

**Job Management Partner 1/Performance
Management - Agent Option for Enterprise
Applications**

Description, User's Guide and Reference

3020-3-R57(E)

■ Relevant program products

P-242C-AA97 Job Management Partner 1/Performance Management - Manager version 09-00 (for Windows Server 2003)

P-2A2C-AA97 Job Management Partner 1/Performance Management - Manager version 09-00 (for Windows Server 2008)

P-9D2C-AA92 Job Management Partner 1/Performance Management - Manager version 09-00 (for Solaris 9 (SPARC), Solaris 10 (SPARC))

P-1M2C-AA92 Job Management Partner 1/Performance Management - Manager version 09-00 (for AIX 5L V5.3, AIX V6.1)

P-9S2C-BA92 Job Management Partner 1/Performance Management - Manager version 09-00 (for Linux 5 (x86), Linux 5 Advanced Platform (x86), Linux 5 (AMD/Intel 64), Linux 5 Advanced Platform (AMD/Intel 64))

P-242C-AJ97 Job Management Partner 1/Performance Management - Base version 09-00 (for Windows Server 2003)

P-2A2C-AJ97 Job Management Partner 1/Performance Management - Base version 09-00 (for Windows Server 2008)

P-1J2C-AJ92 Job Management Partner 1/Performance Management - Base version 09-00 (for HP-UX 11i V2 (IPF), HP-UX 11i V3 (IPF))

P-9D2C-AJ92 Job Management Partner 1/Performance Management - Base version 09-00 (for Solaris 9 (SPARC), Solaris 10 (SPARC))

P-1M2C-AJ92 Job Management Partner 1/Performance Management - Base version 09-00 (for AIX 5L V5.3, AIX V6.1)

P-242C-AR97 Job Management Partner 1/Performance Management - Web Console version 09-00 (for Windows Server 2003)

P-2A2C-AR97 Job Management Partner 1/Performance Management - Web Console version 09-00 (for Windows Server 2008)

P-9S2C-AR92 Job Management Partner 1/Performance Management - Web Console version 09-00 (for Linux 5 (x86), Linux 5 Advanced Platform (x86), Linux 5 (AMD/Intel 64), Linux 5 Advanced Platform (AMD/Intel 64))

P-242C-AF97 Job Management Partner 1/Performance Management - Agent Option for Enterprise Applications version 09-00 (for Windows Server 2003)

P-2A2C-AF97 Job Management Partner 1/Performance Management - Agent Option for Enterprise Applications version 09-00 (for Windows Server 2008)

P-1J2C-AF92 Job Management Partner 1/Performance Management - Agent Option for Enterprise Applications version 09-00 (for HP-UX 11i V2 (IPF), HP-UX 11i V3 (IPF))

P-9D2C-AF92 Job Management Partner 1/Performance Management - Agent Option for Enterprise Applications version 09-00 (for Solaris 9 (SPARC), Solaris 10 (SPARC))

P-1M2C-AF92 Job Management Partner 1/Performance Management - Agent Option for Enterprise Applications version 09-00 (for AIX 5L V5.3, AIX V6.1)

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Preface

This manual describes the functionality and records of Job Management Partner 1/ Performance Management - Agent Option for Enterprise Applications. Note that in this manual, *Job Management Partner 1* is hereafter abbreviated to *JP1*.

Intended readers

This manual is intended for the following readers:

- Users who wish to learn about the features provided by JP1/Performance Management - Agent Option for Enterprise Applications and about the records it collects.
- Users who wish to design and run systems that use JP1/Performance Management to collect SAP R/3 performance data.

It is assumed that the reader is familiar with SAP R/3.

For details about how to design and run systems that use JP1/Performance Management, also see the following manuals:

- *Job Management Partner 1/Performance Management Planning and Configuration Guide* (3020-3-R31(E))
- *Job Management Partner 1/Performance Management User's Guide* (3020-3-R32(E))
- *Job Management Partner 1/Performance Management Reference* (3020-3-R33(E))

Organization of this manual

This manual is organized into the following parts. The manual applies to all operating systems (OSs). Any information unique to a particular OS is so indicated.

PART 1: *Overview*

This part provides an overview of JP1/Performance Management - Agent Option for Enterprise Applications.

PART 2: *Setup and Operation*

This part explains how to install and set up JP1/Performance Management - Agent Option for Enterprise Applications. It also explains operations in a cluster system, extraction of system log and CCMS alert information, and collection of monitor information.

PART 3: *Reference*

This part describes the monitoring template, records, commands, and messages of JP1/Performance Management - Agent Option for Enterprise Applications.

PART 4: *Troubleshooting*

This part describes the actions to be taken for errors that might occur during operation of JP1/Performance Management - Agent Option for Enterprise Applications.

Related publications

This manual is part of a related set of manuals. The manuals in the set are listed below (with the manual numbers):

Manuals associated with JP1/Performance Management:

- *Job Management Partner 1/Performance Management Planning and Configuration Guide* (3020-3-R31(E))
- *Job Management Partner 1/Performance Management User's Guide* (3020-3-R32(E))
- *Job Management Partner 1/Performance Management Reference* (3020-3-R33(E))

Manuals associated with JP1:

- *Job Management Partner 1/Software Distribution Manager Description and Administrator's Guide* (3000-3-841(E))
- *Job Management Partner 1/Software Distribution SubManager Description and Administrator's Guide* (3020-3-L42(E)), for UNIX systems
- *Job Management Partner 1/Software Distribution Administrator's Guide Volume 1* (3020-3-S81(E)), for Windows systems
- *Job Management Partner 1/Software Distribution Client Description and User's Guide* (3020-3-S85(E)), for UNIX systems

Conventions: Abbreviations

This manual uses the following abbreviations for product names:

Abbreviation	Full name or meaning
AIX	AIX 5L V5.3
	AIX V6.1
HP-UX	HP-UX 11i V2 (IPF)
	HP-UX 11i V3 (IPF)

Abbreviation			Full name or meaning
Internet Explorer			Microsoft Internet Explorer
			Windows(R) Internet Explorer(R)
IPF			Itanium(R) Processor Family
JP1/IM	JP1/IM - Manager		Job Management Partner 1/ Integrated Management - Manager
	JP1/IM - View		Job Management Partner 1/ Integrated Management - View
JP1/Software Distribution			Job Management Partner 1/ Software Distribution Client
			Job Management Partner 1/ Software Distribution Manager
			Job Management Partner 1/ Software Distribution SubManager
Linux	Linux (IPF)	Linux 5 Advanced Platform (IPF)	Red Hat Enterprise Linux(R) 5 Advanced Platform (IPF)
		Linux 5 (IPF)	Red Hat Enterprise Linux(R) 5 (IPF)
		Linux AS 4 (IPF)	Red Hat Enterprise Linux(R) AS 4 (IPF)
	Linux (x64)	Linux 5 Advanced Platform (AMD/Intel 64)	Red Hat Enterprise Linux(R) 5 Advanced Platform (AMD/Intel 64)
		Linux 5 (AMD/Intel 64)	Red Hat Enterprise Linux(R) 5 (AMD/Intel 64)
	Linux (x86)	Linux 5 Advanced Platform (x86)	Red Hat Enterprise Linux(R) 5 Advanced Platform (x86)
		Linux 5 (x86)	Red Hat Enterprise Linux(R) 5 (x86)
	MSCS		
Microsoft(R) Cluster Service			
Windows Server(R) Failover Cluster			

Abbreviation		Full name or meaning	
NNM	HP NNM	HP Network Node Manager Software version 6 or earlier	
		HP Network Node Manager Starter Edition Software version 7.5 or earlier	
Performance Management		Job Management Partner 1/ Performance Management	
PFM - Agent	PFM - Agent for Enterprise Applications		Job Management Partner 1/ Performance Management - Agent Option for Enterprise Applications
	PFM - Agent for Job Management		Job Management Partner 1/ Performance Management - Agent Option for Job Management
	PFM - Agent for Microsoft SQL Server		Job Management Partner 1/ Performance Management - Agent Option for Microsoft(R) SQL Server
	PFM - Agent for Oracle		Job Management Partner 1/ Performance Management - Agent Option for Oracle
	PFM - Agent for Platform	PFM - Agent for Platform (UNIX)	Job Management Partner 1/ Performance Management - Agent Option for Platform (for UNIX systems)
		PFM - Agent for Platform (Windows)	Job Management Partner 1/ Performance Management - Agent Option for Platform (for Windows systems)
	PFM - Agent for Service Response		Job Management Partner 1/ Performance Management - Agent Option for Service Response
	PFM - Agent for Virtual Machine		Job Management Partner 1/ Performance Management - Agent Option for Virtual Machine
PFM - Base		Job Management Partner 1/ Performance Management - Base	

