Web transactions are being detected by another user. Other operations on templates cannot be performed while detection processing is underway.

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

(S)

Suspends processing.

(O)

Wait until the detection processing that the other user is executing has been completed, and then retry the operation.

## KNAS17590-E

Template deletion has failed. service group name=aa....aa, service name=bb....bb, template name=cc....cc

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the template

### Description

An error occurred while deleting a template.

#### (S)

Suspends processing and returns to the login window.

### (O)

Contact a system administrator.

## KNAS17591-I

The report was output. service group name=*aa....aa*, service name=*bb....bb*, template name=*cc....cc*, operation type=*dd....dd* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the template

### dd....dd: Type of operation

### Description

The meanings of the operation types are as follows:

- GUI: Display in the Template Preview window
- CSV: Output to a CSV file

# KNAS17592-E

Report output has failed. The specified service is already deleted and does not exist. The screen will be refreshed. service group name=*aa....aa*, service name=*bb....bb*, operation type=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

*bb....bb*: Name of the monitored service

cc....cc: Type of operation

#### Description

The specified monitored service has already been deleted by another user. The meanings of the operation types are as follows:

• GUI: Display in the Template Preview window

- CSV: Output to a CSV file
- (S)

Refreshes the window.

(O)

Check the most recent list of monitored services.

Check the message log if you want to see which monitored services have changed.

## KNAS17593-E

Report output has failed. The specified template is already deleted and does not exist. The screen will be refreshed. service group name=*aa*....*aa*, service name=*bb*....*bb*, template name=*cc*....*cc*, operation type=*dd*....*dd* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the template

#### dd....dd: Type of operation

### Description

The specified template has already been deleted by another user.

The meanings of the operation types are as follows:

- GUI: Display in the Template Preview window
- CSV: Output to a CSV file

## (S)

Refreshes the window.

(O)

Check the saved status of the most recent templates, and then specify a template that exists.

# KNAS17594-E

Report output has failed. An error occurred during a database operation. service group name=*aa....aa*, service name=*bb....bb*, template name=*cc....cc*, operation type=*dd....dd* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

- cc....cc: Name of the template
- dd....dd: Type of operation

#### Description

An error occurred in a database operation.

The meanings of the operation types are as follows:

- GUI: Display in the Template Preview window
- CSV: Output to a CSV file
- (S)

Suspends processing and returns to the login window.

#### (O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

## KNAS17595-E

Report output has failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb*, template name=*cc....cc*, operation type=*dd....dd* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the template

#### dd....dd: Type of operation

### Description

An inter-process communications error occurred in SLM - Manager.

The meanings of the operation types are as follows:

- GUI: Display in the Template Preview window
- CSV: Output to a CSV file
- (S)

Suspends processing.

(O)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS17596-E

Report output has failed. service group name=*aa....aa*, service name=*bb....bb*, template name=*cc....cc*, operation type=*dd....dd* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the template

dd....dd: Type of operation

#### Description

An error occurred during report output processing.

The meanings of the operation types are as follows:

- GUI: Display in the Template Preview window
- CSV: Output to a CSV file

#### (S)

Suspends processing and returns to the login window.

### (O)

Contact a system administrator.

### KNAS17597-E

Report output has failed. The operation cannot be performed, as a configuration information refreshing by a different user is in progress. Wait for a while and retry.

#### Description

The processing cannot be executed because another user is updating the configuration information.

#### (S)

Suspends processing.

#### (O)

Wait for the updating of the configuration information to be completed, and then try again. If the problem reoccurs, restart the services that comprise SLM - Manager.

### KNAS17598-E

The acquisition of template setting information has failed. The operation cannot be performed, as a configuration information refreshing by a different user is in progress. Wait for a while and retry.

#### Description

The processing cannot be executed because another user is updating the configuration information.

(S)

Suspends processing.

(O)

Wait for the updating of the configuration information to be completed, and then try again. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS17600-I

A Web transaction was registered. service group name=*aa....aa*, service name=*bb....bb*, Web transaction name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the Web transaction belonging to the monitored service

## KNAS17601-E

Web transaction registration has failed. The specified Web transaction name is already registered in the same service. service group name=*aa....aa*, service name=*bb....bb*, Web transaction name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the Web transaction belonging to the monitored service

Description

The names of Web transactions belonging to a monitored service must be unique within the monitored service. The name of the Web transaction represented by *cc....cc* is already registered within the same monitored service.

(S)

Suspends processing.

#### (O)

Revise the name of the Web transaction. Use a name that is not registered within the same monitored service.

### KNAS17602-E

Web transaction registration has failed. An error occurred during a database operation. service group name=*aa*....*aa*, service name=*bb*...*bb*, Web transaction name=*cc*....*cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the Web transaction belonging to the monitored service

(S)

Suspends processing and returns to the login window.

(O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

## KNAS17603-E

Web transaction registration has failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb*, Web transaction name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the Web transaction belonging to the monitored service

(S)

Suspends processing.

(O)

Wait a while, and then retry the operation. If the problem re-occurs, communication with SLM - UR might have failed. Check the message log (UserResponseMessageM[N].log). If there is no problem in the message log, restart the services that comprise SLM - Manager.

## KNAS17604-E

Web transaction registration has failed. service group name=*aa....aa*, service name=*bb....bb*, Web transaction name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the Web transaction belonging to the monitored service

### Description

An error occurred while registering the Web transaction.

(S)

Suspends processing and returns to the login window.

(O)

Contact a system administrator.

## KNAS17605-E

Web transaction registration has failed. The processing timed out. Wait for a while and retry.

#### Description

Because another user was executing an operation that cannot be executed at the same time, it was necessary to wait for the earlier processing to be completed. However, a timeout occurred because the earlier processing had not finished after waiting for at least 10 seconds.

#### (S)

Suspends processing.

#### (O)

Wait a while, and then retry the operation.

#### KNAS17606-E

Web transaction registration has failed. The operation cannot be performed, as a detection process by a different user is in progress. Wait for a while and retry. detection type=*aa....aa* 

#### *aa....aa*: Type of detection

#### Description

Another user is performing detection. Other operations on Web transactions cannot be performed while detection processing is underway.

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

#### (S)

Suspends processing.

#### (O)

Wait until the detection processing that the other user is executing has been completed, and then retry the operation.

### KNAS17607-E

Web transaction registration has failed. The SLM - UR version you are using to monitor the service being registered cannot monitor a Web transaction. service group name=*aa*....*aa*, service name=*bb*....*bb*, SLM - UR IP address=*cc*....*cc*, version=*dd*....*dd* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

#### cc....cc: IP address of SLM - UR

#### dd....dd: Version of SLM - UR

11. Messages

JP1/Service Level Management Description

### (S)

Suspends processing.

#### (O)

Use version 09-51 or later of SLM - UR to monitor the monitored service into which the Web transaction is to be registered.

## KNAS17608-E

Web transaction registration has failed. The operation cannot be performed, as the monitored status of the service being registered is "Starting". Stop the service monitoring and then retry. service group name=aa....aa, service name=bb....bb

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

(S)

Suspends processing.

(0)

Stop the monitoring of the monitored service into which the Web transaction is to be registered, and then retry the operation.

### KNAS17609-E

Web transaction registration has failed. The service being registered is already deleted and does not exist. The screen will be refreshed. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

#### Description

The monitored service into which the Web transaction is to be registered has already been deleted by another user.

(S)

Suspends processing.

(O)

Check the most recent list of monitored services.

Check the message log if you want to see which monitored services have changed.

## KNAS17610-E

Web transaction registration has failed. A command having an exclusive relationship is in progress. Wait for a while and retry.

#### Description

The processing cannot be executed because a command that is in an exclusive relationship is running.

(S)

Suspends processing.

(O)

Wait for the command that is in an exclusive relationship to complete its execution, and then retry the operation.

## KNAS17611-E

Web transaction registration has failed. The number of registered Web transactions has reached the upper limit.

#### Description

An attempt to register a Web transaction failed. The number of registered Web transactions has reached the maximum.

(S)

Suspends processing.

#### (0)

Check the list of Web transactions. If the number of Web transactions on the list of Web transactions does not appear to reach the maximum, log in again.

# KNAS17612-E

Web transaction registration has failed. An error occurred during the SLM - Manager(Slave) processing. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Service group name

bb....bb: Service name

Description

An error occurred during processing of a slave instance of SLM - Manager.

(S)

Interrupts processing.

#### (0)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

## KNAS17700-I

A Web transaction was deleted. service group name=aa....aa, service name=bb....bb, Web transaction name=cc....cc

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

#### KNAS17701-E

Web transaction deletion has failed. The specified Web transaction is already deleted and does not exist. The screen will be refreshed. service group name=*aa....aa*, service name=*bb....bb*, Web transaction name=*cc....cc* 

- aa....aa: Name of the service group to which the monitored service belongs
- bb....bb: Name of the monitored service
- cc....cc: Name of the Web transaction belonging to the monitored service

#### Description

The specified Web transaction has already been deleted by another user.

#### (S)

Refreshes the window.

#### (O)

Check the most recent list of monitored services.

To see which Web transactions have changed, check the message log.

### KNAS17702-E

Web transaction deletion has failed. An error occurred during a database operation. service group name=*aa....aa*, service name=*bb....bb*, Web transaction name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the Web transaction belonging to the monitored service

#### (S)

Suspends processing and returns to the login window.

#### (O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

### KNAS17703-E

Web transaction deletion has failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb*, Web transaction name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

<sup>11.</sup> Messages

cc....cc: Name of the Web transaction belonging to the monitored service

(S)

Suspends processing.

(O)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS17704-E

Web transaction deletion has failed. service group name=*aa....aa*, service name=*bb....bb*, Web transaction name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the Web transaction belonging to the monitored service

## Description

An error occurred while deleting a Web transaction.

(S)

Suspends processing and returns to the login window.

(0)

Contact a system administrator.

# KNAS17705-E

Web transaction deletion has failed. The processing timed out. Wait for a while and retry.

## Description

Because another user was executing an operation that cannot be executed at the same time, it was necessary to wait for the earlier processing to be completed. However, a timeout occurred because the earlier processing had not finished after waiting for at least 10 seconds.

(S)

Suspends processing.

(O)

Wait a while, and then retry the operation.

## KNAS17706-E

Web transaction deletion has failed. The operation cannot be performed, as a detection process by a different user is in progress. Wait for a while and retry. detection type=*aa....aa* 

#### aa....aa: Type of detection

#### Description

Another user is performing detection. Other operations on Web transactions cannot be performed while detection processing is underway.

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions
- (S)

Suspends processing.

#### (O)

Wait until the detection processing that the other user is executing has been completed, and then retry the operation.

### KNAS17707-E

Web transaction deletion has failed. The operation cannot be performed, as the service monitored status of the specified Web transaction is "Starting". Stop the service monitoring and then retry. service group name=*aa....aa*, service name=*bb....bb*, Web transaction name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the Web transaction belonging to the monitored service

#### Description

Monitoring is starting for the monitored service to which the specified Web transaction belongs. Deletion of a Web transaction cannot be performed while monitoring is starting.

(S)

Suspends processing.

(O)

Stop the monitoring of the monitored service to which the affected Web transaction belongs, and then retry the operation.

## KNAS17708-E

Web transaction deletion has failed. A command having an exclusive relationship is in progress. Wait for a while and retry.

### Description

The processing cannot be executed because a command that is in an exclusive relationship is running.

(S)

Suspends processing.

#### (O)

Wait for the command that is in an exclusive relationship to complete its execution, and then retry the operation.

## KNAS17709-E

Web transaction deletion has failed. The service for the specified Web transaction is already deleted and does not exist. The screen will be refreshed. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

### Description

The monitored service of the specified Web transaction has already been deleted by another user.

(S)

Refreshes the window.

(O)

Check the most recent list of monitored services.

Check the message log if you want to see which monitored services have changed.

## KNAS17710-E

Web transaction deletion has failed. An error occurred during the SLM - Manager(Slave) processing. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Service group name

#### bb....bb: Service name

### Description

An error occurred during processing of a slave instance of SLM - Manager.

(S)

Interrupts processing.

### (O)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

## KNAS17800-E

An attempt to acquire the access log failed. An error occurred while a database operation was being performed. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

Description

An error occurred while a database operation was being performed.

(S)

Suspends processing and returns to the login window.

(O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

## KNAS17801-E

The number of access log entries matching the specified filter conditions exceeds the upper limit of 5,000.

Description

The number of access log entries matching the specified filter conditions exceeds 5,000.

(S)

Processing continues on the first 5,000 access logs chronologically in order of response times.

(0)

Specify new filter conditions and redisplay the access logs.

## KNAS17802-E

An attempt to acquire the access log failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

Description

An inter-process communication error occurred in SLM - Manager.

(S)

Suspends processing.

(O)

Wait a while, and then retry the operation. If the problem re-occurs, communication with SLM - UR might have failed. Check the message  $\log(UserResponseMessageM[N].log)$ . If there is no problem in the message  $\log_{N}$  restart the services that comprise SLM - Manager.

### KNAS17803-E

An attempt to acquire the access log failed. service group name=aa....aa, service name=bb....bb

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

#### Description

An error occurred while acquiring the access log.

#### (S)

Suspends processing and returns to the login window.

#### (O)

Contact a system administrator.

### KNAS17804-I

No displayable access logs exist.

### Description

No displayable access logs exist.

#### (S)

Displays no access logs.

(O)

Change the filter conditions or the logging range shown in the dotted line, and then redisplay the access logs. If the problem reoccurs, check the following:

- SLM UR is version 10-10 or later.
- The value specified for accessLogFilePath in the SLM UR system definition.

## KNAS17805-W

An attempt to acquire one or more access log failed. service group name=aa....aa, service name=bb....bb

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

#### Description

An error occurred while acquiring an access log.

#### (S)

Continues processing using only the acquired access logs.

#### (O)

Check the messages output to the SLM - UR message log, and then take the appropriate corrective action.

## KNAS17806-E

An attempt to acquire the access log failed. service group name=aa....aa, service name=bb....bb

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

### Description

An attempt to acquire the access log failed.

(S)

Suspends processing.

(0)

Check the message log. If an error message was output immediately before this message, take the corrective action for that error.

If the problem reoccurs, contact a system administrator.

## KNAS17807-E

An attempt to acquire the access log failed. The SLM - UR service was not running. SLM - UR IP address=aa....aa

aa....aa: IP address of SLM - UR

### Description

SLM - UR is not running.

#### (S)

Suspends processing.

### (0)

Check that SLM - Manager has started successfully.

### KNAS17808-E

An attempt to acquire the access log failed. An error occurred during processing of SLM - Manager (Slave). service group name=aa....aa, service name=bb....bb

#### Description

An error occurred during processing of a slave instance of SLM - Manager.

(S)

Interrupts processing.

#### (O)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

## KNAS18100-I

The sequential position of a Web transaction was updated. service group name=aa....aa, service name=bb....bb, Web transaction name=cc....cc

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the Web transaction belonging to the monitored service

## KNAS18101-E

The update of the sequential position of a Web transaction has failed. An error occurred during a database operation. service group name=aa....aa, service name=bb....bb, Web transaction name=cc....cc

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the Web transaction belonging to the monitored service

(S)

Suspends processing and returns to the login window.

(O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

## KNAS18102-E

The update of the sequential position of a Web transaction has failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb*, Web transaction name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

<sup>11.</sup> Messages

JP1/Service Level Management Description

cc....cc: Name of the Web transaction belonging to the monitored service

#### (S)

Suspends processing.

(0)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS18103-E

The update of the sequential position of a Web transaction has failed. service group name=*aa....aa*, service name=*bb....bb*, Web transaction name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the Web transaction belonging to the monitored service

### Description

An error occurred while updating the order of Web transactions.

#### (S)

Suspends processing and returns to the login window.

#### (O)

Contact a system administrator.

## KNAS18104-E

The update of the sequential position of a Web transaction has failed. The processing timed out. Wait for a while and retry.

### Description

Because another user was executing an operation that cannot be executed at the same time, it was necessary to wait for the earlier processing to be completed. However, a timeout occurred because the earlier processing had not finished after waiting for at least 10 seconds.

#### (S)

Suspends processing.

(O)

Wait a while, and then retry the operation.

# KNAS18105-E

The update of the sequential position of a Web transaction has failed. The operation cannot be performed, as a detection process by a different user is in progress. Wait for a while and retry. detection type=*aa*....*aa* 

<sup>11.</sup> Messages

#### aa....aa: Type of detection

#### Description

Another user is performing detection. Other operations on Web transactions cannot be performed while detection processing is underway.

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

#### (S)

Suspends processing.

#### (0)

Wait until the detection processing that the other user is executing has been completed, and then retry the operation.

### KNAS18106-E

The update of the sequential position of a Web transaction has failed. The operation cannot be performed, as the monitored status of the service being updated is "Starting". Stop the service monitoring and then retry. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

#### Description

Monitoring is starting for the monitored service that is the update destination. A Web transaction cannot be edited while its monitored service is being monitored.

#### (S)

Suspends processing.

#### (O)

Stop the monitoring of the monitored service that is the update destination, and then retry the operation.

#### KNAS18107-E

The update of the sequential position of a Web transaction has failed. The specified Web transaction is already deleted and does not exist. The screen will be refreshed. service group name=aa....aa, service name=bb...bb, Web transaction name=cc...cc

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

#### cc....cc: Name of the Web transaction

JP1/Service Level Management Description

(S)

Refreshes the window.

(O)

Check the most recent list of monitored services.

Check the message log if you want to see which monitored services have changed.

# KNAS18108-E

The update of the sequential position of a Web transaction has failed. The sequential position of the specified Web transaction is already updated. The screen will be refreshed. service group name=aa....aa, service name=bb....bb, Web transaction name=cc....cc

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the Web transaction

(S)

Refreshes the window.

(0)

Check the most recent list of monitored services.

Check the message log if you want to see which monitored services have changed.

# KNAS18109-E

The update of the sequential position of a Web transaction has failed. The service for the specified Web transaction is already deleted and does not exist. The screen will be refreshed. service group name=aa....aa, service name=bb....bb

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

Description

The monitored service of the specified Web transaction has already been deleted by another user.

(S)

Refreshes the window.

(0)

Check the most recent list of monitored services.

Check the message log if you want to see which monitored services have changed.

## KNAS18110-E

The update of the sequential position of a Web transaction has failed. A command having an exclusive relationship is in progress. Wait for a while and retry.

### Description

The processing cannot be executed because a command that is in an exclusive relationship is running.

(S)

Suspends processing.

(O)

Wait for the command that is in an exclusive relationship to complete its execution, and then retry the operation.

# KNAS18111-E

The update of the sequential position of a Web transaction has failed. An error occurred during the SLM - Manager(Slave) processing. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Service group name

```
bb....bb: Service name
```

### Description

An error occurred during processing of a slave instance of SLM - Manager.