Abbreviation		Full name or meaning
PFM - Manager		Job Management Partner 1/ Performance Management - Manager
PFM - RM	PFM - RM for Microsoft SQL Server	Job Management Partner 1/ Performance Management - Remote Monitor for Microsoft(R) SQL Server
	PFM - RM for Oracle	Job Management Partner 1/ Performance Management - Remote Monitor for Oracle
	PFM - RM for Platform	Job Management Partner 1/ Performance Management - Remote Monitor for Platform
PFM - Web Console		Job Management Partner 1/ Performance Management - Web Console
SAP BW		SAP Business Information Warehouse
SAP NetWeaver		SAP NetWeaver(R)
SAP R/3		SAP R/3(R)
		SAP R/3 Enterprise
Solaris	Solaris 9	Solaris 9 (SPARC)
	Solaris 10	Solaris 10 (SPARC)
Win32		Win32(R)
Windows Server 2003	Windows Server 2003 (x64) or 2003 (x64)	Microsoft(R) Windows Server(R) 2003, Enterprise x64 Edition
		Microsoft(R) Windows Server(R) 2003, Standard x64 Edition
		Microsoft(R) Windows Server(R) 2003 R2, Enterprise x64 Edition
		Microsoft(R) Windows Server(R) 2003 R2, Standard x64 Edition
	Windows Server 2003 (x86) or 2003 (x86)	Microsoft(R) Windows Server(R) 2003, Enterprise Edition

Abbreviation		Full name or meaning
		Microsoft(R) Windows Server(R) 2003, Standard Edition
		Microsoft(R) Windows Server(R) 2003 R2, Enterprise Edition
		Microsoft(R) Windows Server(R) 2003 R2, Standard Edition
Windows Server 2008	Windows Server 2008 Enterprise	Microsoft(R) Windows Server(R) 2008 Enterprise
		Microsoft(R) Windows Server(R) 2008 Enterprise without Hyper-V(TM)
	Windows Server 2008 Standard	Microsoft(R) Windows Server(R) 2008 Standard
		Microsoft(R) Windows Server(R) 2008 Standard without Hyper-V(TM)

- PFM - Manager, PFM - Agent, PFM - Base, PFM - Web Console, and PFM - RM may be referred to collectively as *Performance Management*.
- Windows Server 2003 and Windows Server 2008 may be referred to collectively as *Windows*.
- HP-UX, Solaris, and AIX may be referred to collectively as *UNIX*.

This manual also uses the following abbreviations:

Abbreviation	Full name or meaning
CCMS	Computer Center Management System
IPF	Itanium(R) Processor Family
MTE	Monitoring Tree Element
ODBC	Open Database Connectivity
RFC	Remote Function Call

Conventions: Diagrams

This manual uses the following conventions in diagrams:

● Computer



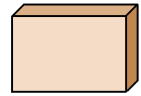
● Server



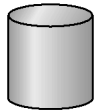
● Input/output operation



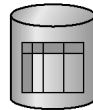
● Program



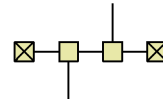
● File



● Database



● Network



● Failure



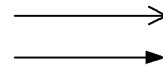
● Flow of data



● Flow of processing



● Other flow



Conventions: Fonts and symbols

Font and symbol conventions are classified as:

- General font conventions
- Conventions in syntax explanations

These conventions are described below.

General font conventions

The following table lists the general font conventions:

Font	Convention
Bold	<p>Bold type indicates text on a window, other than the window title. Such text includes menus, menu options, buttons, radio box options, or explanatory labels. For example, bold is used in sentences such as the following:</p> <ul style="list-style-type: none"> • From the File menu, choose Open. • Click the Cancel button. • In the Enter name entry box, type your name.

Font	Convention
<i>Italics</i>	Italics are used to indicate a placeholder for some actual text provided by the user or system. Italics are also used for emphasis. For example: <ul style="list-style-type: none"> Write the command as follows: <code>copy source-file target-file</code> Do <i>not</i> delete the configuration file.
Code font	A code font indicates text that the user enters without change, or text (such as messages) output by the system. For example: <ul style="list-style-type: none"> At the prompt, enter <code>dir</code>. Use the <code>send</code> command to send mail. The following message is displayed: <code>The password is incorrect.</code>

Examples of coding and messages appear as follows (although there may be some exceptions, such as when coding is included in a diagram):

```
MakeDatabase
...
StoreDatabase temp DB32
```

In examples of coding, an ellipsis (...) indicates that one or more lines of coding are not shown for purposes of brevity.

Conventions in syntax explanations

Syntax definitions appear as follows:

```
StoreDatabase [temp|perm] (database-name ...)
```

The following table lists the conventions used in syntax explanations:

Example font or symbol	Convention
<code>StoreDatabase</code>	Code-font characters must be entered exactly as shown.
<i>database-name</i>	This font style marks a placeholder that indicates where appropriate characters are to be entered in an actual command.
SD	Bold code-font characters indicate the abbreviation for a command.
<u>perm</u>	Underlined characters indicate the default value.
[]	Square brackets enclose an item or set of items whose specification is optional.
{ }	One of the items enclosed in curly brackets and separated by a vertical bar must be specified.
	Only one of the options separated by a vertical bar can be specified at the same time.

Example font or symbol	Convention
...	An ellipsis (...) indicates that the item or items enclosed in () or [] immediately preceding the ellipsis may be specified as many times as necessary.
()	Parentheses indicate the range of items to which the vertical bar () or ellipsis (...) is applicable.

Conventions: Format of product names, service IDs, and service keys in this manual

In Performance Management 09-00 or later, the service ID and service key can be displayed in the product name when the product name display functionality is enabled.

Identifier	Product name display functionality	
	Disabled	Enabled
Service ID	MSinstance name [host name]	<i>instance-name [host-name] <SAP System> (Store)</i>
	MAinstance name [host name]	<i>instance-name [host-name] <SAP System> (Store)</i>
Service key	agtm	EAP

This manual uses the format that is used when the product name display functionality is enabled.

Note that the product name display functionality can be enabled when both of the following conditions exist:

- The version of the prerequisite program (PFM - Manager or PFM - Base) on the same device as PFM-Agent is 09-00 or later.
- The versions of PFM - Web Console and the PFM - Manager to which it connects are 09-00 or later.

Conventions: Formats of commands in this manual

New-format commands have been added in Performance Management 09-00 and later versions. Because these commands are compatible with the commands of Performance Management 08-11 and earlier versions, commands in this manual are indicated as follows:

new-format-command (command-for-08-11-or-earlier)

Example:

```
jpccconf agent setup (jpcagtsetup)
```

In this example, `jpccconf agent setup` is the new-format command and `jpccagtsetup` is the command for 08-11 or earlier.

New-format commands are available when the version of the prerequisite program (PFM - Manager or PFM - Base) on the same device as PFM-Agent is 09-00 or later. Note that the commands for 08-11 or earlier are also available when the version of the prerequisite program is 09-00 or later.

Conventions: KB, MB, GB, and TB

This manual uses the following conventions:

- 1 KB (kilobyte) is 1,024 bytes.
- 1 MB (megabyte) is 1,024² bytes.
- 1 GB (gigabyte) is 1,024³ bytes.
- 1 TB (terabyte) is 1,024⁴ bytes.

Conventions for mathematical expressions

This manual uses the following symbols in mathematical expressions:

Symbol	Meaning
x	Multiplication sign
/	Division sign

Conventions: Meaning of "folder" and "directory"

In general, if a Windows folder name is the same as its counterpart UNIX directory name, it is referred to in this manual by its UNIX directory name.

Conventions: Performance Management installation folders

In this manual, the installation folders for the Windows version of Performance Management are referred to as *installation folders*.

The default installation folders for the Windows version of Performance Management are as follows:

Default installation folder for Performance Management programs other than PFM - Web Console

- For Windows OSs other than Windows Server 2003 (x64) and the 64-bit version of Windows Server 2008:

`system-drive\Program Files\Hitachi\jplpc\`

- For Windows Server 2003 (x64) and the 64-bit version of Windows Server 2008

`system-drive\Program Files(x86)\Hitachi\jplpc\`

Default installation folder for PFM - Web Console

- For Windows OSs other than Windows Server 2003 (x64) and the 64-bit version of Windows Server 2008:

`system-drive\Program Files\Hitachi\jplpcWebCon\`

- For Windows Server 2003 (x64) and the 64-bit version of Windows Server 2008

`system-drive\Program Files(x86)\Hitachi\jplpcWebCon\`

The default installation directories for the UNIX version of Performance Management are as follows:

Default installation directory for Performance Management programs other than PFM - Web Console

`/opt/jplpc/`

Default installation directory for PFM - Web Console

`/opt/jplpcwebcon/`

Conventions: Version numbers

The version numbers of Hitachi program products are usually written as two sets of two digits each, separated by a hyphen. For example:

- Version 1.00 (or 1.0) is written as 01-00.
- Version 2.05 is written as 02-05.
- Version 2.50 (or 2.5) is written as 02-50.
- Version 12.25 is written as 12-25.

The version number might be shown on the spine of a manual as *Ver. 2.00*, but the same version number would be written in the program as *02-00*.

NNM products supported by Performance Management

Performance Management supports linkage with the following products:

- HP Network Node Manager Software version 6 or earlier
- HP Network Node Manager Starter Edition Software version 7.5 or earlier

In this manual, these products are referred to as *NNM*, and the functionality that provides linkage with these products is referred to as *NNM linkage*.

Note that Performance Management does not support linkage with the following product:

- HP Network Node Manager i Software v8.10

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Chapter

1. Overview of PFM - Agent for Enterprise Applications

This chapter provides an overview of PFM - Agent for Enterprise Applications.

- 1.1 Features of PFM - Agent for Enterprise Applications
- 1.2 Overview of collecting and managing performance data
- 1.3 Examples of performance monitoring using PFM - Agent for Enterprise Applications

1.1 Features of PFM - Agent for Enterprise Applications

PFM - Agent for Enterprise Applications is a program that collects and manages performance data, enabling you to monitor the performance of an SAP system.

PFM - Agent for Enterprise Applications has the following features:

- Ability to analyze the operating status of an SAP system

PFM - Agent for Enterprise Applications enables you to easily analyze the operating status of an SAP system by collecting and summarizing performance data (such as statistical information about response time and work process usage) obtained from the SAP system being monitored, and graphically displaying any trends or changes.

- Ability to detect the operational problems of an SAP system and quickly provide the information needed to identify the cause of a problem

In the event of a problem in performance, such as a delay in the response time on the SAP system being monitored, PFM - Agent for Enterprise Applications helps the user become aware of the problem at an early stage by sending a notification, such as an email, to the user. PFM - Agent for Enterprise Applications also provides a graphic display of information needed to identify the cause of a problem.

You must have PFM - Manager and PFM - View in order to use PFM - Agent for Enterprise Applications.

The following sub-sections describe PFM - Agent for Enterprise Applications.

1.1.1 Collect SAP system performance data

PFM - Agent for Enterprise Applications enables you to collect performance data, such as statistical information on the current SAP system's background service on the host being monitored.

With PFM - Agent for Enterprise Applications, you use the collected performance data as follows:

- Graphically displaying the SAP system's operating status

By using PFM - View, you can process and display performance data in a graphical format called a *report*. A report facilitates analysis of the SAP system's operating status.

There are two types of reports:

- *Real-time reports*

A real-time report indicates the current status of an SAP system being

monitored. It is used primarily to check the current status of the system and to detect problems in the system. To display real-time reports, PFM - Agent for Enterprise Applications uses current performance data that has just been collected.

- *Historical reports*

A historical report indicates the status of a monitored SAP system from a time in the past to the present. Its principal use is for analyzing trends in the system. To display a historical report, the system uses performance data that has been stored in a database for PFM - Agent for Enterprise Applications.

- Using the collected data as criteria for determining whether a problem has occurred

You can set PFM - Agent for Enterprise Applications to take some action (such as notifying the user) if collected performance data indicates an abnormality.

1.1.2 Collect performance data according to its characteristics

PFM - Agent for Enterprise Applications collects performance data in *records*. Each record consists of smaller units called *fields*. Records and fields are referred to collectively as the *data model*.

Records are classified into two types according to their characteristics. The record types that are used to collect performance data are predefined in PFM - Agent for Enterprise Applications. The user simply uses PFM - View to specify the performance data records to be collected.

PFM - Agent for Enterprise Applications supports the following two record types:

- Product Interval record type (referred to hereafter as the *PI record type*)

For records of the PI record type, the system collects performance data for a specified interval, such as the number of processes in one minute. You can use these records to analyze changes or trends in the system status over time.

- Product Detail record type (referred to hereafter as the *PD record type*)

For records of the PD record type, the system collects performance data that indicates the system status at a specific point in time, such as detailed information about the currently active processes. You can use these records to obtain the system status at a particular time.

For more information about record types, see *9. Records*.

1.1.3 Save performance data

By storing collected performance data into a special database, you can save the performance data up to the current date, and can analyze trends (from the past to the current date) in the SAP system's operating states. This special database is called the

Store database of PFM - Agent for Enterprise Applications.

Use PFM - Web Console to select the performance data records to be stored in the Store database. For details about how to select records with PFM - Web Console, see the chapter that describes management of operation monitoring data in the *Job Management Partner 1/Performance Management User's Guide*.

1.1.4 Notify about problems in SAP system operations

You use performance data collected by PFM - Agent for Enterprise Applications not only for displaying SAP system performance as reports but also for warning the user in the event of a problem or error during SAP system operation.

Suppose that the user is to be notified by email whenever the available system resources fall below 10%. To achieve this, you set "available system resources are less than 10%" as the abnormal condition threshold, and you set the system to send an email to the user when this threshold is reached. What the system is to do when the threshold is reached is called an *action*. The following types of actions are available:

- Sending an email
- Executing a command
- Issuing an SNMP trap
- Issuing a JPI event

The definition of a threshold or action is called an *alarm*. A table of the defined alarms is called an *alarm table*. Once an alarm table is defined, it is associated with PFM - Agent for Enterprise Applications. Associating an alarm table with PFM - Agent for Enterprise Applications is called *binding*. Once an alarm table has been bound to PFM - Agent for Enterprise Applications, whenever the performance data collected by PFM - Agent for Enterprise Applications reaches the threshold defined as an alarm, the event is reported to the user.

By defining alarms and actions, you can detect problems in the SAP system operation at an early stage and take appropriate actions.

For details about how to set alarms and actions, see the chapter that describes operation monitoring by alarms in the *Job Management Partner 1/Performance Management User's Guide*.

1.1.5 Easily define alarms and reports

PFM - Agent for Enterprise Applications provides a *monitoring template*, in which necessary information for standard reports and alarms is predefined. This monitoring template facilitates setup for monitoring the SAP system's operating status, because it does not require you to make complicated definitions. You can also customize the monitoring template as appropriate to your environment. For details about how to use the monitoring template, see the chapter that describes report creation for operation

analysis or the chapter that describes operation monitoring by alarms in the *Job Management Partner 1/Performance Management User's Guide*. For details about the monitoring template, see 8. *Monitoring Template*.

1.1.6 Extract the SAP system's log information and CCMS alert information

PFM - Agent for Enterprise Applications can output periodically to text files the following information about the SAP system:

- *System log information*

This is a log (system log) for recording the events and errors that occur in the SAP system. A system log is created for each application server.

- *CCMS alert information*

These are the warnings (alert information) that occur in the warning monitor of the computer center management system (CCMS) in the SAP system.

You can use a log file trapping function, such as the one provided by JP1/Base, to convert the information in a text file to JP1 events. By monitoring these JP1 events from JP1/IM-Console or NNM, you can monitor the SAP system's operating status from JP1/IM-Console or NNM.

For details about how to extract system log information for an SAP system, see 5. *Extracting System Log Information*. For details about how to extract CCMS alert information, see 6. *Extracting CCMS Alert Information*.

1.1.7 Collect the SAP system's monitor information

PFM - Agent for Enterprise Applications can collect the SAP system's monitor information based on user definitions. This makes it possible to collect performance information that is not provided as records by PFM - Agent for Enterprise Applications. Note that PFM - Agent for Enterprise Applications can collect only the monitor information for the SAP system that has the performance attribute.

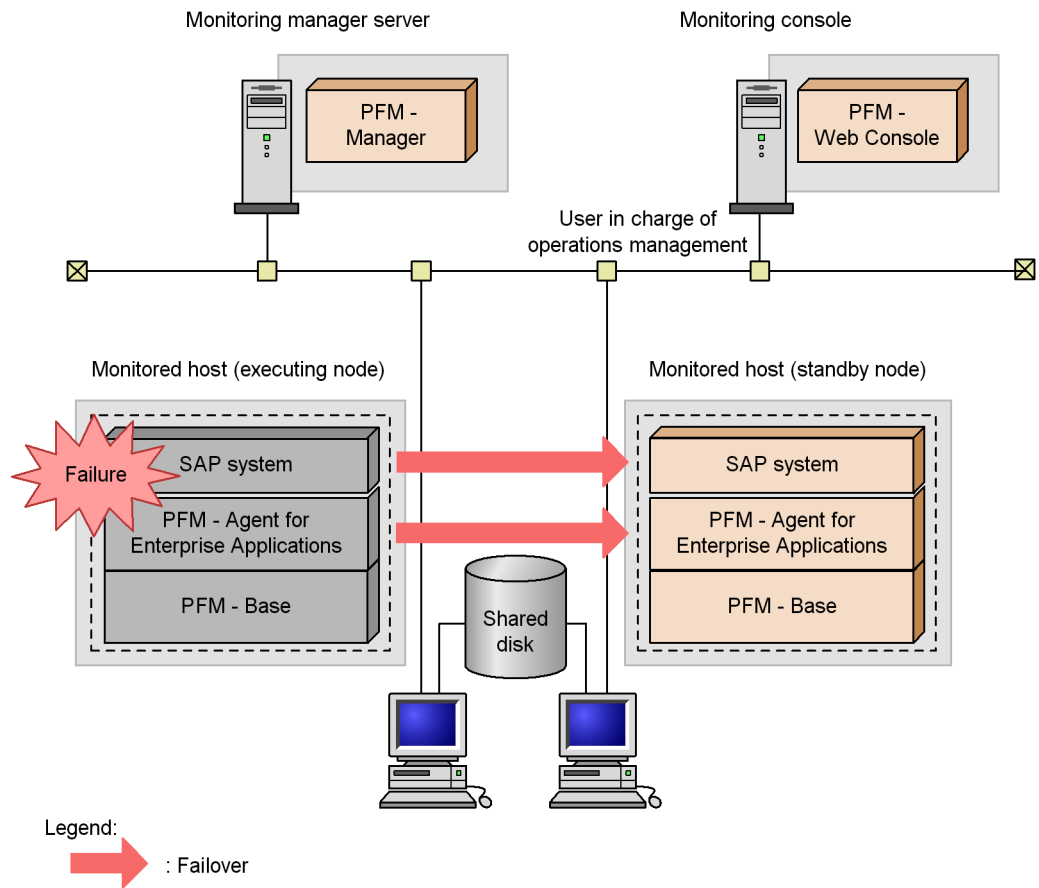
For details about collecting the SAP system's monitor information, see 7. *Collecting Monitor Information*.