(S)

Interrupts processing.

(O)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

## KNAS18200-E

The acquisition of a Web transactions list has failed. An error occurred during a database operation. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

(S)

Suspends processing and returns to the login window.

(O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

## KNAS18201-E

The acquisition of a Web transactions list has failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

(S)

Suspends processing.

(O)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

### KNAS18202-E

The acquisition of a Web transactions list has failed. service group name=aa....aa, service name=bb....bb

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

#### Description

An error occurred while retrieving the list of Web transactions.

(S)

Suspends processing and returns to the login window.

(O)

Contact a system administrator.

## KNAS18203-E

The acquisition of a Web transactions list has failed. An error occurred during processing of SLM - Manager (Slave). service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Service group name

bb....bb: Service name

Description

An error occurred during processing of a slave instance of SLM - Manager.

(S)

Interrupts processing.

#### (0)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

### KNAS18300-I

A Web transaction was edited. service group name=aa....aa, service name=bb....bb, Web transaction name=cc....cc

aa....aa: Name of the service group to which the monitored service belongs

*bb....bb*: Name of the monitored service

cc....cc: Name of the Web transaction

## KNAS18301-E

The editing of a Web transaction has failed. The specified Web transaction name is already registered in the same service. service group name=*aa*....*aa*, service name=*bb*....*bb*, Web transaction name=*cc*....*cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the Web transaction

Description

The Web transaction name must be unique within the monitored service.

(S)

Suspends processing.

(0)

Revise the Web transaction name. Use a name that is not registered within the same monitored service.

## KNAS18302-E

The editing of a Web transaction has failed. An error occurred during a database operation. service group name=*aa....aa*, service name=*bb....bb*, Web transaction name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the Web transaction

#### (S)

Suspends processing and returns to the login window.

## (0)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager **DB Service** (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

### KNAS18303-E

The editing of a Web transaction has failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb*, Web transaction name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

- bb....bb: Name of the monitored service
- cc....cc: Name of the Web transaction

#### (S)

Suspends processing.

#### (0)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

### KNAS18304-E

The editing of a Web transaction has failed. service group name=*aa....aa*, service name=*bb....bb*, Web transaction name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the Web transaction

#### Description

An error occurred while editing a Web transaction.

#### (S)

Suspends processing and returns to the login window.

#### (O)

Contact a system administrator.

### KNAS18305-E

The editing of a Web transaction has failed. The processing timed out. Wait for a while and retry.

#### Description

Because another user was executing an operation that cannot be executed at the same time, it was necessary to wait for the earlier processing to be completed. However, a timeout occurred because the earlier processing had not finished after waiting for at least 10 seconds.

#### (S)

Suspends processing.

## (O)

Wait a while, and then retry the operation.

## KNAS18306-E

The editing of a Web transaction has failed. The operation cannot be performed, as a detection process by a different user is in progress. Wait for a while and retry. detection type=*aa....aa* 

aa....aa: Type of detection

### Description

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

#### (S)

Suspends processing.

#### (O)

Wait for the detection processing that the other user is running to be completed, and then retry the operation.

## KNAS18307-E

The editing of a Web transaction has failed. The operation cannot be performed, as the monitored status of the service being edited is "Starting". Stop the service monitoring and then retry. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

Description

Monitoring is starting for the monitored service that is the edit destination. A Web transaction cannot be edited while its monitored service is being monitored.

(S)

Suspends processing.

(O)

Stop the monitoring of the monitored service that is the edit destination, and then retry the operation.

## KNAS18308-E

The editing of a Web transaction has failed. The specified Web transaction is already deleted and does not exist. The screen will be refreshed. service group name=aa...aa, service name=bb....bb, Web transaction name=cc...cc

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the Web transaction

## Description

The specified Web transaction has already been deleted by another user.

(S)

Refreshes the window.

## (O)

Check the most recent list of monitored services.

Check the message log if you want to see which monitored services have changed.

# KNAS18309-E

The editing of a Web transaction has failed. The service for the specified Web transaction is already deleted and does not exist. The screen will be refreshed. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

## Description

The monitored service of the specified Web transaction has already been deleted by another user.

(S)

Refreshes the window.

### (O)

Check the most recent list of monitored services.

Check the message log if you want to see which monitored services have changed.

# KNAS18310-E

The editing of a Web transaction has failed. A command having an exclusive relationship is in progress. Wait for a while and retry.

## Description

The processing cannot be executed because a command that is in an exclusive relationship is running.

(S)

Suspends processing.

### (O)

Wait for the command that is in an exclusive relationship to complete its execution, and then retry the operation.

## KNAS18311-E

The editing of a Web transaction has failed. An error occurred during the SLM - Manager(Slave) processing. service group name=aa....aa, service name=bb....bb

#### aa....aa: Service group name

bb....bb: Service name

#### Description

An error occurred during processing of a slave instance of SLM - Manager.

(S)

Interrupts processing.

(O)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

### KNAS18400-I

Configuration information was refreshed. service group name=aa....aa, service name=bb....bb

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

## KNAS18401-E

The refreshing of configuration information has failed. The specified service is already deleted and does not exist. The screen will be refreshed. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

*bb....bb*: Name of the monitored service

### Description

The specified monitored service has already been deleted by another user.

(S)

Refreshes the window.

(O)

Check the most recent list of monitored services.

If you want to see which monitored services have changed, check the message log.

## KNAS18402-E

The refreshing of configuration information has failed. An error occurred during a database operation. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

### Description

An error occurred in a database operation.

### (S)

Suspends processing and returns to the login window.

#### (O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

## KNAS18403-E

The refreshing of configuration information has failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

#### Description

An inter-process communications error occurred in SLM - Manager.

(S)

Suspends processing.

#### (O)

Wait a while, and then retry the operation. If the problem reoccurs, restart the SLM - Manager service.

### KNAS18404-E

The refreshing of configuration information has failed. service group name=aa....aa, service name=bb....bb

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

### Description

An error occurred while updating configuration information.

(S)

Suspends processing.

(0)

Take the corrective actions noted below.

If this does not resolve the problem, contact a system administrator.

- Make sure matching SLM host names were specified in SLM Manager and PFM Manager. If the names do not match, correct them so they do match.
- Make sure the Performance Management configuration information did not change when the configuration information was updated. If it did change, try updating the configuration information again.

## KNAS18405-E

The refreshing of configuration information has failed. The processing timed out. Wait for a while and retry.

### Description

Because another user was executing an operation that cannot be executed at the same time, it was necessary to wait for the earlier processing to be completed. However, a timeout occurred because the earlier processing had not finished after waiting for at least 10 seconds.

### (S)

Suspends processing.

### (O)

Wait a while, and then retry the operation.

## KNAS18406-E

The refreshing of configuration information has failed. The operation cannot be performed, as the monitored status of the specified service is "Starting". Stop the service monitoring and then retry. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

### Description

Monitoring is starting for the specified monitored service. Configuration information cannot be updated during monitoring of the monitored service.

### (S)

Suspends processing.

### (O)

Stop the monitoring of the monitored service, and then retry the operation.

# KNAS18407-E

The refreshing of configuration information has failed. The operation cannot be performed, as a detection process by a different user is in progress. Wait for a while and retry. detection type=*aa....aa* 

### aa....aa: Type of detection

### Description

The monitored service or Web transaction is being detected by another user. Other operations cannot be executed on monitored services while detection processing is underway.

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions
- (S)

Suspends processing.

### (O)

Wait until the detection processing that the other user is executing has been completed, and then retry the operation.

## KNAS18408-E

The refreshing of configuration information has failed. A command having an exclusive relationship is in progress. Wait for a while and retry.

### Description

The processing cannot be executed because a command that is in an exclusive relationship is running.

(S)

Suspends processing.

### (O)

Wait for the command that is in an exclusive relationship to complete its execution, and then retry the operation.

## KNAS18409-E

The refreshing of configuration information has failed. A communication error occurred between the PFM - Manager and the SLM - Manager. destination host name=*aa*....*aa*, destination port number=*bb*....*bb* 

aa....aa: PFM - Manager host name

bb....bb: PFM - Manager port number

### Description

A communications error occurred between PFM - Manager and SLM - Manager.

(S)

Suspends processing.

(O)

Check whether PFM - Manager is running. If it is running, check and, if necessary, revise the values specified for the pfmManagerHost and pfmManagerPort properties in the jplitslm.properties system definition file. Also, revise the communication environment between PFM - Manager and SLM - Manager if necessary. If this does not resolve the problem, contact a system administrator.

## KNAS18410-W

Measurement conditions could not be obtained, as the PFM - Agent for Service Response was not running. host name=*aa*....*aa*, agent name=*bb*....*bb* 

aa....aa: PFM - Agent for Service Response host name

bb....bb: PFM - Agent for Service Response monitoring agent name

Description

Measurement conditions could not be obtained because PFM - Agent for Service Response has stopped.

(S)

Continues processing.

(0)

Check whether measurement conditions are required from the PFM - Agent for Service Response whose host name was output. If they are required, start PFM - Agent for Service Response and update the configuration information again.

# KNAS18411-E

The refreshing of configuration information has failed. The configuration information of the specified service is already refreshed by a different user. Retry to refresh the configuration information. service group name=aa....aa, service name=bb....bb

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

Description

An attempt to update configuration information failed. The configuration information of the specified service has already been updated by another user.

(S)

Suspends processing.

(O)

Update the configuration information again.

## KNAS18412-I

System performance monitor settings were saved. service group name=aa....aa, service name=bb....bb

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

# KNAS18413-E

System performance monitor settings have failed. An error occurred during a database operation. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

### Description

An error occurred in a database operation.

### (S)

Suspends processing and returns to the login window.

### (O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0). If this does not resolve the problem, contact a system administrator.

## KNAS18414-E

System performance monitor settings have failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

## Description

An inter-process communications error occurred in SLM - Manager.

# (S)

Suspends processing.

# (O)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS18415-E

System performance monitor settings have failed. The processing timed out. Wait for a while and retry.

#### Description

Because another user was executing an operation that cannot be executed at the same time, it was necessary to wait for the earlier processing to be completed. However, a timeout occurred because the earlier processing had not finished after waiting for at least 10 seconds.

### (S)

Suspends processing.

### (O)

Wait a while, and then retry the operation.

### KNAS18416-E

System performance monitor settings have failed. The specified service is already deleted and does not exist. The screen will be refreshed. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

#### Description

The specified service has already been deleted by another user.

(S)

Refreshes the window.

### (O)

Check the updated services.

Check the message log to see which services have changed.

## KNAS18417-E

System performance monitor settings have failed. The operation cannot be performed, as the monitored status of the specified service is "Starting". Stop the service monitoring and then retry. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

#### Description

Monitoring is starting for the specified monitored service. Configuration information cannot be updated during monitoring of the monitored service.

(S)

Suspends processing.

## (O)

Stop the monitoring of the monitored service, and then retry the operation.

## KNAS18418-E

System performance monitor settings have failed. The operation cannot be performed, as a detection process by a different user is in progress. Wait for a while and retry. detection type=*aa*....*aa* 

### aa....aa: Type of detection

### Description

Monitored services or Web transactions are being detected by another user. Other operations on services cannot be performed while detection processing is underway.

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

### (S)

Suspends processing.

### (0)

Wait until the detection processing that the other user is executing has been completed, and then retry the operation.

## KNAS18419-E

System performance monitor settings have failed. A command having an exclusive relationship is in progress. Wait for a while and retry.

### Description

The processing cannot be executed because a command that is in an exclusive relationship is running.

(S)

Suspends processing.

### (O)

Wait for the command that is in an exclusive relationship to complete its execution, and then retry the operation.

## KNAS18420-I

Availability monitor settings were saved. service group name=aa....aa, service name=bb....bb

aa....aa: Name of the service group to which the monitored service belongs

### bb....bb: Name of the monitored service

JP1/Service Level Management Description

## KNAS18421-E

Availability monitor settings have failed. An error occurred during a database operation. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

### Description

An error occurred in a database operation.

(S)

Suspends processing and returns to the login window.

(O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

## KNAS18422-E

Availability monitor settings have failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

Description

An inter-process communications error occurred in SLM - Manager.

(S)

Suspends processing.

(O)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

# KNAS18423-E

Availability monitor settings have failed. The processing timed out. Wait for a while and retry.

Description

Because another user was executing an operation that cannot be executed at the same time, it was necessary to wait for the earlier processing to be completed. However, a timeout occurred because the earlier processing had not finished after waiting for at least 10 seconds.

(S)

Suspends processing.

## (O)

Wait a while, and then retry the operation.

## KNAS18424-E

Availability monitor settings have failed. The specified service is already deleted and does not exist. The screen will be refreshed. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

### Description

The specified service has already been deleted by another user.

(S)

Refreshes the window.

### (O)

Check the updated services.

Check the message log to see which services have changed.

## KNAS18425-E

Availability monitor settings have failed. The operation cannot be performed, as the monitored status of the specified service is "Starting". Stop the service monitoring and then retry. service group name=aa....aa, service name=bb....bb

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

Description

Monitoring is starting for the specified monitored service. Configuration information cannot be updated during monitoring of the monitored service.

(S)

Suspends processing.

(O)

Stop the monitoring of the monitored service, and then retry the operation.

# KNAS18426-E

Availability monitor settings have failed. The operation cannot be performed, as a detection process by a different user is in progress. Wait for a while and retry. detection type=*aa....aa* 

### aa....aa: Type of detection

JP1/Service Level Management Description

## Description

Monitored services or Web transactions are being detected by another user. Other operations on services cannot be performed while detection processing is underway.

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

## (S)

Suspends processing.

(O)

Wait until the detection processing that the other user is executing has been completed, and then retry the operation.

# KNAS18427-E

Availability monitor settings have failed. A command having an exclusive relationship is in progress. Wait for a while and retry.

## Description

The processing cannot be executed because a command that is in an exclusive relationship is running.

(S)

Suspends processing.

(0)

Wait for the command that is in an exclusive relationship to complete its execution, and then retry the operation.

# KNAS18428-E

The acquisition of configuration information settings has failed. An error occurred during a database operation. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

## Description

An error occurred in a database operation.

## (S)

Suspends processing and returns to the login window.

## (0)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

## KNAS18429-E

The acquisition of configuration information settings has failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

### Description

An inter-process communications error occurred in SLM - Manager.

(S)

Suspends processing.

(O)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS18430-E

The acquisition of configuration information settings has failed. The specified service is already deleted and does not exist. The screen will be refreshed. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

### Description

The specified service has already been deleted by another user.

### (S)

Refreshes the window.

### (0)

Check the updated services.

Check the message log to see which services have changed.

## KNAS18431-E

The acquisition of configuration information differences has failed. An error occurred during a database operation. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

### Description

An error occurred in a database operation.

(S)

Suspends processing and returns to the login window.

(O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

## KNAS18432-E

The acquisition of configuration information differences has failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

Description

An inter-process communications error occurred in SLM - Manager.

(S)

Suspends processing.

(O)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS18433-E

The acquisition of configuration information differences has failed. The specified service is already deleted and does not exist. The screen will be refreshed. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

Description

The specified service has already been deleted by another user.

(S)

Refreshes the window.

(0)

Check the updated services.

Check the message log to see which services have changed.

## KNAS18434-E

The acquisition of configuration information differences has failed. The operation cannot be performed, as the monitored status of the specified service is "Starting". Stop the service monitoring and then retry. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

Description

Monitoring is starting for the specified monitored service. Configuration information cannot be updated during monitoring of the monitored service.

(S)

Suspends processing.

(0)

Stop the monitoring of the monitored service, and then retry the operation.

## KNAS18435-E

System performance monitor settings have failed. The configuration information of the specified service is already refreshed by a different user. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

Description

An attempt to set system performance monitoring failed. The configuration information for the specified monitored service has already been updated by another user.

(S)

Suspends processing.

(O)

Check the latest configuration information. Try setting system performance monitoring again.

## KNAS18436-E

Availability monitor settings have failed. The configuration information of the specified service is already refreshed by a different user. service group name=aa....aa, service name=bb....bb

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

## Description

An attempt to set availability monitoring failed. The configuration information for the specified monitored service has already been updated by another user.

(S)

Suspends processing.

(O)

Check the latest configuration information. Try setting availability monitoring again.

# KNAS18437-E

The acquisition of configuration information differences has failed. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

## Description

An error occurred while obtaining differential configuration information.

## (S)

Suspends processing and returns to the login window.

## (0)

Contact a system administrator.

# KNAS18438-E

The refreshing of configuration information has failed.

## Description

An error occurred while updating configuration information.

## (S)

Suspends processing and returns to the login window.

## (0)

Contact a system administrator.

# KNAS18439-E

The refreshing of configuration information has failed. An error occurred during data conversion.

# Description

An error occurred during data conversion processing.

## (S)

Suspends processing.

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS18440-E

The acquisition of configuration information differences has failed. An error occurred during data conversion.

## Description

An error occurred during data conversion processing.

(S)

Suspends processing.

## (0)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

# KNAS18441-E

System performance monitor settings have failed. The specified monitor item is already registered by a different user. Delete the monitor item that caused the error. service group name=*aa....aa*, service name=*bb....bb*, host name=*cc....cc*, monitored target name=*dd....dd*, monitor item name=*ee....ee* 

aa....aa: Name of the service group to which the monitored service belongs

- bb....bb: Name of the monitored service
- cc....cc: Host name
- dd....dd: Name of the monitored target
- ee....ee: Name of the monitoring item

## Description

An attempt to set system performance monitoring failed. The specified monitoring item was already registered by another user.

(S)

Suspends processing.

(O)

Delete the failed monitoring item.

# KNAS18442-E

The acquisition of configuration information differences has failed. The system could not request the processing from the PFM - Manager. destination host name=*aa....aa*, destination port number=*bb....bb* 

## aa....aa: PFM - Manager host name

JP1/Service Level Management Description

bb....bb: PFM - Manager port number

Description

The version of the Performance Manager at the linkage destination is not the version assumed by SLM.

(S)

Suspends processing.

## (O)

Make sure the version of PFM - Manager being linked to is at least as recent as the version that is assumed by SLM.

# KNAS18443-E

The acquisition of configuration information differences has failed. The processing timed out. Wait for a while and retry.

# Description

Because another user was executing an operation that cannot be executed at the same time, it was necessary to wait for the earlier processing to be completed. However, a timeout occurred because the earlier processing had not finished after waiting for at least 10 seconds.

## (S)

Suspends processing.

(O)

Wait a while, and then retry the operation.

# KNAS18444-E

The acquisition of configuration information differences has failed. The operation cannot be performed, as a detection process by a different user is in progress. Wait for a while and retry. detection type=aa....aa

## aa....aa: Type of detection

## Description

Monitored services or Web transactions are being detected by another user. Other operations cannot be executed on monitored services while detection processing is underway.