1.1.8 Operation in a cluster system

Use of a cluster system creates a highly reliable system that can continue jobs even in the event of a system failure, thereby achieving 24-hour Performance Management operation and monitoring.

The following figure shows an example of operation in the event of a failure on the PFM - Agent host in a cluster system.

Figure 1-1: Example of operation in a cluster system



Two environments with the same settings are created. The environment that is normally used for operations is defined as the *executing node*, and the other environment, which is used in the event of a failure, is defined as the *standby node*. For details about Performance Management operation in a cluster system, see 4. *Operation in a Cluster System*.

1.2 Overview of collecting and managing performance data

The procedures for collecting and managing performance data depend on the record type used to store the performance data. The records for PFM - Agent for Enterprise Applications are classified into the following two types:

- PI record type
- PD record type

For details about how to collect and manage performance data, see the following sections:

■ Performance data collection procedure

For details about how to collect performance data, see the chapter that describes the Performance Management functions in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

For details about the values of the collected performance data, see *9. Records*.

■ Performance data management procedure

For details about the performance data management procedure, see the chapter that describes management of operation monitoring data in the *Job Management Partner 1/Performance Management User's Guide*.

You use PFM - Web Console to select from the records collected and managed by PFM - Agent the performance data that is to be used. For details about how to select performance data, see the chapter that describes management of operation monitoring data in the *Job Management Partner 1/Performance Management User's Guide*.

1.3 Examples of performance monitoring using PFM - Agent for Enterprise Applications

Performance monitoring is an important element in configuring and managing an SAP system environment. This section describes the purposes of using PFM - Agent for Enterprise Applications to monitor performance and presents examples of performance monitoring.

1.3.1 Purposes of performance monitoring

Use of PFM - Agent for Enterprise Applications for performance monitoring enables you to change and adjust the SAP system configuration. It also provides useful information for planning for future upgrades of system resources.

Following are the principal purposes for which you use performance monitoring:

- For analyzing performance data in the SAP system and identifying the causes of bottlenecks
- For analyzing performance data trends in the SAP system and for obtaining the characteristics of loads and their effects on the system resources
- For monitoring the SAP system to ensure that it is running normally

By continuously monitoring system performance, you can obtain the characteristics of loads in the SAP system environment and their effects on the system resources.

Performance monitoring is imperative in order to ensure stable operation of the SAP system. You can check the operation status of the SAP system by performing the following types of monitoring:

- Monitoring the SAP system's response times
- Monitoring SAP buffers
- Monitoring the SAP memory
- Monitoring system log information
- Monitoring CCMS alert information

Problems detected by PFM - Agent for Enterprise Applications can help you in performing further investigations and analyses using the SAP-provided operations management tool *CCMS*.

1.3.2 Selecting a baseline

Selection of a baseline involves examining performance measurement results and determining baseline values that, together, can be assumed to provide for a level of system operation that is free of problems.

The JP1/PFM products monitor system operations using the baseline values as threshold values. Therefore, selecting a baseline is an important task prior to performing performance monitoring.

We recommend that you obtain baseline measurements at the following times in order to maintain an appropriate baseline:

- When system operation is at peak status, such as when you test heavy loading on the operating environment, obtain measurements of the system's performance.
- Whenever you make changes in the system resources or operating environment, take baseline measurements again because the baseline depends significantly on the system configuration.

1.3.3 Examples of performance monitoring

(1) SAP system's response times

These examples monitor the SAP system's response times in order to check trends in performance throughout the entire SAP system.

(a) Records and fields related to response times

The following table lists and describes the records and fields that are related to response times.

Table 1-1: Records and fields related to response times

Record to be used	Field to be used	How to interpret the value (example)
PI or PI_DIA	ResponseTime	Average dialog step processing time
	DBRequestTime	Average time required to process a logical database request
	QueueTime	Average wait time in the dispatcher queue

(b) How to monitor

Monitoring the dialog response time

To monitor the dialog response time in the SAP system, you can use the `DialogResponseTime` alarm that is provided as a monitoring template.

If `ResponseTime` is equal to or greater than the threshold value, performance of the entire SAP system might have become degraded. Determine the bottleneck by monitoring the load status of the entire SAP system and the database request time.

Monitoring the load status in the entire SAP system

To monitor the load status in the entire SAP system, you can use the `DialogResponseTime` report (field name: `QueueTime`) that is provided as a monitoring template.

If the value of QueueTime is high (exceeds 10% of the value of ResponseTime), the workload in the entire SAP system might have become elevated.

Monitoring the database request time

To monitor the database request time, you can use the Dialog ResponseTime report that is provided as a monitoring template.

If the value of DBRequestTime is high (exceeds 40% of the value of ResponseTime - QueueTime), a problem might have occurred in buffering at the application server, in optimization of SQL statements (ABAP), or in the database server.

(2) Monitoring SAP buffers

These examples monitor the SAP buffers in order to ensure that the SAP system is operating efficiently.

By using the SAP buffers efficiently, you can reduce the response times for applications that are executed frequently, such as repetitive jobs.

(a) Records and fields related to the SAP buffers

The following table lists and describes the records and fields that are related to the SAP buffers.

Table 1-2: Records and fields related to the SAP buffers

Record to be used	Field to be used	How to interpret the value (example)
PI or PI_BUFF	Program HitRatio %	Percentage of queries that did not need to access the database because the program was in the program buffer (buffer hit rate)
	CUA HitRatio %	Percentage of queries that did not need to access the database because the menu information was in the CUA buffer (buffer hit rate)
	GenericKey HitRatio %	Percentage of queries that did not need to access the database because the table data (multiple records) was in the generic key buffer (buffer hit rate)
	SingleRecord HitRatio %	Percentage of queries that did not need to access the database because the table data (1 record) was in the single record buffer (buffer hit rate)
PI_BUFF	Program Swap	Buffer-full swap count in the program buffer per minute. We recommend setting a value of 0 to this field.

Record to be used	Field to be used	How to interpret the value (example)
	CUA Swap	Buffer-full swap count in the CUA buffer per minute. We recommend setting a value of 0 to this field.
	GenericKey Swap	Buffer-full swap count in the generic key buffer per minute. We recommend setting a value of 0 to this field.
	SingleRecord Swap	Buffer-full swap count in the single record buffer per minute. We recommend setting a value of 0 to this field.

(b) How to monitor

Monitoring the program buffer

You can monitor the program buffer hit rate and swap count.

To monitor the program buffer hit rate, you can use the `SAP Buffer Hitratio` report (field name: `program HitRatio %`) that is provided as a monitoring template. If this value is low (less than 80%), the number of user requests (other than for repetitive jobs) might have increased.

To monitor the program buffer swap count, you can use the `SAP Buffer Hitratio` report (field name: `Program Swap`) that is provided as a monitoring template. If this value is greater than 0, the size of the program buffer might be too small.

Monitoring the buffer for menu information

You can monitor the buffer hit rate and swap count for menu information.

To monitor the buffer hit rate for menu information, you can use the `SAP Buffer Hitratio` report (field name: `CUA HitRatio %`) that is provided as a monitoring template. If this value is low (less than 80%), the volume of menu operations (other than for repetitive jobs) might have increased.

To monitor the swap count for menu information, you can use the `SAP Buffer Hitratio` report (field name: `CUA Swap`) that is provided as a monitoring template. If this value is greater than 0, the CUA buffer might be too small.

Monitoring the buffer for table data

You can monitor the buffer hit rate and swap count for table data.

To monitor the buffer hit rate for table data, you can use the `SAP Buffer Hitratio` report (field name: `GenericKey HitRatio %`) and the `SAP Buffer Hitratio` report (field name: `SingleRecord HitRatio %`) that are provided as

monitoring templates. If this value is low (less than 80%), the generic key and single record buffers might be too small or there might be a problem in the table allocation method for the generic key buffer.

To monitor the buffer hit rate for table data, you can use the `SAP Buffer Hitratio` report (field name: GenericKey Swap) and the `SAP Buffer Hitratio` report (field name: SingleRecord Swap) that are provided as monitoring templates. If this value is greater than 0, the generic key and single record buffers might be too small.

(3) Monitoring the SAP memory

This example monitors the SAP memory specific to an SAP system in order to check trends in performance degradation in the entire SAP system due to insufficient SAP memory area.

(a) Records and fields related to the SAP memory

The following table lists and describes the records and fields that are related to the SAP memory.