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

## (S)

Suspends processing.

(O)

Wait until the detection processing that the other user is executing has been completed, and then retry the operation.

## KNAS18445-E

The acquisition of configuration information differences has failed. A command having an exclusive relationship is in progress. Wait for a while and retry.

## Description

The processing cannot be executed because a command that is in an exclusive relationship is running.

(S)

Suspends processing.

(0)

Wait for the command that is in an exclusive relationship to complete its execution, and then retry the operation.

## KNAS18446-E

The acquisition of configuration information differences has failed. The operation cannot be performed, as a configuration information refreshing by a different user is in progress. Wait for a while and retry.

## Description

The processing cannot be executed because another user is updating the configuration information.

(S)

Suspends processing.

### (0)

Wait for the updating of the configuration information to be completed, and then try again. If the problem reoccurs, restart the services that comprise SLM - Manager.

# KNAS18447-E

The refreshing of configuration information has failed. The operation cannot be performed, as a configuration information refreshing by a different user is in progress. Wait for a while and retry.

## Description

The processing cannot be executed because another user is updating the configuration information.

(S)

Suspends processing.

(O)

Wait for the updating of the configuration information to be completed, and then try again. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS18448-E

The acquisition of configuration information settings has failed. The operation cannot be performed, as a configuration information refreshing by a different user is in progress. Wait for a while and retry.

### Description

The processing cannot be executed because another user is updating the configuration information.

(S)

Suspends processing.

(O)

Wait for the updating of the configuration information to be completed, and then try again. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS18449-E

System performance monitor settings have failed. The operation cannot be performed, as a configuration information refreshing by a different user is in progress. Wait for a while and retry.

## Description

The processing cannot be executed because another user is updating the configuration information.

(S)

Suspends processing.

(0)

Wait for the updating of the configuration information to be completed, and then try again. If the problem reoccurs, restart the services that comprise SLM - Manager.

# KNAS18450-E

Availability monitor settings have failed. The operation cannot be performed, as a configuration information refreshing by a different user is in progress. Wait for a while and retry.

## Description

The processing cannot be executed because another user is updating the configuration information.

(S)

Suspends processing.

(0)

Wait for the updating of the configuration information to be completed, and then try again. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS18451-E

The acquisition of configuration information differences has failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Service group name

bb....bb: Service name

### Description

An inter-process communications error occurred in SLM - Manager.

#### (S)

Suspends processing.

### (O)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS18452-E

System performance monitor settings have failed. An error occurred during processing of SLM - Manager (Slave). service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Service group name

bb....bb: Service name

### Description

An error occurred during processing of a slave instance of SLM - Manager.

(S)

Interrupts processing.

(O)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

## KNAS18453-E

Availability monitor settings have failed. An error occurred during processing of SLM - Manager (Slave). service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Service group name

bb....bb: Service name

### Description

An error occurred during processing of a slave instance of SLM - Manager.

(S)

Interrupts processing.

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

# KNAS18500-E

The acquisition of system performance information has failed. An error occurred during a database operation.

## Description

An error occurred in a database operation.

(S)

Suspends processing and returns to the login window.

### (O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

# KNAS18501-E

The acquisition of system performance information has failed. An inter-process communication error occurred in the SLM - Manager.

## Description

An inter-process communications error occurred in SLM - Manager.

(S)

Suspends processing.

(0)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

# KNAS18502-E

The acquisition of system performance information has failed. The operation cannot be performed, as a configuration information refreshing by a different user is in progress. Wait for a while and retry.

## Description

The processing cannot be executed because another user is updating the configuration information.

(S)

Suspends processing.

### (O)

Wait for the updating of the configuration information to be completed, and then try again. If the problem reoccurs, restart the services that comprise SLM - Manager.

<sup>11.</sup> Messages

## KNAS18503-E

The acquisition of system performance information has failed. An error occurred during processing of SLM - Manager (Slave).

### Description

An error occurred during processing of a slave instance of SLM - Manager.

#### (S)

Interrupts processing.

### (O)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

### KNAS18600-E

The acquisition of service configuration information has failed. An error occurred during a database operation. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

### Description

An error occurred in a database operation.

(S)

Suspends processing and returns to the login window.

### (O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

## KNAS18601-E

The acquisition of service configuration information has failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

### Description

An inter-process communications error occurred in SLM - Manager.

(S)

Suspends processing.

## (O)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS18602-E

The acquisition of service configuration information has failed. The operation cannot be performed, as a configuration information refreshing by a different user is in progress. Wait for a while and retry.

### Description

The processing cannot be executed because another user is updating the configuration information.

(S)

Suspends processing.

(O)

Wait for the updating of the configuration information to be completed, and then try again. If the problem reoccurs, restart the services that comprise SLM - Manager.

# KNAS18610-E

The acquisition of service configuration information has failed. An error occurred during a database operation. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

Description

An error occurred in a database operation.

(S)

Suspends processing and returns to the login window.

### (O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

## KNAS18611-E

The acquisition of service configuration information has failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

### Description

An inter-process communications error occurred in SLM - Manager.

### (S)

Suspends processing.

## (0)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS18612-E

The acquisition of service configuration information has failed. The operation cannot be performed, as a configuration information refreshing by a different user is in progress. Wait for a while and retry.

## Description

The processing cannot be executed because another user is updating the configuration information.

(S)

Suspends processing.

## (0)

Wait for the updating of the configuration information to be completed, and then try again. If the problem reoccurs, restart the services that comprise SLM - Manager.

# KNAS18613-E

The acquisition of service configuration information has failed. An error occurred during processing of SLM -Manager (Slave).

## Description

An error occurred during processing of a slave instance of SLM - Manager.

(S)

Interrupts processing.

### (O)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

# KNAS18700-E

The acquisition of monitor item details has failed. An error occurred during a database operation.

## Description

An error occurred in a database operation.

### (S)

Suspends processing and returns to the login window.

### (O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0). If this does not resolve the problem, contact a system administrator.

# KNAS18701-E

The acquisition of monitor item details has failed. An inter-process communication error occurred in the SLM - Manager.

### Description

An inter-process communications error occurred in SLM - Manager.

### (S)

Suspends processing.

### (0)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS18702-E

The acquisition of monitor item details has failed. The specified monitor item is already deleted and does not exist. The screen will be refreshed.

### Description

The specified monitoring item has already been deleted by another user.

### (S)

Refreshes the window.

### (O)

Check the latest configuration information.

## KNAS18703-E

The acquisition of monitor item details has failed. The operation cannot be performed, as a configuration information refreshing by a different user is in progress. Wait for a while and retry.

### Description

The processing cannot be executed because another user is updating the configuration information.

### (S)

Suspends processing.

### (O)

Wait for the updating of the configuration information to be completed, and then try again. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS18704-E

The acquisition of monitor item details has failed. An error occurred during processing of SLM - Manager (Slave).

### Description

An error occurred during processing of a slave instance of SLM - Manager.

#### (S)

Interrupts processing.

### (O)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

## KNAS18800-E

The acquisition of monitor settings has failed. An error occurred during a database operation. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

### Description

An error occurred in a database operation.

(S)

Suspends processing and returns to the login window.

### (O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

## KNAS18801-E

The acquisition of monitor settings has failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

## Description

An inter-process communications error occurred in SLM - Manager.

(S)

Suspends processing.

## (0)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS18802-E

The acquisition of monitor settings has failed. The specified service is already deleted and does not exist. The screen will be refreshed. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

### Description

The specified service has already been deleted by another user.

(S)

Refreshes the window.

### (O)

Check the updated services.

Check the message log to see which services have changed.

## KNAS18803-E

The acquisition of monitor settings has failed. The specified Web transaction is already deleted and does not exist. The screen will be refreshed. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

## Description

The specified Web transaction has already been deleted by another user.

### (S)

Refreshes the window.

### (O)

Check the updated services.

If you want to see which Web transactions have changed, check the message log.

## KNAS18804-E

The acquisition of monitor settings has failed. The monitor item is already deleted and does not exist. The screen will be refreshed. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

## Description

A monitoring item has already been deleted by another user.

JP1/Service Level Management Description

### (S)

Refreshes the window.

### (O)

Check the most recent configuration information.

# KNAS18805-E

The acquisition of monitor settings has failed. The operation cannot be performed, as a configuration information refreshing by a different user is in progress. Wait for a while and retry.

## Description

The processing cannot be executed because another user is updating the configuration information.

(S)

Suspends processing.

### (0)

Wait for the updating of the configuration information to be completed, and then try again. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS18900-I

A monitor item was set. service group name=aa....aa, service name=bb....bb

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

# KNAS18901-E

The setting of monitor items has failed. An error occurred during a database operation. service group name=*aa....aa*, service name=*bb....bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

## Description

An error occurred in a database operation.

(S)

Suspends processing and returns to the login window.

### (O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager **DB Service** (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

## KNAS18902-E

The setting of monitor items has failed. An inter-process communication error occurred in the SLM - Manager. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

### Description

An inter-process communications error occurred in SLM - Manager.

(S)

Suspends processing.

(O)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

# KNAS18903-E

The setting of monitor items has failed. A command having an exclusive relationship is in progress. Wait for a while and retry.

### Description

The processing cannot be executed because a command that is in an exclusive relationship is running.

(S)

Suspends processing.

(0)

Wait for the command that is in an exclusive relationship to complete its execution, and then retry the operation.

## KNAS18904-E

The setting of monitor items has failed. The specified service is already deleted and does not exist. The screen will be refreshed. service group name=aa...aa, service name=bb....bb

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

Description

The specified monitored service has already been deleted by another user.

(S)

Refreshes the window.

(O)

Check the most recent list of monitored services. Check the message log if you want to see which monitored services have changed.

## KNAS18905-E

The setting of monitor items has failed. The operation cannot be performed, as a detection process by a different user is in progress. Wait for a while and retry. detection type=*aa....aa* 

### aa....aa: Type of detection

### Description

Monitored services or Web transactions are being detected by another user. Other operations on services cannot be performed while detection processing is underway.

The detection types have the following meanings:

- service: Detection of monitored services
- webTransaction: Detection of Web transactions
- service or webTransaction: Detection of monitored services or Web transactions

#### (S)

Suspends processing.

### (O)

Wait until the detection processing that the other user is executing has been completed, and then retry the operation.

## KNAS18906-E

The setting of monitor items has failed. The processing timed out. Wait for a while and retry.

### Description

Because another user was executing an operation that cannot be executed at the same time, it was necessary to wait for the earlier processing to be completed. However, a timeout occurred because the earlier processing had not finished after waiting for at least 10 seconds.

### (S)

Suspends processing.

### (0)

Wait a while, and then retry the operation.

## KNAS18907-E

The setting of monitor items has failed. The operation cannot be performed, as the monitored status of the specified service is "Starting". Stop the service monitoring and then retry. service group name=aa....aa, service name=bb....bb, monitored target name=cc....cc

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

### cc....cc: Name of monitored target

### Description

Monitoring is starting for the specified monitored service. Monitoring of a service cannot be set up while the service is being monitored.

(S)

Suspends processing.

(O)

Stop the monitoring of the monitored service, and then retry the operation.

# KNAS18908-E

The setting of monitor items has failed. The monitor item is already deleted and does not exist. The screen will be refreshed. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

### Description

The monitoring item has already been deleted by another user.

(S)

Refreshes the window.

(O)

Check the latest configuration information.

# KNAS18909-E

The setting of monitor items has failed. service group name=aa....aa, service name=bb....bb

aa....aa: Service group name

bb....bb: Service name

## Description

An error occurred while configuring the monitor items.

(S)

Interrupts the process and returns to the login window.

(O)

Contact the system administrator.

## KNAS30022-I

Service analysis was started. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

## Description

In the case of a system monitoring configuration, an asterisk (\*) is displayed for the name of the monitored target.

## KNAS30023-I

Service analysis was canceled. service group name=aa....aa, service name=bb....bb, monitored target name=cc....cc

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

### Description

Analysis startup was stopped because an error occurred while analysis was starting.

In the case of a system monitoring configuration, an asterisk (\*) is displayed for the name of the monitored target.

(S)

Suspends processing.

(O)

Check the immediately preceding error message, and then take corrective action.

## KNAS30024-E

An error occurred during the starting of service analysis. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

*cc....cc*: Name of the monitored target

### Description

In the case of a system monitoring configuration, an asterisk (\*) is displayed for the name of the monitored target.

(S)

Suspends processing.

(O)

Collect data, and then contact a system administrator. For details about collecting data, see 7.1.6 Collecting the data needed for determining the cause of a problem.

### KNAS30025-I

Service analysis was stopped. service group name=aa....aa, service name=bb....bb, monitored target name=cc....cc

aa....aa: Name of the service group to which the monitored service belongs

- bb....bb: Name of the monitored service
- cc....cc: Name of the monitored target

#### Description

In the case of a system monitoring configuration, an asterisk (\*) is displayed for the name of the monitored target.

## KNAS30026-E

The acquisition of a Web transaction for which an analysis was to be started has failed. service group name=*aa*....*aa*, service name=*bb*....*bb* 

aa....aa: Name of the service group to which the monitored service belongs

*bb....bb*: Name of the monitored service

#### Description

There was a failed attempt to confirm that a Web transaction had been created in a monitored service in order to start performance analysis; or, there was a failed attempt to reference Web transaction information from the database in order to start analysis.

(S)

Suspends processing.

#### (O)

Make sure the SLM - Manager service **SLM - Manager DB Service** is running, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS32003-W

Past performance data could not be obtained from the database. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc*, type=*dd....dd* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

dd....dd: Type of monitoring that occurred

#### Description

An accurate baseline cannot be calculated, or the baseline cannot be output, because past performance data cannot be retrieved from the database for use in the predictive error detection baseline.

The types of monitoring have the following meanings:

- SERVICE: Service performance monitoring
- SYSTEM: System performance monitoring

Note that this message is output only once for the same monitored target. Subsequent output is suppressed until monitoring stops.

### (S)

Continues processing.

## (0)

Make sure the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0) is running, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS32004-W

Service analysis results could not be output to the database. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc*, type=*dd....dd* 

aa....aa: Name of the service group to which the monitored service belongs

*bb....bb*: Name of the monitored service

cc....cc: Name of the monitored target

dd....dd: Type of data that failed to be output

### Description

An attempt to output analysis results to the database failed.

The types of data have the following meanings:

- PERFORMANCE: Service performance
- EVENT: Service performance event
- REPORT: Service performance report
- AVAILABILITY: Availability monitoring
- SYSTEM PERFORMANCE: System performance
- SYSTEM EVENT: System performance event
- SYSTEM REPORT: System performance report

Note that this message is output only once for the same monitored target. Subsequent output is suppressed until monitoring stops.

### (S)

Continues processing.

(O)

Check whether the KFPH22025-E or KFPH22026-E message was output to the Windows event log. If such a message was output, there is insufficient space in the database. Extend the database space, and then execute setup again.

If such a message was not output, make sure the SLM - Manager service **SLM - Manager DB Service** (service name: HiRDBEmbeddedEdition\_JLO) is running; or, make sure the system time on the server that is running SLM - UR or Performance Management has not been adjusted backward. If the error reoccurs, restart the SLM - Manager service.

### KNAS32007-W

JP1 event notification will be blocked, as a connection to JP1/Base failed. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

- bb....bb: Name of the monitored service
- cc....cc: Name of the monitored target

### Description

An attempt to connect to JP1/Base to issue a JP1 event failed.

#### (S)

Suspends notification of JP1 events and continues processing.

#### (O)

Make sure JP1/Base is running and that the jbsHostName property is specified correctly in the jplitslm.properties system definition file in SLM - Manager. To resume JP1 event notification, stop monitoring the monitored service, and then restart monitoring.

### KNAS32017-I

The threshold value monitor will be started. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc*, monitor item name=*dd....dd*, start time=*ee....ee* 

- aa....aa: Name of the service group to which the monitored service belongs
- bb....bb: Name of the monitored service
- cc....cc: Name of the monitored target
- dd....dd: Names of monitoring items < monitoring-item-name ....>
- ee....ee: Start time of threshold monitoring

#### Description

Threshold monitoring has started on the monitored service.

The names of multiple monitoring items whose monitoring is starting at the same time are output, delimited by the space.

The start time that is output is the time at which performance data was first acquired after the start of threshold monitoring, in the following format (converted to the time zone of SLM - Manager's execution environment):

• "YYYY/MM/DD hh:mm:ss ZZZZZ"

Legend:

YYYY/MM/DD: year/month/date

*hh*:*mm*:*ss*:*hour*:*minute*:*second* 

ZZZZZ: +or – followed by the time zone, expressed as the time differential from GMT (a four digit number). An example would be +0900.

## KNAS32018-I

The trend monitor will be started. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc*, monitor item name=*dd....dd*, start time=*ee....ee* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

*cc....cc*: Name of the monitored target

dd....dd: Names of monitoring items < monitoring-item-name ....>

ee....ee: Start time of trend monitoring

Description

Trend monitoring has started on the monitored service.

The names of multiple monitoring items whose monitoring is starting at the same time are output, delimited by the space.

The start time that is output is the time at which performance data was first acquired after the start of trend monitoring, in the following format (converted to the time zone of SLM - Manager's execution environment):

• "YYYY/MM/DD hh:mm:ss ZZZZZ"

Legend:

*YYYY/MM/DD: year/month/date* 

hh:mm:ss: hour:minute:second

ZZZZZ: +or – followed by the time zone, expressed as the time differential from GMT (a four digit number). An example would be +0900.

## KNAS32019-I

Predictive error detection will be started. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc*, monitor item name=*dd....dd*, start time=*ee....ee* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

*dd....dd*: Names of monitoring items *<monitoring-item-name* . . . *>* 

#### ee....ee: Start time of predictive error detection

### Description

Predictive error detection has started on the monitored service.

The names of multiple monitoring items whose monitoring is starting at the same time are output, delimited by the space.

The start time that is output is the time at which performance data was first acquired after the start of predictive error detection, in the following format (converted to the time zone of SLM - Manager's execution environment):

• "YYYY/MM/DD hh:mm:ss ZZZZZ"

Legend:

YYYY/MM/DD: year/month/date

hh:mm:ss: hour:minute:second

ZZZZ: + or – followed by the time zone, expressed as the time differential from GMT (a four digit number). An example would be +0900.

## KNAS32020-I

The start of predictive error detection will be delayed, as there is not enough past information. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc*, days till start=*dd....dd*, number of accumulation days=*ee....ee* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

- cc....cc: Name of the monitored target
- dd....dd: Number of days until start of predictive error detection

ee....ee: Number of days past information has accumulated

#### Description

Because the number of days past information has accumulated is less than the number of days until start, startup of predictive error detection is waiting for past information to accumulate.

(S)

Continues processing, and then starts predictive error detection after accumulating past information for the number of days until start.

(O)

Revise the number of days until start of predictive error detection, or perform monitoring of the service until past information has accumulated for the number of days until start of predictive error detection.

## KNAS32021-E

Performance analysis will be blocked, as an error occurred in performance analysis. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc*, cause=*dd....dd* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

dd....dd: Failure cause

## Description

The meanings of the failure causes are as follows:

- MEMORY: A memory shortage occurred.
- STREAM: An error occurred in transmission or reception of performance data.
- THREAD: The command running performance analysis terminated abnormally.

#### (S)

Suspends processing.

#### (O)

Stop monitoring of the monitored service, and then restart after allocating sufficient memory. If this does not resolve the problem, collect data, and then contact a system administrator.

For details about collecting data, see 7.1.6 Collecting the data needed for determining the cause of a problem.

## KNAS32022-W

The start time of performance analysis could not be output to the database. The monitored status of the service will not be recovered when restarting the SLM - Manager. service group name=aa....aa, service name=bb....bb, monitored target name=cc...cc, start time=dd....dd

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

*cc....cc*: Name of the monitored target

dd....dd: Start time of analysis of service performance

## Description

An attempt to output the start time of analysis of service performance to the database failed.

#### (S)

Continues processing.

(0)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JLO). If this does not resolve the problem, contact a system administrator.

## KNAS32023-I

The threshold value monitor for system performance will be started. service group name=*aa....aa*, service name=*bb....bb*, host name=*cc....cc*, monitored target name=*dd....dd*, monitor item name=*ee....ee*, start time=*ff....ff* 

aa....aa: Name of the service group to which the monitored service belongs

- *bb....bb*: Name of the monitored service
- cc....cc: Host name
- dd....dd: Name of the monitored target
- ee....ee: Name of the monitoring item
- ff....ff: Start time

#### Description

Threshold monitoring of system performance has started. Output is performed individually for each monitoring item.

In the case of a Performance Management monitoring item, the name of the monitoring agent is output for the name of the monitored target.

The start time that is output is the time at which the performance data being monitored was acquired, in the following format (converted to the time zone of the SLM - Manager's execution environment):

• "YYYY/MM/DD hh:mm:ss ZZZZZ"

Legend:

YYYY/MM/DD: year/month/date

hh:mm:ss: hour:minute:second

ZZZZZ: +or – followed by the time zone, expressed as the time differential from GMT (a four digit number). An example would be +0900.

## KNAS32024-I

The trend monitor for system performance will be started. service group name=*aa....aa*, service name=*bb....bb*, host name=*cc....cc*, monitored target name=*dd....dd*, monitor item name=*ee....ee*, start time=*ff....ff* 

aa....aa: Name of the service group to which the monitored service belongs

- bb....bb: Name of the monitored service
- cc....cc: Host name

*dd....dd*: Name of the monitored target

ee....ee: Name of the monitoring item

ff....ff: Start time

## Description

Trend monitoring of system performance has started. Output is performed individually for each monitoring item.

<sup>11.</sup> Messages

In the case of a Performance Management monitoring item, the name of the monitoring agent is output for the name of the monitored target.

The start time that is output is the time at which the performance data being monitored was acquired, in the following format (converted to the time zone of the SLM - Manager's execution environment):

• "YYYY/MM/DD hh:mm:ss ZZZZZ"

Legend:

YYYY/MM/DD: year/month/date

*hh*:*mm*:*ss*:*hour*:*minute*:*second* 

ZZZZ: + or – followed by the time zone, expressed as the time differential from GMT (a four digit number). An example would be +0900.

## KNAS32025-I

Predictive error detection for system performance will be started. service group name=*aa....aa*, service name=*bb....bb*, host name=*cc....cc*, monitored target name=*dd....dd*, monitor item name=*ee....ee*, start time=*ff....ff* 

- aa....aa: Name of the service group to which the monitored service belongs
- bb....bb: Name of the monitored service
- cc....cc: Host name
- dd....dd: Name of the monitored target
- ee....ee: Name of the monitoring item

## ff....ff: Start time

## Description

Predictive error detection of system performance has started. Output is performed individually for each monitoring item.

In the case of a Performance Management monitoring item, the name of the monitoring agent is output for the name of the monitored target.

The start time that is output is the time at which the performance data used for predictive error detection was acquired, in the following format (converted to the time zone of the SLM - Manager's execution environment):

• "YYYY/MM/DD hh:mm:ss ZZZZZ"

Legend:

YYYY/MM/DD: year/month/date

*hh*:*mm*:*ss*:*hour*:*minute*:*second* 

ZZZZZ: +or – followed by the time zone, expressed as the time differential from GMT (a four digit number). An example would be +0900.

## KNAS32026-I

The start of predictive error detection will be delayed, as there is not enough past information on system performance. service group name=*aa....aa*, service name=*bb....bb*, host name=*cc....cc*, monitored target name=*dd....dd*, monitor item name=*ee....ee*, days till start=*ff....ff*, number of accumulation days=*gg....gg* 

aa....aa: Name of the service group to which the monitored service belongs

- bb....bb: Name of the monitored service
- cc....cc: Host name
- dd....dd: Name of the monitored target
- ee....ee: Name of the monitoring item
- ff....ff: Days until start
- gg....gg: Days of accumulation

#### Description

Because the number of days until start is greater than the number days past information has accumulated from the monitoring item whose system performance is being detected, the start of predictive error detection is waiting for past information to accumulate.

Output of messages and of the determination of the days of accumulation is performed individually for each monitoring item.

## KNAS32027-I

The availability monitor will be started. service group name=aa....aa, service name=bb....bb, start time=cc....cc

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Start time

#### Description

Availability monitoring of the monitored service has started.

The start time that is output is the time at which the performance data being monitored was acquired, in the following format (converted to the time zone of the SLM - Manager's execution environment):

• "YYYY/MM/DD hh:mm:ss ZZZZZ"

Legend:

YYYY/MM/DD: year/month/date

*hh:mm:ss: hour:minute:second* 

ZZZZZ: +or – followed by the time zone, expressed as the time differential from GMT (a four digit number). An example would be +0900.

## KNAS32028-W

The searching or deletion of monitoring results that have exceeded the retention period has failed. service group name=aa....aa, service name=bb...bb, monitored target name=cc...cc, type=dd...dd

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

dd....dd: Type of monitoring that occurred

#### Description

An error occurred while deleting, or checking for the existence of, monitoring results that exceed the time limit for storing information in the database.

The types of monitoring have the following meanings:

- PERFORMANCE: Deletion of an event or service performance chart displayed in the Troubleshoot window
- REPORT: Deletion of availability monitoring information or of a service performance table or chart displayed in the Report window
- SYSTEM\_PERFORMANCE: Deletion of an event or system performance chart displayed in the Troubleshoot window
- SYSTEM REPORT: Deletion of a system performance table or chart displayed in the Report window
- (S)

Continues processing.

(O)

Make sure the SLM - Manager service **SLM - Manager DB Service** is running, and then restart monitoring. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS32029-W

Performance data will be discarded, as performance analysis is not possible due to an out-of-range value. service group name=*aa....aa*, service name=*bb....bb*, host name=*cc....cc*, monitored target name=*dd....dd*, monitor item name=*ee....ee*, value=*ff....ff*, boundary value=*gg....gg*, details=*hh....hh* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

- cc....cc: Host name
- dd....dd: Name of the monitored target
- ee....ee: Name of the monitoring item
- *ff....ff*: Value of the monitored item
- gg....gg: Analysis boundary value
- hh....hh: Details

JP1/Service Level Management Description

## Description

Because the value of the monitoring item whose performance data was received is not within the range of 0.0 through 3.4028235E38, which is the range within which performance analysis can be run, this information was discarded.

The meanings of the details are as follows:

- UPPER LIMIT: The value exceeds the upper limit. The upper limit is output as the analysis boundary value.
- LOWER LIMIT: The value exceeds the lower limit. The lower limit is output as the analysis boundary value.
- NOT NUMBER: The value was non-numeric (NaN). An asterisk (\*) is output as the analysis boundary value.

(S)

Continues processing.

(O)

Check the value of the monitoring item that is output in the message. If an invalid value is output, make sure SLM - UR or Performance Management is acquiring information correctly.

#### KNAS34000-W

An SLO threshold value might be exceeded. monitor item=aa....aa

aa....aa: Name of the monitoring item

Description

A trend towards exceeding the SLO threshold was detected in a monitoring item (average response time or throughput).

(S)

Continues processing.

(O)

Take corrective action according to the troubleshooting instructions.

For details about troubleshooting, see 4.4 Support methodology for root cause investigation when an error or warning is displayed for a monitored service.

## KNAS34001-E

An SLO violation was detected. monitor item=aa....aa

aa....aa: Name of the monitoring item

Description

An SLO threshold overage was detected in the monitoring item (average response time, throughput, or error rate).

(S)

Continues processing.

#### (O)

Take corrective action according to the troubleshooting instructions.

For details about troubleshooting, see 4.4 Support methodology for root cause investigation when an error or warning is displayed for a monitored service.

## KNAS34002-W

A sign of a performance error was detected. monitor item=aa....aa

aa....aa: Name of the monitoring item

#### Description

An out-of-range value was detected in the monitoring item (average response time, throughput, or error rate).

(S)

Continues processing.

#### (O)

Take corrective action according to the troubleshooting instructions.

For details about troubleshooting, see 4.4 Support methodology for root cause investigation when an error or warning is displayed for a monitored service.

## KNAS34003-E

An SLO violation was detected. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc*, monitor item name=*dd....dd*, occurrence time=*ee....ee*, details=*ff....ff* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Name of the monitored target

dd....dd: Name of the monitoring item

ee....ee: Time of occurrence

#### ff....ff: Details

#### Description

A threshold was exceeded in service performance threshold monitoring.

The time of occurrence is the time of the detection, in the following format:

• "YYYY/MM/DD hh:mm:ss ZZZZZ"

Legend:

YYYY/MM/DD: year/month/date

*hh:mm:ss: hour:minute:second* 

ZZZZZ: +or - followed by the time zone, expressed as the time differential from GMT (a four digit number). An example would be +0900.

The time zone is the time zone of SLM - Manager's execution environment. One of the following strings is output for the details:

- UPPER LIMIT: Upper-limit threshold value exceeded
- LOWER LIMIT: Lower-limit threshold value exceeded
- (S)

Continues processing.

(O)

Log in to SLM and check the details.

## KNAS34004-W

An SLO threshold value might be exceeded. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc*, monitor item name=*dd....dd*, occurrence time=*ee....ee*, details=*ff....ff* 

aa....aa: Name of the service group to which the monitored service belongs

- bb....bb: Name of the monitored service
- cc....cc: Name of the monitored target

dd....dd: Name of the monitoring item

ee....ee: Time of occurrence

```
ff....ff: Details
```

#### Description

A trend towards exceeding a threshold was detected in service performance trend monitoring.

The time of occurrence is the time of the detection.

The time at which the threshold is expected to be exceeded is output as the details.

Both times are output in the following format:

• "YYYY/MM/DD hh:mm:ss ZZZZZ"

Legend:

YYYY/MM/DD: year/month/date

hh:mm:ss: hour:minute:second

ZZZZZ: +or – followed by the time zone, expressed as the time differential from GMT (a four digit number). An example would be +0900.

The time zone is the time zone of SLM - Manager's execution environment.

(S)

Continues processing.

(0)

Log in to SLM and check the details.

## KNAS34005-W

A sign of a performance error was detected. service group name=*aa....aa*, service name=*bb....bb*, monitored target name=*cc....cc*, monitor item name=*dd....dd*, occurrence time=*ee....ee*, details=*ff....ff* 

aa....aa: Name of the service group to which the monitored service belongs

*bb....bb*: Name of the monitored service

cc....cc: Name of the monitored target

dd....dd: Name of the monitoring item

ee....ee: Time of occurrence

## ff....ff: Details

#### Description

An out-of-range value from the baseline was detected in service performance predictive error detection. The time of occurrence is the time of the detection, in the following format:

• "YYYY/MM/DD hh:mm:ss ZZZZZ"

Legend:

*YYYY/MM/DD: year/month/date* 

*hh*:*mm*:*ss*:*hour*:*minute*:*second* 

ZZZZZ: +or – followed by the time zone, expressed as the time differential from GMT (a four digit number). An example would be +0900.

The time zone is the time zone of SLM - Manager's execution environment. One of the following strings is output for the details:

- UPPER LIMIT: Upper limit for predictive error detection was exceeded
- LOWER LIMIT: Lower limit for predictive error detection was exceeded

#### (S)

Continues processing.

#### (O)

Log in to SLM and check the details.

## KNAS34006-E

It was detected that a service was down. service group name=*aa....aa*, service name=*bb....bb*, occurrence time=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

## *cc....cc*: Time of occurrence

#### Description

A stop in service was detected by service availability monitoring.

The time of occurrence is the time of the detection, in the following format:

• "YYYY/MM/DD hh:mm:ss ZZZZZ"

Legend: *YYYY/MM/DD: year/month/date* 

*hh*:*mm*:*ss*: *hour*:*minute*:*second* 

ZZZZ: + or – followed by the time zone, expressed as the time differential from GMT (a four digit number). An example would be +0900.

The time zone is the time zone of SLM - Manager's execution environment.

(S)

Continues processing.

## (O)

Log in to SLM and check the details.

## KNAS34007-I

It was detected that a service was recovered. service group name=*aa....aa*, service name=*bb....bb*, occurrence time=*cc....cc* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Time of occurrence

## Description

A service recovery was detected by service availability monitoring.

The time of occurrence is the time of the detection, in the following format:

• "YYYY/MM/DD hh:mm:ss ZZZZZ"

Legend:

*YYYY/MM/DD: year/month/date* 

*hh*:*mm*:*ss*:*hour*:*minute*:*second* 

ZZZZZ: +or – followed by the time zone, expressed as the time differential from GMT (a four digit number). An example would be +0900.

The time zone is the time zone of SLM - Manager's execution environment.

## (S)

Continues processing.

(0)

Log in to SLM and check the details.

## KNAS34008-E

An SLO violation was detected. service group name=*aa....aa*, service name=*bb....bb*, host name=*cc....cc*, monitored target name=*dd....dd*, monitor item name=*ee....ee*, occurrence time=*ff....ff*, details=*gg....gg* 

aa....aa: Name of the service group to which the monitored service belongs

- *bb....bb*: Name of the monitored service
- cc....cc: Host name
- dd....dd: Name of the monitored target
- ee....ee: Name of the monitoring item
- ff....ff: Time of occurrence
- gg....gg: Details

#### Description

A threshold was exceeded in system performance threshold monitoring.

The time of occurrence is the time of the detection, in the following format:

• "YYYY/MM/DD hh:mm:ss ZZZZZ"

Legend:

YYYY/MM/DD: year/month/date

*hh:mm:ss: hour:minute:second* 

ZZZZZ: +or – followed by the time zone, expressed as the time differential from GMT (a four digit number). An example would be +0900.

The time zone is the time zone of SLM - Manager's execution environment.

One of the following strings is output for the details:

- UPPER LIMIT: Upper-limit threshold value exceeded
- LOWER LIMIT: Lower-limit threshold value exceeded

#### (S)

Continues processing.

#### (O)

Log in to SLM and check the details.

#### KNAS34009-W

An SLO threshold value might be exceeded. service group name=*aa....aa*, service name=*bb....bb*, host name=*cc....cc*, monitored target name=*dd....dd*, monitor item name=*ee....ee*, occurrence time=*ff....ff*, details=*gg....gg* 

aa....aa: Name of the service group to which the monitored service belongs

#### *bb....bb*: Name of the monitored service

#### cc....cc: Host name

JP1/Service Level Management Description

dd....dd: Name of the monitored target

ee....ee: Name of the monitoring item

ff....ff: Time of occurrence

gg....gg: Details

## Description

A trend towards exceeding a threshold was detected in system performance trend monitoring.

The time of occurrence is the time of the detection.

The time at which the threshold is expected to be exceeded is output as the details.

Both times are output in the following format:

- "YYYY/MM/DD hh:mm:ss ZZZZZ"
  - Legend:

*YYYY/MM/DD: year/month/date* 

hh:mm:ss: hour:minute:second

ZZZZ: +or – followed by the time zone, expressed as the time differential from GMT (a four digit number). An example would be +0900.

The time zone is the time zone of SLM - Manager's execution environment.

## (S)

Continues processing.

(0)

Log in to SLM and check the details.

## KNAS34010-W

A sign of a performance error was detected. service group name=*aa....aa*, service name=*bb....bb*, host name=*cc....cc*, monitored target name=*dd....dd*, monitor item name=*ee....ee*, occurrence time=*ff....ff*, details=*gg....gg* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Host name

dd....dd: Name of the monitored target

ee....ee: Name of the monitoring item

ff....ff: Time of occurrence

gg....gg: Details

## Description

An out-of-range value from the baseline was detected in system performance predictive error detection. The time of occurrence is the time of the detection, in the following format:

• "*YYYY/MM/DD hh*:*mm*:*ss* ZZZZZ"

Legend:

YYYY/MM/DD: year/month/date

hh:mm:ss: hour:minute:second

ZZZZ: + or – followed by the time zone, expressed as the time differential from GMT (a four digit number). An example would be +0900.

The time zone is the time zone of SLM - Manager's execution environment.

One of the following strings is output for the details:

- UPPER LIMIT: Upper limit for predictive error detection exceeded
- LOWER LIMIT: Lower limit for predictive error detection exceeded
- (S)

Continues processing.

(O)

Log in to SLM and check the details.

# KNAS50100-W

The transmission of performance information has failed. The performance information will be discarded. time of first=*aa*....*aa*, time of last=*bb*....*bb*, number of performance information entries=*cc*....*cc* 

aa....aa: Time at first performance information

bb....bb: Time at end of performance information

- cc....cc: Number of discarded performance information items
- Description

An attempt to send performance information between processes within SLM - Manager failed.

(S)

Discards the performance information and suspends transmission processing.

(O)

If the problem reoccurs, restart the services that comprise SLM - Manager.

# KNAS50102-W

Performance information was discarded. service group name=*aa....aa*, service name=*bb....bb*, host name=*cc....cc*, monitored target name=*dd....dd*, monitor item name=*ee....ee*, reason code=*ff....ff* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Host name

#### dd....dd: Name of the monitored target

#### ee....ee: Name of the monitoring item

#### *ff....ff*: Reason code

#### Description

Performance information was discarded for one of the reasons indicated by the reason codes below. One of the following is output for the reason code:

- STOP: Monitoring of the monitoring item has stopped.
- DELETE: Monitoring of the monitored service has started, but there are no monitoring items.

In the case of availability monitoring, an asterisk (\*) is displayed for the name of the monitored target and for the name of the monitoring item.