Table 1-3: Records and fields related to the SAP memory

Record to be used	Field to be used	How to interpret the value (example)
PI or PI_MEM	EsAct %	Current expansion memory use rate
	HeapAct %	Current heap area use rate
	PrivWpNo	Number of work processes placed in the PRIV mode
	R3PagingUsed %	Paging area use rate
	R3RollUsed %	Roll area use rate

(b) How to monitor

Monitoring the expansion memory use rate in the SAP memory

To monitor the expansion memory use rate in the SAP memory, you can use the `Extended Memory` alarm that is provided as a monitoring template.

If an `Extended Memory` warning is issued, the extended memory area might be insufficient.

Monitoring the heap area use rate in the SAP memory

To monitor the heap area use rate in the SAP memory, you can use the `Heap Memory` alarm that is provided as a monitoring template.

If a `Heap Memory` warning is issued, the heap area might be insufficient or a dialog work process might have resulted in a short dump.

Monitoring the paging area use rate in the SAP memory

To monitor the paging area use rate in the SAP memory, you can use the `Paging Area` alarm that is provided as a monitoring template.

In the event of a `Paging Area` warning, the paging area might be insufficient.

Monitoring the roll area use rate in the SAP memory

To monitor the roll area use rate in the SAP memory, you can use the `Roll Area` alarm that is provided as a monitoring template.

In the event of a `Roll Area` warning, the roll area might be insufficient or a dialog work process might have been placed in the `PRIV` mode.

To check the number of work processes that are in the `PRIV` mode, you can use the `SAP Memory Detail` drilldown report (field name: `PrivWpNo`) that is provided as a monitoring template. If this value is 1 or greater, a dispatcher wait time might have increased.

(4) Monitoring SAP system logs and CCMS alerts

The SAP system outputs to the system log the events that have occurred and error information.

The SAP system is equipped with a Computer Center Management System (CCMS) that analyzes system operations management and loads.

PFM - Agent for Enterprise Applications can periodically output to a text file the system logs and alerts (alert information) that have occurred in CCMS's warning monitor.

You can use information in this text file to monitor the status of the SAP system by linking to another program (such as the log trapping function of `JP1/Base`).

(a) How to monitor

Monitoring system logs

The system log information extraction function enables you to periodically output to a text file the system log information that is specific to the events and failures that have occurred in the SAP system.

This function outputs the following information:

- Time the message was recorded
- Server that recorded the message
- User that recorded the message
- Program that recorded the message
- Message number

1. Overview of PFM - Agent for Enterprise Applications

- Message

For details, see *5. Extracting System Log Information*.

Monitoring CCMS alert information

The CCMS alert information extraction function enables you to periodically output to a text file the warning events (alert information) that occur in CCMS's Alert Monitor.

This function outputs the following information:

- Alert ID
- ID of the MTE associated with the alert
- Severity of the alert
- General property
- Message

For details, see *6. Extracting CCMS Alert Information*.

Chapter

2. Installation and Setup (In Windows)

This chapter describes the procedures for installing and setting up PFM - Agent for Enterprise Applications in Windows.

- 2.1 Installation and setup
- 2.2 Uninstallation and unsetup
- 2.3 Changing the PFM - Agent for Enterprise Applications system configuration
- 2.4 Changing the PFM - Agent for Enterprise Applications operation method
- 2.5 Starting the command prompt
- 2.6 Backup and restoration
- 2.7 Settings for using a Web browser to reference manuals

2.1 Installation and setup

This section explains the procedures for installing and setting up PFM - Agent for Enterprise Applications.

2.1.1 Before installation and setup

This section describes the items to be checked before installing and setting up PFM - Agent for Enterprise Applications.

(1) *Supported OSs*

PFM - Agent for Enterprise Applications can run on the following operating systems (OSs):

- Windows Server 2003
- Windows Server 2008

(2) *Network environment setup*

This subsection describes the network environment needed for Performance Management operation.

(a) **Setting IP addresses**

You must set up the environment for a PFM - Agent host in such a manner that IP addresses can be determined from the host name. PFM - Agent can run only in an environment in which IP addresses can be resolved.

For the monitoring host name (name used as the host name of the Performance Management system), you can use the real host name or an alias name.

- When the real host name is used as the monitoring host name:
In a Windows system, set the environment in such a manner that the IP address can be resolved by the host name that is obtained by the `hostname` command.
- When an alias name is used as the monitoring host name:
Set the environment in such a manner that the IP address can be resolved by this alias name.

For details about the monitoring host name setting, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

To set host names and IP addresses, use one of the following methods:

- Performance Management's host information file (`jpchosts` file)

- `hosts` file
- Domain Name System (DNS)

Notes

- Performance Management can be run in a DNS environment, but it does not support fully qualified domain names (FQDNs). When you specify a monitoring host name, do not include the domain name.
- If you use Performance Management in multiple LAN environments, use the `jpchosts` file to set IP addresses. For details, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.
- Performance Management does not run on a host where dynamic IP addresses are assigned by DHCP. Set fixed IP addresses for all hosts on which Performance Management is to be installed.

(b) Setting port numbers

The port numbers listed in the table below are assigned by default to the Performance Management program services. An available port number is assigned automatically to any other service or program each time such a service is started. You must use fixed port numbers when Performance Management is used in a firewall environment. For details about how to fix port numbers, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

Table 2-1: Default port numbers used by the Performance Management program services (for Windows)

Service description	Service name	Parameter	Port number	Remarks
Service configuration information management function	Name Server	<code>jp1pcnsvr</code>	22285	Port number used by PFM - Manager's Name Server service. This port number is set at all hosts of Performance Management.
OpenView linkage facility	NNM Object Manager	<code>jp1pcovsvr</code>	22292	Port number used for communication between map manager and object manager when the OpenView linkage facility is used with PFM - Manager and PFM - Base. This port number is set at the host where PFM - Manager and PFM - Base are installed.

2. Installation and Setup (In Windows)

Service description	Service name	Parameter	Port number	Remarks
Service status management function	Status Server	jplpcstatsvr	22350	Port number used by the Status Server service of PFM - Manager and PFM - Base. This port number is set at the host where PFM - Manager and PFM - Base are installed.

You should set up your network in such a manner that communication can be established with the port numbers used by these Performance Management program services.

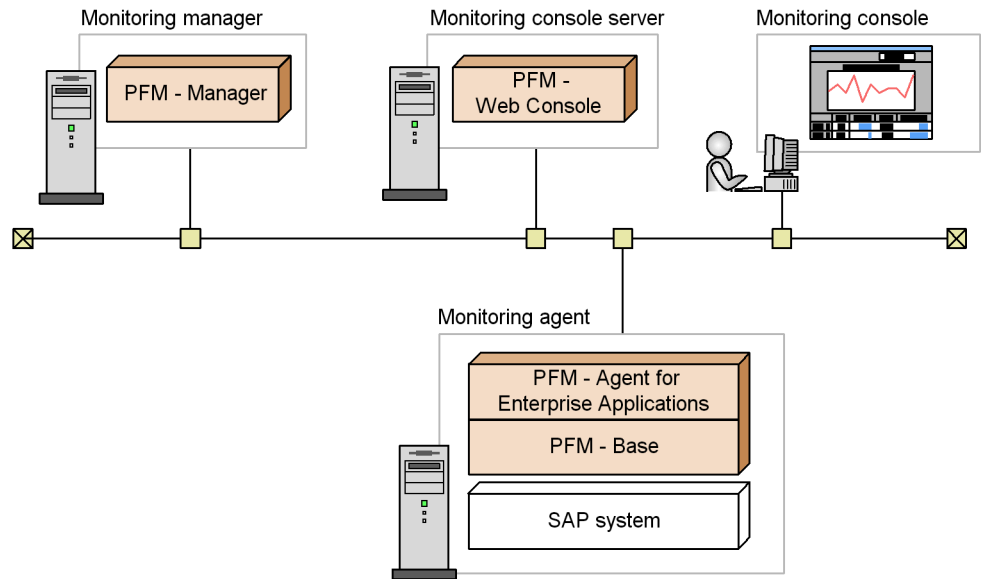
(3) OS user permission required for installation

Make sure that you are using an account that has the Administrators permission when you install PFM - Agent for Enterprise Applications.

(4) Required programs

This subsection describes the programs that are required to install PFM - Agent for Enterprise Applications. The following shows the configuration of the programs.

Figure 2-1: Program configuration



Legend:

- : Program provided by Performance Management
- : Required program

(a) Programs that can be monitored

PFM - Agent for Enterprise Applications can monitor the following programs:

- SAP R/3 Enterprise
- SAP Business Information Warehouse
- SAP NetWeaver

For these programs to be monitored, they must be installed on the same host as PFM - Agent for Enterprise Applications.

(b) Performance Management programs

PFM - Agent and PFM - Base must be installed on the monitoring agent. PFM - Base is a prerequisite program for PFM - Agent. You need only one PFM - Base even when multiple PFM - Agents are installed on the same host.

Note that if you install PFM - Manager and PFM - Agent on the same host, PFM - Base is not required.

PFM - Manager and PFM - Web Console are required in order to use PFM - Agent for

Enterprise Applications to monitor SAP system operation.

(5) Installing and setting up in a cluster system

The required network environment and program configuration are different for a cluster system than for a normal non-cluster system. In a cluster system, installation and setup are required at both the executing and the standby nodes. For details, see *4. Operation in a Cluster System*.

(6) Notes

This subsection provides notes about installing and setting up Performance Management.

(a) Notes about environment variables

Performance Management uses the `JPC_HOSTNAME` environment variable. Do not set a user-specific `JPC_HOSTNAME` environment variable. If such an environment variable is set, Performance Management will not function correctly.

(b) Installing and setting up multiple Performance Management programs on the same host

Performance Management enables you to install PFM - Manager, PFM - Web Console, and PFM - Agent on the same host. This subsection provides notes about such an installation.

- If you install PFM - Manager and PFM - Agent on the same host, there is no need to install PFM - Base. In this case, PFM - Agent requires PFM - Manager; therefore, install PFM - Manager first, and then install PFM - Agent.
- PFM - Base and PFM - Manager cannot be installed on the same host. To install PFM - Manager on a host where PFM - Base and PFM - Agent are already installed, uninstall all Performance Management programs (other than PFM - Web Console), and then install PFM - Manager and PFM - Agent in this order. Similarly, to install PFM - Base on a host where PFM - Manager and PFM - Agent are already installed, uninstall all Performance Management programs (other than PFM - Web Console), and then install PFM - Base and PFM - Agent in this order.
- If you install PFM - Agent on a host where PFM - Manager is already installed, the PFM - Manager on the local host becomes the connection-target PFM - Manager. In such a case, you can no longer change the connection-target PFM - Manager to a PFM - Manager on a remote host. Therefore, if you want to connect to a PFM - Manager on a remote host, make sure that PFM - Manager has not been installed already on the target host.
- If a PFM - Agent already exists on the host where PFM - Manager is being installed, the local host is redesignated as the connection-target PFM - Manager for that PFM - Agent. The resulting settings are output to the common message log file; check the results.

- If PFM - Web Console already exists on a host where PFM - Agent is to be installed, close all browser windows before starting installation.
- When a new Performance Management program is installed, the default is that the status management function is enabled. However, if you upgrade from version 07-00 to 08-00 or later, the settings for the status management function disabled. To change the status management function settings, see the chapter that describes Performance Management failure detection in the *Job Management Partner 1/Performance Management User's Guide*.

Tip

To improve system performance and reliability, we recommend that you run PFM - Manager, PFM - Web Console, and PFM - Agent on separate hosts.

(c) Upgrading

This subsection provides notes about upgrading a PFM - Agent.

For details about upgrading, see *H. Migration Steps and Notes on Migration*.

- When you install a Performance Management program, make sure that all Performance Management program services are stopped at the local host. This includes all services on both physical and logical hosts. For details about how to stop services, see the chapter that describes startup and termination of Performance Management in the *Job Management Partner 1/Performance Management User's Guide*.
- If a Performance Management program already exists on the host where a PFM - Agent is to be installed, the PFM - Agent's installation path becomes the same as for the existing Performance Management programs (other than PFM - Web Console). To change the installation path, you must delete all the Performance Management programs that have been installed (other than PFM - Web Console) and then re-install them.
- PFM - Base and PFM - Manager cannot be installed on the same host. To install PFM - Manager on a host where PFM - Base and a PFM - Agent have been installed already, uninstall all Performance Management programs (other than PFM - Web Console), and then install PFM - Manager and PFM - Agent in this order. Similarly, to install PFM - Base on a host where PFM - Manager and a PFM - Agent have been installed already, uninstall all Performance Management programs (other than PFM - Web Console), and then install PFM - Base and PFM - Agent in this order.
- For a Performance Management program of version 08-00 or later, the locations of the Store execution programs (`jpcsto.exe` and `stpqlpr.exe`) have been changed. The old Store execution modules are deleted when PFM - Agent is upgraded to version 08-00 or later.
- During an upgrade installation, the disk space required for the Store database is

temporarily doubled because the existing Store database is upgraded automatically. Before you start the upgrade installation, make sure that there is enough space on the disk where the Store database is located.

- If you are upgrading your OS to Windows Server 2008, you must first uninstall the Performance Management products for Windows Server 2003, because their operation on Windows Server 2008 is not guaranteed. Before you start the upgrade procedure, uninstall all Performance Management products, upgrade the OS, and then install Performance Management products that support Windows Server 2008.

(d) Other notes

- If you are installing PFM - Agent for Enterprise Applications in an environment in which no Performance Management program has been installed, make sure that there are no files or folders in the installation-target folder.
- If you attempt to install PFM - Agent for Enterprise Applications while Performance Management programs and services are running or while other programs that reference Performance Management files (such as Windows Event Viewer) are running, a message prompting for a system restart might be displayed. If this occurs, restart the system according to the message and complete the installation.
- If you attempt to install PFM - Agent for Enterprise Applications while Performance Management programs and services are running or while other programs that reference Performance Management files (such as Windows Event Viewer) are running, file expansion might fail if there is not enough disk space or if you do not have directory permission. In such a case, terminate all such programs and then re-install PFM - Agent for Enterprise Applications. If there is not enough disk space or you do not have directory permission, resolve the problem and then re-install PFM - Agent for Enterprise Applications.
- Before you install Performance Management programs, check to see if any security-related programs, such as those described below, are installed. If such a program is installed, take appropriate action according to the information provided below.
 - Security monitoring program
Terminate the security monitoring program or change its settings so that installation of the Performance Management programs will not be affected.
 - Virus detection program
We recommend that you terminate any virus detection program before you install the Performance Management programs.
If a virus detection program is running during installation of a Performance Management program, it might slow down the installation process, the

installation might fail, or the program might not install correctly.

- Process monitoring program

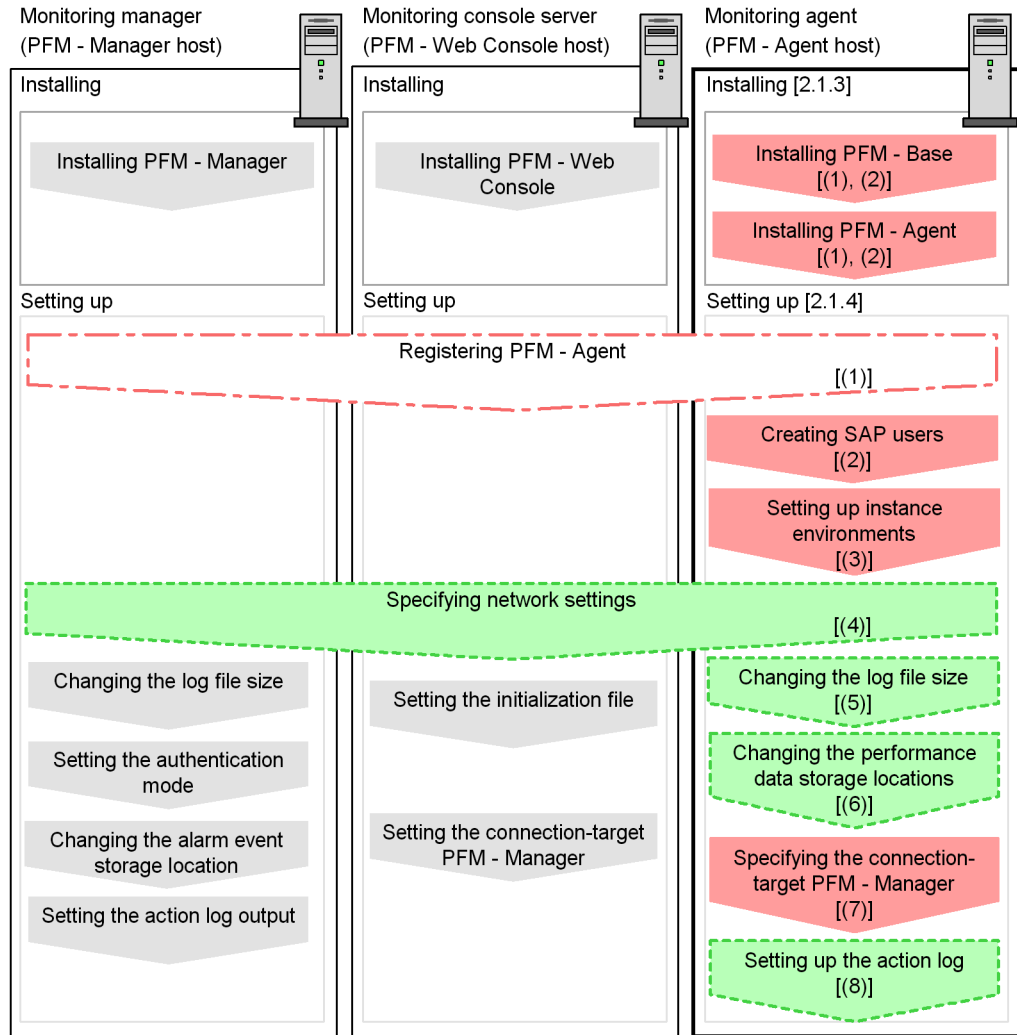
Terminate the process monitoring program or change its settings so that it does not monitor the services and processes of Performance Management or the services and processes of common components.