If there are no monitoring items, an asterisk (\*) is displayed for everything except ff....ff.

(S)

Discards the performance information and continues processing.

(0)

• When the reason code is STOP:

Start monitoring, or stop monitoring of the monitored service to which the monitoring item applies.

• When the reason code is DELETE: If this message is output again for the same monitoring item, contact a system administrator.

## KNAS50103-E

A communication error occurred when starting monitor item monitoring. reason code=aa....aa

aa....aa: Code indicating the communication destination

Description

A communication error occurred.

(S)

Suspends processing.

#### (O)

Check the reason code, and then take corrective action according to the description of the reason code. If the reason code is DAO, wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS50104-E

A database operation error occurred when starting monitor item monitoring.

#### Description

An error occurred in a database operation.

(S)

Suspends processing.

(O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0). If this does not resolve the problem, contact a system administrator.

## KNAS50105-E

A communication error occurred when stopping monitor item monitoring. reason code=aa....aa

aa....aa: Code indicating the communication destination

## Description

A communication error occurred.

(S)

Suspends processing.

## (O)

Check the reason code, and then take corrective action according to the description of the reason code. If the reason code is DAO, wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

# KNAS50106-E

A database operation error occurred when stopping monitor item monitoring.

## Description

An error occurred in a database operation.

(S)

Suspends processing.

(0)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0). If this does not resolve the problem, contact a system administrator.

# KNAS50107-E

Execution permissions for configuration information operations could not be obtained.

# Description

Processing that cannot be executed at the same time that configuration information operations that are being performed was suspended.

## (S)

Suspends processing.

## (O)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

# KNAS50108-E

The monitoring of a system performance monitor item failed to be started. Execution permissions for configuration information operations could not be obtained.

## Description

Processing that cannot be executed at the same time that configuration information operations that are being performed was suspended.

## (S)

Suspends processing.

## (0)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS50109-E

The monitoring of a system performance monitor item failed to be stopped. Execution permissions for configuration information operations could not be obtained.

## Description

Processing that cannot be executed at the same time that configuration information operations that are being performed was suspended.

#### (S)

Suspends processing.

#### (0)

Wait a while, and then retry the operation. If the problem reoccurs, restart the services that comprise SLM - Manager.

## KNAS50110-E

The status of a system performance monitor item could not be refreshed when starting the monitoring of a system performance monitor item.

## Description

The status of the monitored item could not be updated at the start of monitoring of a system performance monitoring item.

(S)

Suspends processing.

### (O)

Restart the services that comprise SLM - Manager, and then restart the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition\_JL0). If this does not resolve the problem, contact a system administrator.

## KNAS50111-E

Starting performance monitoring failed. An error occurred during the SLM - Manager(Slave) processing.

#### Description

An error occurred during processing of a slave instance of SLM - Manager.

(S)

Interrupts processing.

(0)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

## KNAS50112-E

Stopping performance monitoring failed. An error occurred during the SLM - Manager(Slave) processing.

#### Description

An error occurred during processing of a slave instance of SLM - Manager.

(S)

Interrupts processing.

(0)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

## KNAS50113-E

An instance of SLM - Manager (Slave) from which performance data can be distributed does not exist. (destination IP address = aa...aa, destination PFM receive port number = bb....bb)

aa....aa: IP address of destination of connection

bb....bb: Number of port at connection destination

## Description

Failed to send performance information within a process of the master instance of SLM - Manager.

(S)

Interrupts processing.

#### (0)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

## KNAS50200-I

The monitoring of a system performance monitor item was started. service group name=*aa....aa*, service name=*bb....bb*, host name=*cc....cc*, monitored target name=*dd....dd*, monitor item name=*ee....ee* 

aa....aa: Name of the service group to which the monitored service belongs

- *bb....bb*: Name of the monitored service
- cc....cc: Host name
- dd....dd: Name of the monitored target
- ee....ee: Name of the monitoring item

#### KNAS50201-E

The monitoring of a system performance monitor item failed to be started. service group name=*aa....aa*, service name=*bb....bb*, host name=*cc....cc*, monitored target name=*dd....dd*, monitor item name=*ee....ee*, maintenance information=*ff....ff* 

aa....aa: Name of the service group to which the monitored service belongs

- bb....bb: Name of the monitored service
- cc....cc: Host name
- dd....dd: Name of the monitored target
- ee....ee: Name of the monitoring item
- ff....ff: Maintenance information

Description

An attempt to start monitoring of a system performance monitoring item failed because an error occurred during processing in PFM - Manager.

(S)

Continues processing.

## (0)

Investigate PFM - Manager, and then restart monitoring after eliminating the cause of the error. If this does not resolve the problem, contact a system administrator.

#### KNAS50202-E

A communication error occurred when starting the monitoring of a system performance monitor item. reason code=*aa*....*aa* 

aa....aa: Code indicating the communication destination

#### Description

A communication error occurred.

## (S)

Suspends processing.

## (0)

Check the reason code, and then take corrective action according to the description of the reason code.

If the reason code is PFM, wait a while, and then retry the operation. If the problem reoccurs, check whether PFM - Manager is running. If it is running, check and, if necessary, revise the settings for the pfmManagerHost and pfmManagerPort properties; if necessary, revise the communication environment between PFM - Manager and SLM - Manager. If this does not resolve the problem, contact a system administrator.

## KNAS50204-E

An error occurred when starting the monitoring of a system performance monitor item.

## Description

An error occurred at the start of monitoring a system performance monitoring item for PFM - Manager.

(S)

Suspends processing.

## (0)

Investigate PFM - Manager, and then restart monitoring after eliminating the cause of the error. If this does not resolve the problem, contact a system administrator.

# KNAS50205-E

The monitoring of a system performance monitor item failed to be started. The system could not request the processing from the PFM - Manager. destination IP=aa...aa, destination port=bb....bb

aa....aa: Connection destination IP

bb....bb: Connection destination port

## Description

The connection destination PFM - Manager does not support the requested feature.

(S)

Suspends processing.

## (0)

Make sure the version of PFM - Manager being linked to is at least as recent as the version that is assumed by SLM.

# KNAS50206-I

The availability monitor was started. service group name=aa....aa, service name=bb....bb, host name=cc....cc

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Host name

## KNAS50207-E

The starting of the availability monitor has failed. service group name=*aa....aa*, service name=*bb....bb*, host name=*cc....cc*, maintenance information=*dd....dd* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Host name

dd....dd: Maintenance information

## Description

An attempt to start availability monitoring failed because an error occurred during processing in PFM - Manager.

#### (S)

Continues processing.

#### (O)

Investigate PFM - Manager, and then restart monitoring after eliminating the cause of the error. If this does not resolve the problem, contact a system administrator.

## KNAS50220-I

The monitoring of a system performance monitor item was stopped. service group name=*aa....aa*, service name=*bb....bb*, host name=*cc....cc*, monitored target name=*dd....dd*, monitor item name=*ee....ee* 

aa....aa: Name of the service group to which the monitored service belongs

- *bb....bb*: Name of the monitored service
- cc....cc: Host name
- dd....dd: Name of the monitored target
- ee....ee: Name of the monitoring item

## KNAS50221-E

The monitoring of a system performance monitor item failed to be stopped. service group name=*aa....aa*, service name=*bb....bb*, host name=*cc....cc*, monitored target name=*dd....dd*, monitor item name=*ee....ee*, maintenance information=*ff....ff* 

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

- cc....cc: Host name
- dd....dd: Name of the monitored target
- ee....ee: Name of the monitoring item
- ff....ff: Maintenance information

#### Description

An attempt to stop monitoring of a system performance monitoring item failed because an error occurred during processing in PFM - Manager.

#### (S)

Continues processing.

#### (O)

Investigate PFM - Manager. After eliminating the cause of the error, start monitoring and then stop it again. If this does not resolve the problem, contact a system administrator.

## KNAS50222-E

A communication error occurred when stopping the monitoring of a system performance monitor item. reason code=*aa*....*aa* 

aa....aa: Code indicating the communication destination

#### Description

A communication error occurred.

## (S)

Suspends processing. In the case of a forced stop, continues processing.

## (0)

Check the reason code, and then take corrective action according to the description of the reason code.

If the reason code is PFM, wait a while, and then retry the operation. If the problem reoccurs, check whether PFM - Manager is running. If it is running, check and, if necessary, revise the settings for the pfmManagerHost and pfmManagerPort properties; if necessary, revise the communication environment between PFM - Manager and SLM - Manager. After eliminating the cause of the error, start monitoring and then stop it again. If this does not resolve the problem, contact a system administrator.

## KNAS50224-E

An error occurred when stopping the monitoring of a system performance monitor item.

#### Description

An error occurred while monitoring of a system performance monitoring item was stopping for PFM - Manager.

#### (S)

Suspends processing. In the case of a forced stop, continues processing.

### (O)

Investigate PFM - Manager. After eliminating the cause of the error, start monitoring and then stop it again. If this does not resolve the problem, contact a system administrator.

## KNAS50225-E

The monitoring of a system performance monitor item failed to be stopped. The system could not request the processing from the PFM - Manager. destination IP=aa...aa, destination port=bb....bb

*aa....aa*: Connection destination IP

bb....bb: Connection destination port

## Description

The connection destination PFM - Manager does not support the requested feature.

(S)

Suspends processing. In the case of a forced stop, continues processing.

## (O)

Make sure the version of PFM - Manager being linked to is at least as recent as the version that is assumed by SLM.

## KNAS50226-I

The availability monitor was stopped. service group name=aa....aa, service name=bb....bb, host name=cc....cc

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

cc....cc: Host name

## KNAS50227-E

The stopping of the availability monitor failed. service group name=*aa....aa*, service name=*bb....bb*, host name=*cc....cc*, maintenance information=*dd....dd* 

aa....aa: Name of the service group to which the monitored service belongs

#### bb....bb: Name of the monitored service

#### cc....cc: Host name

## dd....dd: Maintenance information

## Description

An attempt to stop availability monitoring failed because an error occurred during processing in PFM - Manager.

### (S)

Continues processing.

## (0)

Investigate PFM - Manager. After eliminating the cause of the error, start monitoring and then stop it again. If this does not resolve the problem, contact a system administrator.

## KNAS50241-E

A communication error occurred when receiving performance information. The connection to the destination will be disconnected. destination IP=aa...aa, destination port=bb....bb

aa....aa: Connection destination IP

bb....bb: Connection destination port

## Description

A communication error occurred in the receipt of performance information.

## (S)

Cuts off communication with the connection destination where the transmission error occurred.

## (O)

If the problem reoccurs, restart the services that comprise SLM - Manager and the program that you were using to connect to the connection destination IP and the connection destination port.

## KNAS50242-E

Initialization for performance information reception has failed. reason code=aa....aa

## aa....aa: Reason code

## Description

An attempt to initialize reception of performance information failed. The reason codes are as follows:

BIND: Bind error

REMOTE: Communication error

### (S)

Suspends processing.

# (O)

Take corrective action according to the reason code.

• BIND:

If the port specified in the pfmRecivePort property in the jplitslm.properties system definition file is in use, specify another value, and then restart the services that comprise SLM - Manager. If it is not in use, wait a while, and then restart the services that comprise SLM - Manager.

• REMOTE:

Wait a while, and then restart the SLM - Manager service.

## KNAS50243-E

An error occurred in a function linking with PFM.

#### Description

An error occurred in the function that links to Performance Manager.

#### (S)

Blocks the function that links to Performance Manager.

#### (0)

Check the preceding message and take corrective action.

## KNAS50244-E

Starting system performance monitoring failed. An error occurred during the SLM - Manager(Slave) processing.

#### Description

An error occurred during processing of a slave instance of SLM - Manager.

#### (S)

Interrupts processing.

#### (O)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

## KNAS50245-E

Stopping system performance monitoring failed. An error occurred during the SLM - Manager(Slave) processing.

#### Description

An error occurred during processing of a slave instance of SLM - Manager.

#### (S)

Interrupts processing.

#### (O)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

## KNAS50246-E

Starting availability monitoring failed. An error occurred during the SLM - Manager(Slave) processing.

#### Description

An error occurred during processing of a slave instance of SLM - Manager.

#### (S)

Interrupts processing.

#### (O)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

## KNAS50247-E

Stopping related to availability monitoring failed. An error occurred during the SLM - Manager(Slave) processing.

#### Description

An error occurred during processing of a slave instance of SLM - Manager.

#### (S)

Interrupts processing.

#### (0)

Check the message output in the message log of the slave instance of SLM - Manager and take corrective measures.

## KNAS70007-E

An error occurred during service detection. cause=aa....aa

#### aa....aa: Error cause

## Description

Because an error occurred in the detection of monitored services, the attempt to detect monitored services failed. The meanings of the error cause are as follows:

- INTERNAL: A system failure occurred in the detection of monitored services.
- LOG: An error occurred in a log.
- MEMORY: A memory shortage occurred.
- PROPERTIES: An error occurred in a system definition file.
- RMI: An error occurred in the RMI server.

#### (S)

Suspends processing.

## (O)

Take corrective action in accordance with the error cause:

• LOG, PROPERTIES, or RMI:

Restart the SLM - UR service. If this does not resolve the problem, collect data, and then contact a system administrator.

• INTERNAL:

Collect data, and then contact a system administrator.

• MEMORY:

Stop the SLM - UR service, allocate memory, and then restart. If restarting does not resolve the problem, collect data, and then contact a system administrator.

For details about collecting data, see 7.1.6 Collecting the data needed for determining the cause of a problem.

## KNAS70008-E

An error occurred during service monitoring. cause=aa....aa

#### aa....aa: Error cause

#### Description

Because an error occurred in the monitoring of a monitored service, the attempt to monitor the monitored service failed.

The meanings of the error cause are as follows:

- DATA RECEIVE: An error occurred in receiving performance data.
- INTERNAL: A system failure occurred in the monitoring of a monitored service.
- LOG: An error occurred in a log.
- MEMORY: A memory shortage occurred.
- PROPERTIES: An error occurred in a system definition file.
- RMI: An error occurred in the RMI server.
- STREAM: An error occurred in the receive route for performance data.

#### (S)

Suspends processing.

#### (0)

Take corrective action in accordance with the error cause:

• DATA RECEIVE, LOG, PROPERTIES, RMI, or STREAM:

Restart the SLM - UR service. If this does not resolve the problem, collect data, and then contact a system administrator.

• INTERNAL:

Collect data, and then contact a system administrator.

• MEMORY:

Stop the SLM - UR service, allocate memory, and then restart. If restarting does not resolve the problem, collect data, and then contact a system administrator.

For details about collecting data, see 7.1.6 Collecting the data needed for determining the cause of a problem.

## KNAS90000-E

[FAILED] It failed in the execution of the command.

#### Description

The attempt to execute the command failed.

(S)

Stops the command.

### (0)

The problem is with the OS.

## KNAS90001-E

[FAILED] The command could not be started because other commands are running.

#### Description

The command could not be started because another command is executing, and SLM - Manager cannot be running while that other command is executing.

#### (S)

Stops the command you attempted to execute.

#### (O)

Wait until the other command being executed has finished, and then execute your command again.

## KNAS90002-E

[FAILED] The command could not be started because other commands are running.

## Description

The command could not be started because another command is executing, and SLM - Manager cannot be running while that other command is executing.

#### (S)

Stops the command you attempted to execute.

#### (O)

Wait until the other command being executed has finished, and then execute your command again.

## KNAS90003-E

[FAILED] The number of command-line arguments is illegal.

#### Description

An invalid number of command arguments were specified.

JP1/Service Level Management Description

## (S)

Stops the command.

## (O)

Check for an error in the command arguments.

## KNAS90004-E

## [FAILED] The length of the optional file name is illegal.

## Description

The length of the options file path is invalid.

## (S)

Stops the command.

## (0)

Check and, if necessary, revise the path of the options file.

## KNAS90005-E

[FAILED] The format of the optional file name is illegal.

## Description

The format of the options file path is invalid.

## (S)

Stops the command.

## (O)

Check and, if necessary, revise the path of the options file.

## KNAS90006-E

[FAILED] It failed in the acquisition of installation folder path.

## Description

The installation destination folder path is invalid.

## (S)

Stops the command.

## (0)

Check whether the product has been installed correctly.

## KNAS90007-E

[FAILED] The length of the installation folder path is illegal.

#### Description

The length of the installation destination folder path is invalid.

#### (S)

Stops the command.

## (O)

Check whether the product has been installed correctly.

## KNAS90008-E

[FAILED] The format of the installation folder path is illegal.

## Description

The format of the installation destination folder path is invalid.

## (S)

Stops the command.

## (O)

Check whether the product has been installed correctly.

## KNAS90009-E

[FAILED] A setup error occurred. Please refer to the log file.

## aa....aa

aa....aa: Log file path

## Description

An error occurred in setup processing.

# (S)

Stops the command.

# (O)

The problem corresponding to the code output to the log file has occurred.

Try the following:

- Make sure SLM is installed correctly.
- Make sure there is no problem with file and folder access rights.

If this does not resolve the problem, take corrective action as described in the table below for the code that was output to the log file.

Once the problem is resolved, run setup again.

Code <sup>#</sup>	Description	Corrective action
1 <i>x</i>	An attempt to retrieve the setup options failed. The options file might be unreadable, or the definitions in the options file might be incorrect.	<ul> <li>Try the following:</li> <li>Make sure there is no problem with the definitions in the options file.</li> <li>Make sure the items that are required to be set have definitions.</li> <li>Make sure there is no problem with the format of the paths defined in the options file.</li> <li>If this does not resolve the problem, note the return code and error code, and contact a system administrator.</li> </ul>
2 <i>x</i>	An attempt to set a Web application failed. It is possible that the file or folder cannot be modified.	<ul> <li>Try the following:</li> <li>Close all instances of Internet Explorer that are connected to SLM - Manager. In addition, close all instances of Internet Explorer on the local computer.</li> <li>If the SLM - Manager service SLM - Manager Web Service (service name: JP1_ITSLM_MGR_Web_Service) is running, terminate it.</li> <li>Log off or restart Windows.</li> <li>If this does not resolve the problem, note the return code and error code, and contact a system administrator.</li> </ul>
3х	An attempt to set the Web server failed. The Web server might not be installed properly, or the Web server might be running, or the Web server might have shut down completely.	<ul> <li>Try the following:</li> <li>Make sure there is no problem with the definitions in the options file.</li> <li>Close all instances of Internet Explorer that are connected to SLM - Manager. In addition, close all instances of Internet Explorer on the local computer.</li> <li>If the SLM - Manager service SLM - Manager Web Service (service name: JP1_ITSLM_MGR_Web_Service) is running, terminate it.</li> <li>Log off or restart Windows.</li> <li>If this does not resolve the problem, note the return code and error code, and contact a system administrator.</li> </ul>
4 <i>x</i>	An attempt to set data management functions failed. The data management functions might not be installed correctly, or they might be in a status in which their settings cannot be modified.	<ul> <li>Try the following:</li> <li>Make sure there is no problem with the definitions in the options file.</li> <li>If the SLM - Manager service SLM - Manager Service (service name: JP1_ITSLM_MGR_Service) is running, terminate it.</li> <li>If the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition_JL0) is running, restart it or terminate it.</li> <li>Log off or restart Windows.</li> <li>If this does not resolve the problem, note the return code and error code, and contact a system administrator.</li> </ul>
5 <i>x</i>	An attempt to extract files needed for SLM setup failed.	Note the return code and error code, and contact a system administrator.
6 <i>x</i>	An attempt to deploy configuration files to the execution environment of SLM - Manager failed.	Note the return code and error code, and contact a system administrator.
7 <i>x</i>	An attempt to deploy configuration files to the execution environment of SLM - UR failed.	Note the return code and error code, and contact a system administrator.
8 <i>x</i>	An attempt to deploy configuration files to the service detection execution environment of SLM - UR failed.	Note the return code and error code, and contact a system administrator.