- Installation of a Performance Management program might fail if any of these services or processes is started or stopped by the process monitoring program during the installation process.

2.1.2 Flow of tasks for installation and setup

This subsection describes the flow of tasks for installing and setting up PFM - Agent for Enterprise Applications.

Figure 2-2: Flow of tasks for installation and setup



- Legend:
- : Required setup item
 - : Setup item that might be required
 - : Optional setup item
 - : Item described in the *System Configuration and User's Guide*
 - [] : Section to reference

For details about how to install and set up PFM - Manager and PFM - Web Console,

see the chapter that describes installation and setup in the *Job Management Partner 1/ Performance Management Planning and Configuration Guide*.

2.1.3 Installation procedure

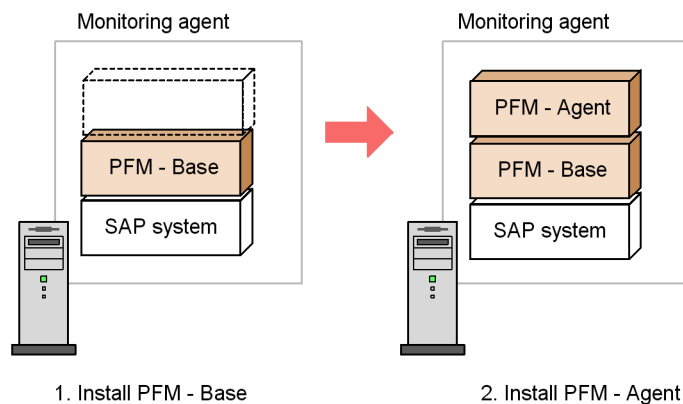
This subsection describes the program installation order for PFM - Agent for Enterprise Applications and how to install the program from the provided CD-ROM.

(1) Program installation order

You must install PFM - Base before you install a PFM - Agent. PFM - Agent cannot be installed on a host where PFM - Base has not been installed.

To install PFM - Agent and PFM - Manager on the same host, install PFM - Manager first and then PFM - Agent. If you are upgrading the Store database from version 1.0 to 2.0, the setup method depends on the order in which PFM - Agent and PFM - Manager or PFM - Base are installed. For details about how to set up Store version 2.0, see *2.4.2 Updating the Store version to 2.0*.

Multiple PFM - Agents installed on the same host can be installed in any order.



(2) How to install the program

There are two ways to install the Performance Management program on a Windows host. One uses the provided CD-ROM, and the other uses JP1/Software Distribution for remote installation. For details about the method that uses JP1/Software Distribution, see the *Job Management Partner 1/Software Distribution Administrator's Guide Volume 1*.

Notes common to all OSs

If Performance Management programs and services are already running on the host where the program is to be installed, you must first stop all the active programs and services, including all services on both physical and logical hosts. For details about stopping services, see the chapter that describes starting and

stopping services in the *Job Management Partner 1/Performance Management User's Guide*.

Notes about installing in a Windows Server 2008 environment

If the OS's user account control (UAC) function is enabled, a user account control dialog box might be displayed during installation. If such a dialog box is displayed, click the **Continue** button to continue installation. If you click the **Cancel** button, installation will be canceled.

To install from the provided CD-ROM:

1. At the host where PFM - Agent for Enterprise Applications is to be installed, log on as a user with Administrators permission.
2. Stop all running Performance Management programs and services.

If any Performance Management programs and services are running, stop all of them.

3. Insert the CD-ROM.

Install the program by entering required information, as requested in the installer's instructions.

You must define the following information during installation:

- User information

Enter user information, such as your user name.

- Installation folder

Specify the folder in which you wish to install the Performance Management program.

The installation folder is created when you choose the **OK** button after specifying the required information in the Select Directory dialog box. If you create the wrong folder by mistake, delete it after installation.

- Program folder

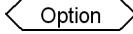
In Windows Server 2003, specify the program menu name that is to be registered in the **All Programs** menu, which can be opened by choosing **Start**.

Reference

You can specify the installation folder for a Performance Management program (except for PFM - Web Console) only when you install the program for the first time. During subsequent installations, the program is installed or registered in the folder specified during the first installation.

2.1.4 PFM - Agent for Enterprise Applications setup procedure

This subsection describes the setup that is required before you can use PFM - Agent for Enterprise Applications.

 indicates a setup item whose requirement depends on the environment being used or an optional setup item when you wish to change a default setting.

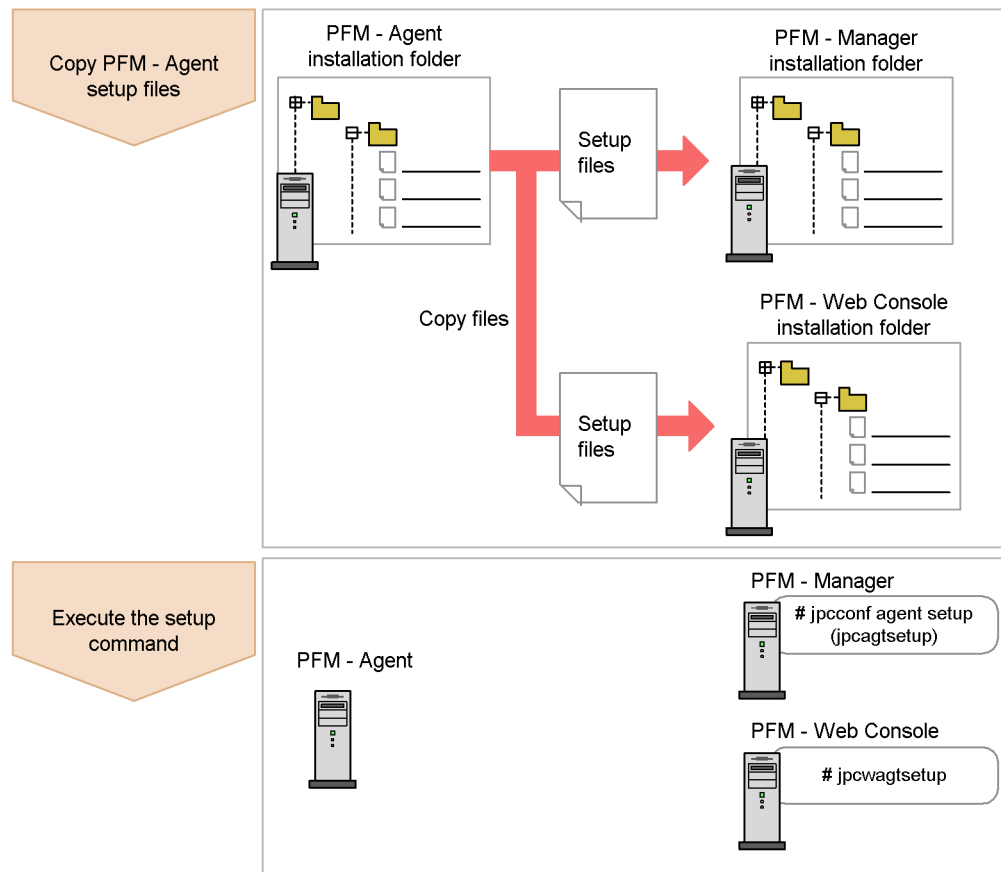
(1) **Registering PFM - Agent for Enterprise Applications**

To use PFM - Manager and PFM - Web Console for centralized management of PFM - Agents, PFM - Agent for Enterprise Applications must be registered into PFM - Manager and PFM - Web Console.

If the version of PFM - Manager is 09-00 or later, PFM - Agent is registered automatically, in which case there is no need to perform the procedure described here. However, any data model version of PFM - Agent that is not included in the Release Notes for PFM - Manager must be registered manually. For details about the data model version of PFM - Agent for Enterprise Applications, see *I. Version Compatibility*.

The following shows the procedure for registering a PFM - Agent.

Figure 2-3: Procedure for registering a PFM - Agent



Notes

- Register PFM - Agent before you set up instance environments.
- If you are adding the same version of PFM - Agent for Enterprise Applications to a Performance Management system in which information about PFM - Agent for Enterprise Applications has already been registered, there is no need to register the PFM - Agents.
- If you install a different version of PFM - Agent for Enterprise Applications on a separate host, set up the old version first and then the new version.
- If you have installed PFM - Agent on the same host as PFM - Manager, the `jpcconf agent setup (jpcagtsetup)` command executes automatically and the message `KAVE05908-I New agent setup`

(*Pfm-Agent-service-key*) ended successfully. (*version=version*) is output to the common message log. Check the result; if the command did not execute correctly, re-execute it. For details about executing commands, see the chapter that describes commands in the manual *Job Management Partner 1/Performance Management Reference*.

(a) Copying the setup files for PFM - Agent for Enterprise Applications

Copy the setup files from the host where PFM - Agent for Enterprise Applications was installed to the host where PFM - Manager and PFM - Web Console were installed.

To copy the setup files:

1. Stop PFM - Web Console if it is running.
2. Copy the PFM - Agent setup files in the binary mode.

The table below shows the source and target locations of the files to be copied.