Code <sup>#</sup>	Description	Corrective action
9 <i>x</i>	An attempt to set a Windows service failed. The problem might be with the access rights to the Windows service, or it might be that the registered Windows service is in a status in which its settings cannot be updated.	<ul> <li>Try the following:</li> <li>If the SLM - Manager service SLM - Manager Web Service (service name: JP1_ITSLM_MGR_Web_Service) is running, terminate it.</li> <li>If the SLM - Manager service SLM - Manager Service (service name: JP1_ITSLM_MGR_Service) is running, terminate it.</li> <li>If the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition_JL0) is running, restart it or terminate it.</li> <li>Log off or restart Windows.</li> <li>If this does not resolve the problem, note the return code and error code, and contact a system administrator.</li> </ul>
Ax	An attempt to deploy configuration files for data management functions failed.	Note the return code and error code, and contact a system administrator.

#: *x* stands for 0 through 9 or A through F.

# KNAS90010-E

[FAILED] An unsetup error occurred. Please refer to the log file.

aa....aa

## aa....aa: Log file path

### Description

An error occurred in unsetup processing.

## (S)

Stops the command.

## (O)

The problem corresponding to the code output to the log file has occurred.

Try the following:

- Make sure SLM is installed correctly.
- Make sure there is no problem with file and folder access rights.

If this does not resolve the problem, take corrective action as described in the table below for the code that was output to the log file.

Once the problem is resolved, run unsetup again.

Code <sup>#</sup>	Description	Corrective action
1 <i>x</i>	An attempt to retrieve the setup options failed. The options file might be unreadable, or the definitions in the options file might be incorrect.	<ul> <li>Try the following:</li> <li>Make sure there is no problem with the definitions in the options file.</li> <li>Make sure the items that are required to be set have definitions.</li> <li>Make sure there is no problem with the format of the paths defined in the options file.</li> </ul>

Code <sup>#</sup>	Description	Corrective action
1x	An attempt to retrieve the setup options failed. The options file might be unreadable, or the definitions in the options file might be incorrect.	If this does not resolve the problem, note the return code and error code, and contact a system administrator.
2 <i>x</i>	An attempt to set a Web application failed. It is possible that the file or folder cannot be modified.	<ul> <li>Try the following:</li> <li>Close all instances of Internet Explorer that are connected to SLM - Manager. In addition, close all instances of Internet Explorer on the local computer.</li> <li>If the SLM - Manager service SLM - Manager Web Service (service name: JP1_ITSLM_MGR_Web_Service) is running, terminate it.</li> <li>Log off or restart Windows.</li> <li>If this does not resolve the problem, note the return code and error code, and contact a system administrator.</li> </ul>
3x	An attempt to set the Web server failed. The Web server might not be installed properly, or the Web server might be running, or the Web server might have shut down completely.	<ul> <li>Try the following:</li> <li>Make sure there is no problem with the definitions in the options file.</li> <li>Close all instances of Internet Explorer that are connected to SLM - Manager. In addition, close all instances of Internet Explorer on the local computer.</li> <li>If the SLM - Manager service SLM - Manager Web Service (service name: JP1_ITSLM_MGR_Web_Service) is running, terminate it.</li> <li>Log off or restart Windows.</li> <li>If this does not resolve the problem, note the return code and error code, and contact a system administrator.</li> </ul>
4 <i>x</i>	An attempt to set data management functions failed. The data management functions might not be installed correctly, or they might be in a status in which their settings cannot be modified.	<ul> <li>Try the following:</li> <li>Make sure there is no problem with the definitions in the options file.</li> <li>If the SLM - Manager service SLM - Manager Service (service name: JP1_ITSLM_MGR_Service) is running, terminate it.</li> <li>If the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition_JL0) is running, restart it or terminate it.</li> <li>If the SLM - Manager service SLM - Manager DB Cluster Service (service name: HiRDBClusterService_JL0) is running, restart it or terminate it.</li> <li>If the SLM - Manager service SLM - Manager DB Cluster Service (service name: HiRDBClusterService_JL0) is running, restart it or terminate it.</li> <li>Log off or restart Windows.</li> <li>If this does not resolve the problem, note the return code and error code, and contact a system administrator.</li> </ul>
5 <i>x</i>	An attempt to extract files needed for SLM setup failed.	Note the return code and error code, and contact a system administrator.
6 <i>x</i>	An attempt to deploy configuration files to the execution environment of SLM - Manager failed.	Note the return code and error code, and contact a system administrator.
7 <i>x</i>	An attempt to deploy configuration files to the execution environment of SLM - UR failed.	Note the return code and error code, and contact a system administrator.
8 <i>x</i>	An attempt to deploy configuration files to the service detection execution environment of SLM - UR failed.	Note the return code and error code, and contact a system administrator.
9 <i>x</i>	An attempt to set a Windows service failed. The problem might be with the access rights to the Windows service, or it might be that the registered Windows service is in a status in which its settings cannot be updated.	<ul> <li>Try the following:</li> <li>If the SLM - Manager service SLM - Manager Web Service (service name: JP1_ITSLM_MGR_Web_Service) is running, terminate it.</li> </ul>

Code <sup>#</sup>	Description	Corrective action
9 <i>x</i>	An attempt to set a Windows service failed. The problem might be with the access rights to the Windows service, or it might be that the registered Windows service is in a status in which its settings cannot be updated.	<ul> <li>If the SLM - Manager service SLM - Manager Service (service name: JP1_ITSLM_MGR_Service) is running, terminate it.</li> <li>If the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition_JL0) is running, restart it or terminate it.</li> <li>Log off or restart Windows.</li> <li>If this does not resolve the problem, note the return code and error code, and contact a system administrator.</li> </ul>
Ax	An attempt to deploy configuration files for data management functions failed.	Note the return code and error code, and contact a system administrator.
Bx	An attempt to migrate the table structure of the data management functions failed.	<ul> <li>Try the following:</li> <li>Make sure there is no problem with the definitions in the options file.</li> <li>If the SLM - Manager service SLM - Manager Service (service name: JP1_ITSLM_MGR_Service) is running, terminate it.</li> <li>If the SLM - Manager service SLM - Manager DB Service (service name: HiRDBEmbeddedEdition_JL0) is running, restart it or terminate it.</li> <li>If the SLM - Manager service SLM - Manager DB Cluster Service (service name: HiRDBClusterService_JL0) is running, restart it or terminate it.</li> <li>Log off or restart Windows.</li> <li>If this does not resolve the problem, note the return code and error code, and contact a system administrator.</li> </ul>
Cx	An attempt to configure the Java execution environment failed. The Java Runtime Environment might not be installed properly, or the Java process might be running, or the Java process might be completely stopped.	<ul> <li>Try the following:</li> <li>Make sure there is no problem with the definitions in the options file.</li> <li>If the SLM - Manager service SLM - Manager Service (service name: JP1_ITSLM_MGR_Service) is running, terminate it.</li> <li>If the SLM - Manager service SLM - Manager Web Service (service name: JP1_ITSLM_MGR_Web_Service) is running, terminate it.</li> <li>Log off or restart Windows.</li> <li>If this does not resolve the problem, note the return code and error code, and contact a system administrator.</li> </ul>

#: *x* stands for 0 through 9 or A through F.

# KNAS90011-I

[ SUCCEEDED ] The setup was finished.

## Description

Setup was completed.

## KNAS90012-I

#### [ SUCCEEDED ] The unsetup was finished.

#### Description

Unsetup was completed.

## KNAS90013-E

[FAILED] Invalid arguments. arguments="aa....aa"

#### aa....aa: Command arguments

### Description

The arguments are invalid.

#### (S)

Stops the command.

#### (O)

Check the arguments.

## KNAS90014-E

[FAILED] The command-line arguments are insufficient.

#### Description

There are not enough arguments.

### (S)

Stops the command.

#### (O)

Check the arguments.

## KNAS91000-I

The *aa....aa* command is started.

#### aa....aa: Command name

## Description

The command has started.

# KNAS91001-I

Command information. "aa....aa"

#### aa....aa: Command execution format

#### Description

Reports command execution information.

# KNAS91002-I

The *aa....aa* command was finished normally.

aa....aa: Command name

#### Description

The command terminated normally.

# KNAS91020-E

The *aa....aa* command was finished abnormally.

# aa....aa: Command name

#### Description

The command terminated abnormally.

#### (S)

Stops the command.

# (O)

Check the error information and logs, and then take corrective action.

# KNAS91021-E

The error in which command execution is impossible occurred.

# Description

An error occurred that renders execution of the command impossible.

# (S)

Stops the command.

# (0)

Collect data and contact a system administrator.

For details about collecting data, see 7.1.6 Collecting the data needed for determining the cause of a problem.

# KNAS91022-E

Insufficient memory occurred.

#### Description

A memory shortage occurred.

(S)

Stops the command.

#### (O)

Allocate sufficient memory space and execute the command again. If the same problem reoccurs, contact a system administrator.

# KNAS91023-E

Argument is not omissible.

# Description

An argument cannot be omitted.

#### (S)

Stops the command.

# (O)

Check the arguments.

# KNAS91024-E

Invalid arguments. arguments="aa....aa"

# aa....aa: Command arguments

# Description

The arguments are invalid.

# (S)

Stops the command.

# (O)

Check the arguments.

# KNAS91025-E

Access to a database went wrong.

# Description

An attempt to access the database failed.

# (S)

Stops the command.

# (O)

Check and, if necessary, revise the command arguments, and then re-execute the command. If the problem reoccurs, take the following corrective action.

If execution of the command was suspended before this message was output:

Wait while database rollback processing executes, and then retry the operation.

# Otherwise:

Check whether the KFPH22025-E or KFPH22026-E message was output to the event log. If such a message was output, there is not enough space in the database. Extend the database area and execute setup again.

If such a message was not output, collect data and contact a system administrator.

For details about collecting data, see 7.1.6 Collecting the data needed for determining the cause of a problem.

# KNAS91026-E

The format version of a database is not supported.

# Description

The version of SLM - Manager is not 09-51 or later.

#### (S)

Stops the command.

# (0)

Make sure that product installation and setup were done correctly.

# KNAS91027-E

Opening of a file went wrong.

# Description

An attempt to open a file failed.

# (S)

Stops the command.

# (O)

Confirm the location of the specified file. If the file exists, make sure that access rights to the relevant files and folders are set properly, and that the correct file is specified as the input file.

# KNAS91028-E

Closing of a file went wrong.

#### Description

An attempt to close a file failed.

#### (S)

Stops the command.

# (O)

Confirm the location of the specified file. If the file exists, make sure the access rights to the relevant files and folders are set properly.

# KNAS91029-E

An error occurred in file I/O processing of a command.

#### Description

An error occurred during the command's file I/O processing.

#### (S)

Stops the command.

#### (O)

Confirm the location of the specified file. If the file exists, make sure the access rights to the relevant files and folders are set properly.

# KNAS91030-E

Since the system has not started, a command cannot be executed.

# Description

The command could not be executed because the SLM - Manager service **SLM - Manager Service** (service name: JP1\_ITSLM\_MGR\_Service) is not running.

#### (S)

Stops the command.

# (O)

Start the SLM - Manager service SLM - Manager Service, which is an execution condition for the command.

# KNAS91031-E

The command could not be started because other commands are running.

# Description

The command could not be started because other commands that cannot be executing at the same time are running.

(S)

Stops the command you were attempting to execute.

#### (O)

Wait until the commands that are executing have finished, and then re-execute your command.

# KNAS91032-E

The command could not be started because other operations are running.

#### Description

The command could not be started because other operations that cannot be executing at the same time are running.

#### (S)

Stops the command.

# (O)

Wait until the operations that are executing have been completed, and then retry your command.

# KNAS91033-E

The character which cannot be used is contained. value="aa....aa"

# aa....aa: Value

# Description

A service group name or monitored service name contains prohibited characters.

#### (S)

Stops the command.

#### (O)

Check the arguments.

# KNAS91034-E

The format of specified URI is invalid. URI = "aa....aa"

#### *aa....aa*: URI

# Description

There is a format error with the specified URI.

#### (S)

Stops the command.

# (O)

Check the arguments.

# KNAS91035-E

The command could not start because the environment cannot run the command. (cause = aa....aa)

#### aa....aa: Cause

#### Description

The command cannot be started since this cannot be executed in this environment.

The meanings of the failure causes are as follows.

Single-manager: The command is being executed by SLM - Manager in the single-manager configuration. Manager (slave): The command is being executed by a slave instance of SLM - Manager in the master/slave configuration.

(S)

Stops the command.

#### (O)

Execute the command in a SLM - Manager environment that fulfills the conditions for execution of the command.

# KNAS91036-E

An error occurred during communication processing of a command.

#### Description

An error occurred while processing communication of the command.

(S)

Stops the command.

#### (O)

Check the message output in the message log of SLM - Manager, which is the environment in which the command has been executed, and take corrective measures.

# KNAS91100-I

```
jslmmgrexport [ -g <service group name> -s <service name> ] -t '{ <days> | all | none }' -o <output file name> [ -f ]
```

#### Description

Describes the usage of the jslmmgrexport command.

# KNAS91120-E

Acquiring an output file went wrong.

#### Description

The attempt to acquire an export file failed.

(S)

Stops the command.

(0)

Confirm the location of the specified file. If the file exists, make sure the access rights to the relevant files and folders are set properly.

# KNAS91121-E

Service is not found.

# Description

The specified monitored service was not found.

#### (S)

Stops the command.

# (O)

Make sure the names of the specified service group and monitored service are correct.

# KNAS91200-I

jslmmgrimport -i < input file name> [ -g < service group name> -s < service name> ] [ -m [ < web server ip address> < ur ip address> ] ] [ -p ]

# Description

Describes the usage of the jslmmgrimport command.

# KNAS91220-E

Specification of the service group name by -g option and specification of the service name by -s option cannot be performed to two or more services.

# Description

Because there are multiple monitored services in the file to be imported, you cannot specify the -g option (service group name) or the -s option (monitored service name).

#### (S)

Stops the command.

#### (O)

Check the arguments.

# KNAS91221-E

Specification of the IP address by -m option cannot be performed to two or more services.

#### Description

Because there are multiple monitored services in the file to be imported, you cannot specify the -m option (IP address).

#### (S)

Stops the command.

#### (O)

Check the arguments.

# KNAS91223-E

Service is not stopped. service group name=aa....aa, service name=bb....bb

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

#### Description

The targeted monitored service has not stopped.

#### (S)

Stops the command.

# (0)

Log in to the system and set the status of the targeted monitored service to Stopped.

# KNAS91224-E

Acquisition of service ID went wrong.

# Description

An attempt to acquire a service ID failed.

#### (S)

Stops the command.

# (O)

Collect data, and then contact a system administrator.

For details about collecting data, see 7.1.6 Collecting the data needed for determining the cause of a problem.

# KNAS91225-E

It overlapped with the service in a database.

#### Description

A monitored service in the data to be imported is already registered in the database.

#### (S)

Stops the command.

# (O)

Log in to the system and delete the unneeded monitored service, or else specify the command arguments to allow it to be overwritten.

# KNAS91226-E

Registration of service went wrong. The error occurred in reservation of the database domain.

# Description

An attempt to reserve database space for a monitored service failed.

(S)

Stops the command.

# (O)

Run the database cleanup command (jslmmgrdbcleanup) and try the operation again.

For details about the jslmmgrdbcleanup command, see 9.8 jslmmgrdbcleanup (cleans up database) in 9. Commands.

If the problem reoccurs after you have executed the jslmmgrdbcleanup database cleanup command, there is not enough space in the database. Extend the database area, and then execute setup again.

# KNAS91227-E

The number of Web transactions exceeded a system limit. service group name=aa....aa, service name=bb....bb

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

# Description

The number of Web transactions registered for the monitored service has exceeded the maximum.

# (S)

Stops the command.

# (0)

Re-execute the command after deleting a Web transaction from the monitored service for which it is registered, or else re-register by specifying another service name with the -s option.

# KNAS91228-E

The number of report template exceeded a system limit. service group name=aa....aa, service name=bb....bb

aa....aa: Name of the service group to which the monitored service belongs

bb....bb: Name of the monitored service

#### Description

The number of report templates registered for the monitored service has exceeded the maximum.

(S)

Stops the command.

#### (O)

Re-execute the command after deleting a report template from the monitored service for which it is registered, or else re-register by specifying another service name with the -s option.

# KNAS91300-I

jslmmgrdbcleanup ( There is no argument which can be specified. )

#### Description

 $Describes \ the \ usage \ of \ the \ \texttt{jslmmgrdbcleanup} \ command.$ 

# KNAS91301-E

The cleanup of the database failed.

# Description

The attempt to clean up the database failed.

A memory shortage or processing timeout occurred.

#### (S)

Stops the command.

# (0)

Check the memory usage. If there is insufficient free space, allocate memory space, and then retry the operation. If there is sufficient memory space, wait a while, and then retry the operation. If the same problem reoccurs, collect data, and then contact a system administrator.

For details about collecting data, see 7.1.6 Collecting the data needed for determining the cause of a problem.

# KNAS91400-I

jslmreport -t '{ service | system | info | overview | graph }' -g <service group name> -s <service name> -d <report start date> -i '{ 1day | 1week | 1month | 3months }' -o <output file name> [ -f ]

# Description

Describes the usage of the jslmreport command.

# KNAS91500-I

jslmmgrconfig -t '{ edit -g <service group name> -s <service name> -c { service <web server ip address> <ur ip address> <URI> | system } | get -m { config -g <service group name> -s <service name> [ -r ] -o <output file name> [ -f ] | monitor -g <service group name> -s <service name> -type { service | system } -o <output file name> [-f] } | set -m { config [-f] -i <input file name> | monitor -i <input file name> } | add [ -p { <manager host name> | <manager ip address> } ] -g <service group name> -s <service name> -c { service <web server ip address> <ur ip address> <URI> | system } }'

#### Description

Describes the usage of the jslmmgrconfig command.

# KNAS91501-E

The monitoring configuration of the specified service to be monitored is the same as the configuration that was specified by using the -c option. monitoring configuration = aa...aa, arguments = bb....bb

*aa....aa*: Monitoring configuration type (service: service monitoring configuration, system: system monitoring configuration)

#### bb....bb: Command argument

Description

The specified monitoring configuration of the monitored service and the monitoring configuration specified with the -c option are identical.

#### (S)

Stops the command.

#### (0)

Check the arguments.

# KNAS91502-E

The contents of the specified CSV file are incorrect.

#### Description

The content of the specified CSV file is not valid.

#### (S)

Stops the command.

#### (0)

Check the arguments.

JP1/Service Level Management Description

# KNAS91503-E

A refresh of the configuration information failed.

#### Description

An error occurred while refreshing the configuration information.

#### (S)

Stops the command.

# KNAS91504-E

A refresh of the configuration information failed. A communication error occurred between PFM - Manager and SLM - Manager.

# Description

A communication error occurred between PFM - Manager and SLM - Manager.

#### (S)

Stops the command.

# KNAS91505-E

During a refresh of the configuration information, some monitor items will be deleted. If you want to refresh configuration information, specify the -r option.

#### Description

The -r option is not specified in cases when the data has been deleted from the obtained configuration information of Performance Management yet not deleted from the configuration information of registered services.

#### (S)

Stops the command.

# (0)

Check the arguments.

# KNAS91506-E

A request to acquire service monitoring settings was specified for a service of a system monitoring configuration.

#### Description

A request to acquire service monitoring settings has been specified in relation to a service of the system monitoring configuration.

#### (S)

Stops the command.

# (O)

Check the arguments.

# KNAS91507-E

Manager is not found.

# Description

The Manager of the service being registered does not exist on the DB of the master.

#### (S)

Stops the command.

# (0)

Check the arguments.

# KNAS91508-E

The specified service group and service name have already been registered in the database.

# Description

The specified service group and service name already exist on the DB.

#### (S)

Stops the command.

# (O)

Check the arguments.

# KNAS91509-E

The number of monitoring items exceeded the system limit. (service group name = aa....aa, service name = bb....bb)

aa....aa: Service group name

# *bb....bb*: Service name

# Description

The maximum number of monitor items that can be registered to a single monitored service has been exceeded.

# (S)

Stops the command.

# (O)

Either re-execute the command after deleting monitor items of the monitored service at the registration destination, or re-register the service upon specifying a different service name with the -s option.

# KNAS91600-I

jslmmgrls

#### Description

Describes the usage of the jslmmgrls command.

# KNAS91700-I

jslmmgrconnect -a <host name> [ -p <port number>]

# Description

Describes the usage of the jslmmgrconnect command.

# KNAS99000-I

aa....aa----bb....bb

aa....aa: Network interface number

bb....bb: IP address

# KNAS99001-E

No Network Available.

# Description

No network is available.

(S)

Stops the command.

(O)

Check the network connection environment.

# KNAS99002-E

An error occurred while processing a function. function=aa....aa, error code=bb....bb

aa....aa: Function name

#### *bb....bb*: Error code

#### 11. Messages

JP1/Service Level Management Description

#### Description

A function error occurred.

(S)

Stops the command.

# (O)

Contact a system administrator.

# KNAS99003-E

Memory allocation failed.

# Description

A memory shortage occurred.

#### (S)

Stops the command.

# (O)

Contact a system administrator.

# KNAS99013-E

Invalid arguments. arguments="aa....aa"

#### aa....aa: Command line arguments

# Description

There is an error in the command arguments, or an unneeded command argument was specified.

#### (S)

Stops the command.

#### (O)

Check the arguments of the command.

# KNAS99050-I

The *aa....aa* command ended normally.

# aa....aa: Name of the command

# Description

The command terminated normally.

The aa....aa command terminated abnormally. (bb....bb)

aa....aa: Name of the command

bb....bb: Name of the log file

# Description

The command terminated abnormally.

#### (S)

Stops the command.

(O)

After taking one of the corrective actions below, re-execute the command. If this does not resolve the problem, contact a system administrator.

- Make sure you specified correctly the absolute path of the backup file when the command was executed.
- Check the file indicated by *bb....bb*, and if there is a problem, eliminate the cause of the error.

#### KNAS99052-E

The directory already exists in the current directory. directory=aa....aa

aa....aa: Name of the folder

Description

The folder indicated by *aa....aa* already exists in the folder.

(S)

Stops the command.

#### (O)

After taking one of the corrective actions below, re-execute the command.

- Change the current folder where the command is to be executed.
- Back up the folder indicated by *aa....aa* as necessary, and then delete the relevant folder from the current folder.

# KNAS99053-E

The file already exists in the current directory. file=aa....aa

aa....aa: Name of the file

# Description

The file indicated by *aa....aa* already exists in the current folder.

(S)

Stops the command.

#### (O)

After taking one of the corrective actions below, re-execute the command.

- Change the current folder where the command is to be executed.
- Save the file indicated by *aa....aa* as necessary, and then delete the relevant file from the current folder.

# KNAS99054-E

It failed in making the directory. directory=aa....aa

aa....aa: Name of the folder

#### Description

The attempt to create the folder indicated by aa....aa failed.

#### (S)

Stops the command.

#### (0)

Check the free space on the drive where the current folder is located. If this does not resolve the problem, contact a system administrator.

# KNAS99055-W

The file is not found. file=*aa*....*aa* 

aa....aa: Name of the file

#### Description

The file indicated by *aa....aa* could not be found.

#### (S)

Continues processing.

# KNAS99056-E

The number of command-line arguments is illegal.

#### Description

The specification of the arguments is invalid.

(S)

Stops the command.

#### (O)

Check and, if necessary, revise the command arguments, and then re-execute the command.

# KNAS99057-E

SLM - Manager Service not stopped.

#### Description

The SLM - Manager service SLM - Manager Service (service name: JP1\_ITSLM\_MGR\_Service) has not stopped.

#### (S)

Stops the command.

#### (O)

After stopping the SLM - Manager service SLM - Manager Service, run the command again.

#### KNAS99058-W

Failed to get the database log files.

#### Description

An attempt to collect the failure information in the database failed.

#### (S)

Continues processing.

# KNAS99059-E

The file required to run this command is not found. file=aa....aa

aa....aa: Name of the file

Description

The file indicated by *aa....aa* could not be found.

#### (S)

Stops the command.

#### (O)

A file needed to execute the command could not be found. Contact a system administrator.

# KNAS99060-E

Failed to read the file required to run this command. file=aa....aa

#### aa....aa: Name of the file

# Description

An attempt to read the file indicated by *aa....aa* failed.

JP1/Service Level Management Description

(S)

Stops the command.

(0)

An attempt to read a file required to run the command failed. Check the read permissions for the file. If this does not resolve the problem, contact a system administrator.

# KNAS99061-W

Failed to add the file to zip file. file=aa....aa

aa....aa: Name of the file

# Description

An attempt to add the file indicated by *aa....aa* to the zip file failed.

# (S)

Continues processing.

# KNAS99062-W

Failed to add the directory to zip file. directory=aa....aa

# aa....aa: Name of the folder

# Description

An attempt to add the folder indicated by *aa....aa* to the zip file failed.

# (S)

Continues processing.

# KNAS99063-W

Failed to acquire the system information files.

# Description

Failed to execute the jslmmgrls command, and failed to add the system information file to the zip file.

# (S)

Continues processing.

JP1/Service Level Management Description

# Appendixes

The following table lists the port numbers used by SLM.

# Table A-1: Port numbers used by SLM

Default port numbe r	Purpose	Target	Definition file where port number is defined	Property		
20900	Embedded Web server's listen port	Mgr	<i>SLM-Manager-installation-folder</i> \mgr\system \psb\httpsd\conf\httpsd.conf	Listen		
20901 Embedded Web server's internal communication port		Mgr	SLM-Manager-installation-folder\mgr\system \psb\CC\web\containers \JP1_ITSLM_MGR_WC_Server\usrconf \usrconf.properties	webserver.connect or.ajp13.port		
			SLM-Manager-installation-folder\mgr\system \psb\CC\web\redirector \workers.properties	worker.itslm.port		
20902	Embedded Web server's completion-message receiving port	Mgr	SLM-Manager-installation-folder\mgr\system \psb\CC\web\containers \JP1_ITSLM_MGR_WC_Server\usrconf \usrconf.properties	webserver.shutdow n.port		
20903	Embedded database's listen port	Mgr	<i>SLM-Manager-installation-folder</i> \mgr\system \hdb\CONF\pdsys	pd_name_port		
			<i>SLM-Manager-installation-folder</i> \mgr\system \hdb\CONF\emb\HiRDB.ini	PDNAMEPORT		
			<i>SLM-Manager-installation-folder</i> \mgr\conf \jplitslm.properties	rdbPort		
20904	0904 RMI communication port	RMI communication port	RMI communication port Mg	Mgr	<i>SLM-Manager-installation-folder</i> \mgr\conf \jplitslm.properties	rmiManagerPort
			<i>SLM-Manager-installation-folder</i> \mgr\conf \jplitslm.properties	rmiMasterPort		
			<pre>SLM-Manager-installation-folder\mgr \sdpengine\analysisN<sup>#1</sup>\conf \system_config.properties</pre>	rmi.serverPort		
		UR	<i>SLM-UR-installation-folder</i> \ur\conf \jplitslmur.properties <sup>#2</sup>	rmiManagerPort		
20910	-	UR	<i>SLM-UR-installation-folder</i> \ur\conf \jplitslmur.properties	rmiUrPort		
			<i>SLM-UR-installation-folder</i> \ur\sdpengine \collector\conf \system_config.properties	rmi.serverPort		
			SLM-UR-installation-folder \ur\sdpengine\collector2\conf \system_config.properties			
			<i>SLM-UR-installation-folder</i> \ur\sdpengine \recorder\conf \system config.properties			

Default port numbe r	Purpose	Target	Definition file where port number is defined	Property
22286	PFM - Manager port	Mgr	<i>SLM-Manager-installation-folder</i> \mgr\conf \jplitslm.properties	pfmManagerPort
20905	Performance Management system performance information receiving port	Mgr	<i>SLM-Manager-installation-folder</i> \mgr\conf \jplitslm.properties	pfmReceivePort

Legend:

Mgr: SLM - Manager UR: SLM - UR

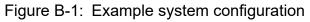
#1

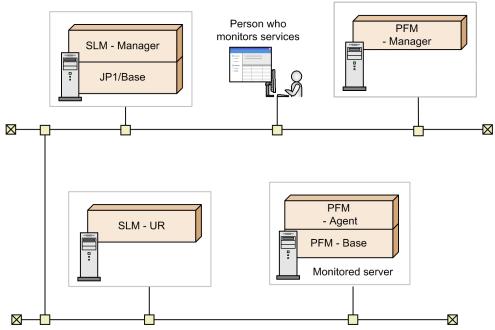
N is a number from 1 to 10.

#2

Port numbers are defined in all the corresponding SLM - UR system definition files linked to SLM - Manager.

This section uses the example system configuration shown below to explain the port numbers used in SLM communication and the direction in which data passes through a firewall (the direction in which a connection is established).





- 1. The person who monitors services uses a browser to connect to SLM Manager.
- 2. SLM UR is deployed to monitor the Web system services.
- 3. The PFM Manager that is linked to SLM Manager is deployed.
- 4. To monitor a monitored server, PFM Agent is deployed on the monitored server.
- Communication between SLM Manager and the browser Communication between SLM - Manager and the browser is as follows:

Port number of the browser	Pass-through direction	Communication protocol	Port number of SLM - Manager (HTTP server)
(ANY)/tcp	<b>→</b>	НТТР	20900/tcp (httpsd)

 Communication between SLM - Manager and SLM - UR Communication between SLM - Manager and SLM - UR is as follows:

Port number of SLM - Manager	Pass-through direction	Communication protocol	Port number of SLM - UR
(ANY)/tcp	<b>→</b>	RMI	20910/tcp (jslmuRMI)
(ANY)/tcp	<b>→</b>	RMI	(ANY)/tcp
20904/tcp(jslmmRMI)	+	RMI	(ANY)/tcp
(ANY)/tcp	+	RMI	(ANY)/tcp

Communication between SLM - Manager and PFM - Manager
 Communication between SLM - Manager and PFM - Manager is as follows:

Port number of SLM - Manager	Pass-through direction	Communication protocol	Port number of PFM - Manager
(ANY)/tcp	<b>→</b>	RMI	22286/tcp
(ANY)/tcp	<b>→</b>	RMI	(ANY)/tcp

Communication between SLM - Manager and PFM - Base
 Communication between SLM - Manager and PFM - Base is as follows:

Port number of SLM - Manager	Pass-through direction	Communication protocol	Port number of PFM - Base
20905/tcp(jslmmadaptor)	+	ТСР	(ANY)/tcp

In addition to these communications, the following communications are also available:

- Communications using ports in the range from 20901/tcp to 20904/tcp on the local host on which SLM Manager is running
- Communications using port 20910/tcp on the local host on which SLM UR is running
- Collection of HTTP packets by SLM UR

Set up the firewall so that SLM - UR can obtain HTTP packets that were copied by the port mirroring function. To specify a program to allow communication, specify settings on the host where SLM - UR was set up so that communication of the following program is allowed:

• *SLM-UR-installation-folder*\ur\system\sdp\bin\sdppcap.exe

B. SLM Communication

# C. Limiting values when monitoring a monitored target with SLM

The following table shows the limiting values when monitoring a monitored target with SLM.

Table C-1: Lir	niting values w	when monitoring	a monitored	target with SLM
-	5	J		0

Category	Item	Limiting value	Reference destination
Settings	Overall number of monitoring items with SLM - Manager ((Number of All Web Access + Number of Web transactions) × 20 + (Number of monitoring items))	1,200 (standard)	3.2.7 Setting up the monitoring items for system performance as configuration information (working with Performance Management)
	Number of monitoring items that can be associated with a single monitored service being monitored by SLM - Manager	100	3.2.7 Setting up the monitoring items for system performance as configuration information (working with Performance Management)
	Number of monitored services that can be registered to SLM - Manager (All Web Access + Number of Web transactions)	50	<ul><li>3.2.2 Registering monitored services</li><li>3.2.5 Setting up the Web transactions to be monitored</li><li>10.6.5 Web transaction setting area</li></ul>
	Number of Web transactions that can be registered to a single monitored service	10	<ul><li>3.2.5 Setting up the Web transactions to be monitored</li><li>10.6.5 Web transaction setting area</li></ul>
	Number of Web access conditions that can be configured to a single Web transaction	5	3.2.5 Setting up the Web transactions to be monitored 10.6.7 Add Web access condition window
	Total number of query conditions and Cookie conditions that can be configured to a single Web access condition	20	<ul><li>3.2.5 Setting up the Web transactions to be monitored</li><li>10.6.7 Add Web access condition window</li></ul>
	Total number of query conditions and Cookie conditions that can be configured to a single session condition	10	<ul><li>3.2.5 Setting up the Web transactions to be monitored</li><li>10.6.6 Register Web transaction window</li></ul>
	Number of report templates that can be registered to a single monitored service	32	10.5.3 Report area
	Number of slave instances of SLM - Manager that can connect to one master instance of SLM - Manager	19 (standard)	1.4 Single-manager configuration and master/slave configuration of SLM - Manager
	Number of monitoring items when outputting the data of the performance graph displayed in the <b>Report</b> window to a CSV file	50	<ul><li>4.5.1 Overview of report creation</li><li>10.5.3 Report area</li><li>10.5.7 Preview report window</li></ul>
Data retention period	Retention period of past service or system performance data (number of days) <sup>#</sup>	1,828	<ul> <li>10.6.18 Monitor settings area (monitored target within the monitored service selected in the Services area)</li> <li>10.6.19 Monitor settings area (monitored service selected in the Services area)</li> </ul>
	Display guaranteed period (hours) of the access log	194	10.4.5 Access log area (Log data tab selected)
Display	Number of incidents that can be displayed in the <b>Access log</b> window	5,000	10.4.5 Access log area (Log data tab selected)

C. Limiting values when monitoring a monitored target with SLM

Category	Item	Limiting value	Reference destination
Display	Number of graphs that can be displayed in the <b>Report</b> window and <b>Troubleshoot</b> window	10	<ul><li>4.5.1 Overview of report creation</li><li>10.4.4 Event and Performance chart tabs area (Performance chart tab selected)</li><li>10.5.7 Preview report window</li></ul>
Data reception	Length (bytes) of HTTP packets that can be monitored by SLM	1,500	3.1.1 SLM's monitoring methods and types of monitored targets

#:

Data from more than 60 days in the past will be retained as report data.

C. Limiting values when monitoring a monitored target with SLM

# **D. Version Changes**

# D.1 Changes of 11-00

- The following descriptions were added because of support for the master/slave configuration of SLM Manager.
  - Single-manager configuration and master/slave configuration of SLM Manager
  - Registration destination of monitored services
  - New message log (SlaveMessageMN.log)
  - Procedures for changing the configuration of SLM Manager
  - Remarks regarding the jslmminfoget command
- The following descriptions were changed because of support for the master/slave configuration of SLM Manager.
  - Notes regarding the method of access from a browser
  - · Items defined with the options file of SLM Manager
- The following descriptions were added for the extension of the period of analysis for out-of-range value detection.
  - Period of analysis of out-of-range value detection
  - How to configure the period of analysis
- The following descriptions were changed for the extension of the period of analysis for out-of-range value detection.
  - The maximum value for the permitted number of days
  - The window for the Monitor settings area
- The following descriptions were changed in accordance with the change of conditions for changing the monitor settings.
  - Prerequisites for setting monitor items
  - Prerequisites for stopping monitoring
  - Causes for why monitoring settings cannot be changed
- A description of the audit log was added because of support for the audit log.
- The following commands were added.
  - The jslmmgrconfig (setting a monitored service) command
  - The jslmmgrconnect (connecting SLM Manager) command
  - The jslmmgrls (confirming the system management status of SLM Manager) command
  - The jslmurnals (displays the network adaptor address and IP address)
- The following terms were added to the glossary.
  - Single-manager configuration
  - Master/slave configuration
  - SLM Manager (master)
  - SLM Manager (slave)
- The following messages were added.

KNAS02133-I, KNAS03045-W, KNAS03046-W, KNAS03503-E, KNAS03504-E, KNAS03505-E, KNAS03507-W, KNAS03508-I, KNAS03509-I, KNAS03510-I, KNAS03511-I, KNAS03512-I, KNAS03513-I, KNAS03514-I, KNAS03515-E, KNAS03516-E, KNAS03517-E, KNAS03518-E, KNAS03519-E, KNAS09500-I, KNAS09501-E, KNAS09502-I, KNAS09503-E, KNAS09504-I, KNAS09505-E, KNAS09506-I, KNAS09507-E, KNAS09508-I, KNAS09509-E, KNAS09510-I, KNAS09511-E, KNAS09512-I, KNAS09513-E, KNAS09514-I, KNAS09515-E, KNAS09516-I, KNAS09517-E, KNAS09518-I, KNAS09519-E, KNAS09520-I, KNAS09521-E, KNAS09522-I, KNAS09523-E, KNAS09524-I, KNAS09525-E, KNAS09526-I, KNAS09527-E, KNAS09600-E, KNAS09601-E, KNAS09602-E, KNAS09603-E, KNAS15011-E, KNAS15012-E, KNAS15013-E, KNAS15014-I, KNAS15015-I, KNAS15016-E, KNAS15512-E, KNAS15513-E, KNAS15610-E, KNAS15724-E, KNAS15725-W, KNAS15819-E, KNAS16005-E, KNAS16111-E, KNAS16207-E, KNAS16426-E, KNAS16427-E, KNAS16504-E, KNAS16603-E, KNAS16703-E, KNAS16804-E, KNAS16805-E, KNAS16903-E, KNAS17003-E, KNAS17304-E, KNAS17404-E, KNAS17505-E, KNAS17540-E, KNAS17541-E, KNAS17542-E, KNAS17543-E, KNAS17612-E, KNAS17710-E, KNAS17808-E, KNAS18111-E, KNAS18203-E, KNAS18311-E, KNAS18452-E, KNAS18453-E, KNAS18503-E, KNAS18613-E, KNAS18704-E, KNAS18909-E, KNAS50111-E, KNAS50112-E, KNAS50113-E, KNAS50244-E, KNAS50245-E, KNAS50246-E, KNAS50247-E, KNAS91034-E, KNAS91035-E, KNAS91036-E, KNAS91500-I, KNAS91501-E, KNAS91502-E, KNAS91503-E, KNAS91504-E, KNAS91505-E, KNAS91506-E, KNAS91507-E, KNAS91508-E, KNAS91509-E, KNAS91600-I, KNAS91700-I, KNAS99063-W

# D.2 Changes from version 10-10 to version 10-50

- The following changes were made to support the system monitoring configuration:
  - The system configuration description was changed.
  - The procedures for registering monitored services and setting up monitoring items were changed.
  - A description about the -m argument was added to the explanation of the jslmmgrimport command.
  - Changes were made to the following windows and descriptions:

Add template window

Add/Delete monitor area

- Monitor settings area
- A description of detection procedures was added because the serviceBaselineExclusion and systemBaselineExclusion properties were added.
- Because the node state display switch function was added, the following window was changed:
  - Performance chart tab in the Troubleshoot window
- A description was added stating that a node state can be selected to check the timing of an event that caused an error or warning.
- The procedure for releasing the linkage between SLM and Performance Management was changed.
- The following JP1 events were added:
  - 0x00006893
  - 0x00006894
  - 0x00006895

The description stating that JP1 events related to an overage of a threshold are not issued in system performance was changed to state that JP1 events are issued in accordance with property settings.

- The following properties can now be edited by SLM:
  - dashboardChartPlotInterval

D. Version Changes

- dashboardPrioritizeSystem
- dashboardPropagateSystemStatus
- JP1EventForSystem
- serviceBaselineExclusion
- systemBaselineExclusion
- A description was added stating that service cannot be specified in the -t option when a service in a system monitoring configuration is specified in the -s option.
- The description of a window was changed because the system performance monitoring status is propagated to the service status.
- A description was added explaining how a performance chart is displayed for a range containing no performance data.
- A description was added stating that a performance chart might not be displayed correctly when data for a version earlier than 10-10 is stored in the database and **Monitor item state** is selected in **Node state display**.
- The descriptions of messages were changed.
- A description of the port numbers used in SLM communication and the firewall pass-through direction was added (the direction in which connection is established).

This appendix provides reference information, including various conventions, for this manual.

# E.1 Related publications

This manual is part of a related set of manuals. The manuals in the set are listed below (with the manual numbers):

# JP1/Base

• JP1 Version 11 JP1/Base User's Guide(3021-3-A01(E))

# **Performance Management**

- JP1 Version 11 JP1/Performance Management Planning and Configuration Guide(3021-3-A37(E))
- JP1 Version 11 JP1/Performance Management User's Guide (3021-3-A38(E))
- JP1 Version 11 JP1/Performance Management Remote Monitor for Platform Description, User's Guide and Reference(3021-3-A42(E))
- JP1 Version 11 JP1/Performance Management Remote Monitor for Oracle Description, User's Guide and Reference(3021-3-A44(E))
- JP1 Version 11 JP1/Performance Management Remote Monitor for Microsoft(R) SQL Server Description, User's Guide and Reference(3021-3-A45(E))
- JP1 Version 11 JP1/Performance Management Agent Option for Platform Description, User's Guide and Reference(For Windows Systems)(3021-3-A51(E))
- JP1 Version 11 JP1/Performance Management Agent Option for Platform Description, User's Guide and Reference(For UNIX Systems)(3021-3-A52(E))
- JP1 Version 11 JP1/Performance Management Agent Option for Service Response Description, User's Guide and Reference(3021-3-A53(E))
- JP1 Version 11 JP1/Performance Management Agent Option for Enterprise Applications Description, User's Guide and Reference(3021-3-A58(E))

# JP1/IM

- JP1 Version 11 JP1/Integrated Management Manager Overview and System Design Guide(3021-3-A07(E))
- JP1 Version 11 JP1/Integrated Management Manager Configuration Guide(3021-3-A08(E))
- JP1 Version 11 JP1/Integrated Management Manager Command and Definition File Reference(3021-3-A11(E))

Note that, in this manual, JP1 Version 11 is omitted from the titles of the related publications.

# E.2 Conventions: Abbreviations for product names

This manual uses the following abbreviations for product names:

Abbreviation		Full name or meaning	
HNTRLib2		Hitachi Network Objectplaza Trace Library 2	
JP1/IM	JP1/IM - Manager	JP1/Integrated Management - Manager	

Abbreviation		Full name or meaning
JP1/IM	JP1/IM - View	JP1/Integrated Management - View
SLM	SLM - Manager	JP1/Service Level Management - Manager
	SLM - UR	JP1/Service Level Management - User Response
JP1/NETM/DM		JP1/NETM/DM Client
		JP1/NETM/DM Client - Base
		JP1/NETM/DM Manager
Performance Management	PFM - Agent	JP1/Performance Management - Agent for Platform, and related Agent products
	PFM - Base	JP1/Performance Management - Base
	PFM - Manager	JP1/Performance Management - Manager
	PFM - RM	JP1/Performance Management - Remote Monitor for Platform, and related Agent products
	PFM - Agent for Service Response	JP1/Performance Management - Agent Option for Service Response
	PFM - Web Console	JP1/Performance Management - Web Console

# E.3 Conventions: Acronyms

This manual uses the following acronyms:

Acronym	Full name or meaning	
ASCII	American Standard Code for Information Interchange	
BNF	Backus Normal Form	
CSV	Comma Separated Value	
DB	Database	
GMT	Greenwich Mean Time	
GUI	Graphical User Interface	
IP	Internet Protocol	
MTBF	Mean Time Between Failure	
MTTR	Mean Time To Recovery	
NTFS	NT File System	
PDCA	Plan-Do-Check-Act	
RMI	Remote Method Invocation	
SLA	Service Level Agreement	
SLO	Service Level Objective	
TCP/IP	Transmission Control Protocol/Internet Protocol	
URI	Uniform Resource Identifier	

Acronym	Full name or meaning
URL	Uniform Resource Locator
UTC	Coordinated Universal Time
UTF-8	UCS Transformation Format 8

E. Reference Material for This Manual

# F. Glossary

access logs

Information about the requests and responses associated with a monitored target in SLM.

active server

Among the servers running in a cluster system, the server that is executing the business operations.

#### active system

A system that is initially started as an active server within a cluster system. Even if an active server becomes a standby server due to failover, this designation does not change.

#### All Web Access

A monitored target in SLM. All Web Access enables you to monitor average response time, throughput, and error rate for all requests and responses in the monitored service.

#### authentication server

A server that manages the access permissions of JP1 users.

One authentication server is required in each user authentication block. The administrator uses this server for centralized management of all JP1 users. When SLM is installed, the administrator must register JP1 user names on this server.

#### availability information

Data that is the result of monitoring whether a monitored service is running or has stopped.

availability monitoring

A monitoring method for determining availability, mean time to recovery (MTTR), mean time between failures (MTBF), and similar measures based on the availability information of the monitored service. Availability monitoring can be performed when PFM - Agent for Service Response is being used.

#### baseline

The metric indicating normative service performance and which serves as the basis for out-of-range value detection. It is created by averaging the accumulated historical service performance. In out-of-range value detection, when service performance is detected that veers substantially from this baseline, it is detected as a departure from the usual service performance.

# BNF notation

A character-based meta-language for defining the syntax of program source code, networks, protocols, and other languages intended for computers.

# business group

The unit around which Performance Management organizes the hosts to be monitored. Users assigned to a business group can view information collected by the monitoring agents monitoring the hosts in the business group.

# cluster software

The software that provides overall management of a cluster system. The cluster software monitors whether the system is running normally, and when a problem is detected it executes failover to prevent operations from coming to a stop.

#### cluster system

A system configured as multiple linked server systems, designed to continue operation even if one system fails. The term *failover* describes the case where a normal system takes over processing that was being executed by a system where a failure occurred. If a failure occurs in the server currently executing applications (primary node), a standby server (secondary node) takes over and continues processing the applications. Therefore, a cluster system is also referred to as a *node switching system*.

The term *cluster system* can also mean load balancing based on parallel processing. In this manual, however, *cluster system* refers only to a system able to provide failover capability to prevent disruption of business operations.

#### configuration information

Information that is required to link to Performance Management, including information about the business groups to be monitored and the monitoring items for system performance monitoring and availability monitoring.

#### drilldown

A method of data analysis that proceeds from summary data into the details by expanding lower levels of the data, one level at a time.

#### event

Information indicating the occurrence of circumstances constituting an error or warning. If availability monitoring is being performed (when linked to Performance Management), an event also reports information that is normally relevant when a monitored service has recovered from a stop.

#### failover

In a cluster system, the process of a standby server taking over processing from a running server in the event of a failure in order to prevent interruption of the business operations.

#### SLM - Manager

A program that aggregates and analyzes HTTP packets collected by SLM - UR in order to monitor the status of services.

SLM - Manager is accessed in order to check the status of services being monitored.

#### SLM - Manager (Master)

In the master/slave configuration, an instance of SLM - Manager that issues requests to and receives requests from multiple slave instances of SLM - Manager.

#### SLM - Manager (Slave)

In the master/slave configuration, an instance of SLM - Manager that receives requests from and returns results to the master instance of SLM - Manager.

#### SLM - UR

A program that runs on each switch, collecting HTTP packets of the requests and responses exchanged through the switch between the users of a service and the server that provides the service.

The collected results are sent to SLM - Manager.

#### JP1/Base

A program that is a prerequisite for SLM - Manager. JP1/Base provides event service functionality, and can manage the start order of services as well as send and receive JP1 events.

It is also used as an authentication server in SLM.

#### JP1 event

Information used in JP1 to manage events that occur in the system.

JP1 events use the following attributes to record events:

#### **Basic** attributes

All JP1 events have basic attributes.

For example, when attribute names are specified, B.ID (or just ID) is specified for the event ID.

#### Extended attributes

A program that issues JP1 events can specify any desired extended attributes. The extended attributes consist of the following common information and program-specific information:

• Common information (extended attribute information whose format is standardized according to the JP1 event)

• Program-specific information (information other than the common information whose format is specific to a program)

For example, when attribute names are specified, E.SEVERITY (or just SEVERITY) is specified for the severity.

The JP1 events are managed by the event service of JP1/Base. Events that occur in the system are recorded in the database as JP1 events.

#### JP1/IM

A program that consists of JP1/IM - Manager and JP1/IM - View.

JP1/IM - Manager is used to achieve integrated management of systems by providing for centralized monitoring and operation of the entire system.

JP1/IM - View provides the viewer function for enabling integrated management of systems in JP1/IM.

#### JP1 permission level

The representation of the types of operations a JP1 user is permitted to perform on management objects (resources). Operations are set depending on the type of management object (resource), such as job, jobnet, or event. The access permissions of JP1 users are managed in a format that combines several types of management objects (resources) and their associated operations.

SLM applies two JP1 permission levels, JP1\_ITSLM\_Admin (service group administrator) and JP1 ITSLM User (service user).

#### JP1 user

A designation for one who uses SLM. The JP1 user is registered on the authentication server, which manages the user's access permissions to a remote host. The JP1 user name might differ from the user account registered in the OS.

# logical host

In a cluster system, the logical server for purposes of failover. A logical host consists of three elements: services, a shared disk, and a logical IP address. In the case of SLM, the services are the Windows services that comprise SLM.

# Master/slave configuration

A system configuration that performs monitoring by using SLM – Manager across multiple devices.

#### monitoring agent

A service in PFM - Agent or PFM - RM for collecting the system performance of hosts and middleware.

# monitoring item

An item that is monitored in SLM for the purpose of maintaining service levels. In the case of service performance monitoring, the monitoring items are average response time, throughput, and error rate. In the case of system performance monitoring, it is the information collected by monitoring agents. In the case of availability monitoring, it is the information collected by PFM - Agent for Service Response.

Note that Performance Management must be linked in order to carry out system performance and availability monitoring.

# out-of-range value detection

A monitoring method that detects indications of problems when the performance of a monitored service differs substantially from the usual service performance.

#### PDCA cycle

An approach to facilitating management of operations, employing four stages: Plan, Do, Check, and Act.

#### performance data

The data that used in SLM monitoring, consisting of the following:

• Service performance data collected by SLM - UR

- System performance data collected by monitoring agents (when linked to Performance Management)
- Availability information data collected by PFM Agent for Service Response (when linked to Performance Management)

#### PFM - Agent

One of the program products comprising Performance Management. PFM - Agent is a monitoring agent that is placed on the same host as a monitored target in order to monitor the performance information of systems such as hosts or middleware.

PFM - Agent has the following functions:

- Monitoring of the performance of the monitored target
- · Collection and recording of data from the monitored target

Within PFM - Agent there are program products targeted at the application, database, or OS to be monitored.

#### PFM - Agent for Service Response

One of the program products comprising Performance Management. PFM - Agent for Service Response is a program that is installed on a host that is to be monitored; it monitors the availability information of monitored services.

#### PFM - Base

One of the program products comprising Performance Management. PFM - Base provides the core functions for achieving operation monitoring by Performance Management. PFM - Base is required in order to run PFM - Agent and PFM - RM.

#### PFM - Manager

One of the program products comprising Performance Management. PFM - Manager manages the Performance Management program products.

PFM - Manager receives requests from SLM - Manager, and then sends configuration information collected by the monitoring agent or PFM - Agent for Service Response to SLM - Manager.

#### PFM - RM

One of the program products comprising Performance Management. The PFM - RM program is a monitoring agent that is installed on hosts other than the host being monitored in order to carry out remote monitoring of performance information on systems such as hosts and middleware.

PFM - RM provides the following functions:

- Monitoring of the performance of the monitored target
- Collection and recording of data from the monitored target

Within PFM - RM there are program products targeted at the application, database, or OS to be monitored.

#### PFM - Web Console

One of the program products comprising Performance Management. PFM - Web Console provides capabilities for centralized monitoring of the Performance Management system in a Web browser.

#### RD area

A data storage area for a database. When the SLM setup process is run at the time of installation, RD areas are created in folders specified by an absolute path. In SLM, RD areas are used to provide data management while SLM is operating.

#### record

A format for storing data about system performance (performance data) collected by the monitoring agent when linked to Performance Management. The record type varies according to each database constituting the Store database.

#### sensitivity

A setting that determines the ease of detection by out-of-range value detection. The higher the sensitivity, the more likely detection becomes. The sensitivity is set in the Settings window.

service

A part of a business system.

service group

A unit for managing monitored targets for customers (for example, companies) that have outsourced their business systems. A service group is equivalent to a JP1 resource group in JP1/Base.

#### service group administrator

A user whose JP1 permission level is set to JP1\_ITSLM\_Admin.

A service group administrator can view service group information and information on monitored services within the service group, and is also able to set information in a monitored service.

#### service performance

Service performance refers to data resulting from monitoring average response time, throughput, and error rate, which are monitoring items.

#### service performance monitoring

A monitoring method for determining whether the performance of a monitored service has exceeded the values set for out-of-range value detection and SLO monitoring.

#### service user

A user whose JP1 permission level is set to  $\texttt{JP1\_ITSLM}\_\texttt{User}$ .

A service user can view service group information as well as information about the monitored services within the service group.

#### Single-manager configuration

A system configuration that performs monitoring by using SLM – Manager on a single device.

# SLA (Service Level Agreement)

A contractual arrangement between an outsourcing company and an outsourced contractor that guarantees the quality of the service to be provided.

# SLO (Service Level Objective)

A specific evaluation metric that is set for a monitoring item in order to comply with an SLA.

#### standby server

A server running in a cluster system that is waiting to take over operations in the event of a failure of the active server.

#### standby system

A system that is started initially as a reserve server in a cluster system. Even if a standby server becomes the active server due to failover, this designation does not change.

#### system definition file

A definition file (properties file) that specifies the details of how SLM functions. Host names, port numbers, and similar information are specified in the system definition file.

#### system performance

The monitoring results collected by monitoring agents by applying monitoring items to hosts and middleware when linked to Performance Management. System performance corresponds to performance data in Performance Management.

system performance monitoring

A monitoring method for monitoring whether the performance of a system running a monitored service has exceeded the values for out-of-range value detection or SLO monitoring that were set in SLM.

#### threshold value monitoring

A monitoring method for detecting if the performance of a monitored service has exceeded a set threshold value.

#### trend monitoring

A monitoring method that calculates trends in the performance of monitored services in order to detect in advance that a service performance threshold value is likely to be exceeded if a detected trend continues.

#### URI (Uniform Resource Identifier)

An identifier that points to an information resource on the Internet. The URI indicates the location and name of the information resource.

#### Web access

A monitored target in SLM that represents a combination of requests and responses.

#### Web transaction

A monitored target in SLM that represents a collection of business operations comprising multiple requests and responses included in the monitored service. The collection of operations is determined based on the URIs of the requests and responses, as well as the query and cookie information included in the URIs.

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