Table 2-2: Setup files to be copied

PFM - Agent setup file	Source		
	PFM program name	OS	Target folder or directory
<i>installation-folder\setup\jpcagt_{mw}.EXE</i>	PFM - Manager	Windows	<i>PFM-Manager-installation-folder\setup</i>
<i>installation-folder\setup\jpcagt_{mu}.Z</i>		UNIX	<i>/opt/jp1pc/setup/</i>
<i>installation-folder\setup\jpcagt_{mw}.EXE</i>	PFM - Web Console	Windows	<i>PFM-Web-Console-installation-folder\setup</i>
<i>installation-folder\setup\jpcagt_{mu}.Z</i>		UNIX	<i>/opt/jp1pcwebcon/setup/</i>

(b) Executing the setup command at the PFM - Manager host

To use PFM - Manager to set up PFM - Agent for Enterprise Applications, execute the following command:

```
jpccconf agent setup -key EAP (jpcagtsetup agtm)
```

Note

An error might occur if the `jpccconf agent setup (jpcagtsetup)` command is executed at a local host where Performance Management programs and services have not stopped completely. If an error occurs, check that all Performance Management programs and services have stopped completely and then re-execute the `jpccconf agent setup (jpcagtsetup)` command.

After completing this step, you can delete the PFM - Agent setup files from the PFM - Manager host.

(c) Executing the setup command at the PFM - Web Console host

To use PFM - Web Console to set up PFM - Agent for Enterprise Applications, execute the following command:

```
jpcwagtsetup
```

After completing this step, you can delete the PFM - Agent setup files from the PFM - Web Console host.

(2) Creating SAP users that are to be used by PFM - Agent for Enterprise Applications

To collect performance information, PFM - Agent for Enterprise Applications uses RFC (communication protocol of SAP AG) to execute the external management interfaces defined in the SAP system. Therefore, you must prepare in advance the SAP system users who are to be used by PFM - Agent for Enterprise Applications.

This subsection describes the user types, passwords, and authorizations for the SAP users who are created in the SAP system.

(a) User types

The following types of SAP users can be used by PFM - Agent for Enterprise Applications:

- Dialog
- System
- Communication
- Service

(b) Characters permitted for passwords

Define passwords for the SAP users. A password can consist of single-byte numeric characters (from 0 to 9), single-byte alphabetic characters (from a to z, A to Z), and the following single-byte symbols:

!, @, \$, %, &, /, (,), =, ?, ', `*, +, ~, #, -, _., :, {, [,], }, <, >, |

(c) Required authorizations

You must set the following authorizations (authorization objects) for the users:

- Authorizations required for a user to establish RFC connection with function modules (S_RFC)
- Authorizations required in order to use external management interfaces

(S_XMI_PROD)

For the value of each authorization, assign a value shown in the tables below or use the built-in configurations (S_RFC_ALL and S_XMI_ADMIN) that specify an asterisk (*) for all items.

Table 2-3: Authorizations required for a user to establish RFC connection with function modules (S_RFC)

Authorization	Description	Value
RFC_TYPE	Type of RFC object to be protected	FUGR (function group)
RFC_NAME	RFC name to be protected	*
ACTVT	Activity	16 (execution)

Table 2-4: Authorizations required in order to use external management interfaces (S_XMI_PROD)

Authorization	Description	Value
EXTCOMPANY	Company name of the external management tool	HITACHI
EXTPRODUCT	Program name of the external management tool	JP1
INTERFACE	Interface ID	*

(3) Setting up instance environments

You must set instance information for each SAP system that is to be monitored by PFM - Agent for Enterprise Applications. You perform the instance information setting at the PFM - Agent host.

The table below lists and describes the instance information items that are to be specified. Check this information before you start the setup procedure. For details about the instance information for an SAP system, see the SAP system documentation.

Table 2-5: Instance information for PFM - Agent for Enterprise Applications

Item	Description	Permitted value	Default value
SID	ID of the SAP system that is to be monitored	Character string (up to 8 bytes)	--
SERVER	SAP instance name that is to be monitored (the SAP instance name that has a dialog service, and which can be verified by transaction code SM51)	Character string (up to 20 bytes)	Instance name specified in <code>-inst</code> in the <code>jpccconf inst setup</code> (<code>jpccinssetup</code>) command

2. Installation and Setup (In Windows)

Item	Description	Permitted value	Default value
ASHOST	Host name of the connection-target application server (the SAP local host, which can be verified by transaction code SM51)	Character string (up to 100 bytes)	Local host name
SYSNR	System number of the SAP system	Numeric characters (up to 2 bytes)	00
CLIENT	Client name to which the SAP user belongs (system number assigned to the connection-target dialog instance)	Numeric characters (up to 3 bytes)	000
USER	SAP user name	Character string (up to 12 bytes)	--
EXTPWD	Whether to use an extended password to connect to the SAP system	Y or N <ul style="list-style-type: none"> Y: Use an extended password. N: Do not use an extended password. 	N
PASSWD	Password of the SAP user	When an extended password is used: 1 to 40 single-byte characters When an extended password is not used: 1 to 8 single-byte characters	--
DELAYCONNECT	Timing of the connection to the SAP system	Y or N <ul style="list-style-type: none"> Y: Connect to the SAP system only when performance data is collected. The Agent Collector service is started regardless of the operating status of the SAP system at the time of connection establishment. N: Connect to the SAP system when the Agent Collector service starts. The Agent Collector service is not started if the SAP system is not active at the time of connection establishment. 	N
Store version [#]	Store version to be used. For details about the Store version, see <i>2.4.2 Updating the Store version to 2.0.</i>	{1.0 2.0}	2.0

Legend:

--: None

#

This setting is required when the version of PFM - Agent for Enterprise Applications is 09-00 or later, and the version of PFM - Base or PFM - Manager on the same host is 08-11 or later, and you are setting up an instance environment for the first time.

Note

- If no instance environment has been set up, the PFM - Agent for Enterprise Applications service cannot be started.

You use the `jpccconf inst setup (jpcinssetup)` command to construct an instance environment.

To construct an instance environment:

1. Execute the `jpccconf inst setup (jpcinssetup)` command with the service key and instance name specified.

For example, to construct an instance environment for the instance named `o246bci_SD5_00` for PFM - Agent for Enterprise Applications, execute the following command:

```
jpccconf inst setup -key EAP (jpcinssetup agtm) -inst
o246bci_SD5_00
```

Although you can use any instance name in PFM - Agent for Enterprise Applications, to simplify management we recommend that you use an instance name that identifies the SAP system that is to be monitored. Normally, a name in the format *host-name_SAP-system-ID_system-number* is assigned to an instance for an SAP system.

2. Specify instance information for the SAP system.

Enter the information shown in Table 2-5, in accordance with the command's instructions. You cannot omit any requested items. To use a displayed value (which is the default) press the **Enter** key.

Once you have entered all items, the instance environment is constructed. The following describes constructed instance environments:

- Organization of folders for instance environments

Instance environments are configured in the following folders:

- For physical host operation: *installation-folder*\agtm
- For logical host operation: *environment-directory*[#]\jp1pc\agtm

#

The environment directory is located on the shared disk that was specified when the logical host was created.

The following table shows the organization of the folders for instance environments.

Table 2-6: Organization of folders for instance environments

Folder and file names		Description	
agent	<i>instance-name</i>	jpcagt.ini	Agent Collector service startup initialization file
		jpcagt.ini.model#	Model file for the Agent Collector service startup initialization file
		jr3alget.ini	Environment parameters file for CCMS Alert Monitor Command (PD_ALMX) records
		jr3slget.ini	Environment parameters file for System Log Monitor Command (PD_SLMX) records
		log	Storage folder for log files
store	<i>instance-name</i>	jpcsto.ini	Startup-information file of the Agent Store service
		jpcsto.ini.model#	Model file for the startup-information file of the Agent Store service
		*.DAT	Data model definition file
		dump	Export folder
		backup	Backup folder
		import	Import folder (for Store version 2.0)
		log	Storage folder for log files
		partial	Partial backup folder (for Store version 2.0)
		STPD	Performance data storage folder for the PD record type (for Store version 2.0)
		STPI	Performance data storage folder for the PI record type (for Store version 2.0)
STPL	Performance data storage folder for the PL record type (for Store version 2.0)		

#

You can use this file to restore the settings that were in effect before the instance environment was constructed.

■ Service ID for an instance environment

The service ID for an instance environment is a character string that consists of a product ID, function ID, instance number, instance name, and host name. For example, service ID MA1o246bci_SD5_00 [host01] represents the following instance environment:

- Product ID: M
- Function ID: A
- Instance number: 1
- Instance name: o246bci_SD5_00
- Host name: host1

For details about the service ID, see the appendix in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

■ Windows service name for an instance environment

The following are the Windows service names for instance environments:

- Agent Collector service: PFM - Agent for R/3 *instance-name*
- Agent Collector service for logical host operation: PFM - Agent for R/3 *instance-name* [*logical-host-name*]
- Agent Store service: PFM - Agent Store for R/3 *instance-name*
- Agent Store service for logical host operation: PFM - Agent Store for R/3 *instance-name* [*logical-host-name*]

For details about the Windows service names, see the appendix in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

(4) Specifying network settings 

You must specify network settings only when you change the network configuration where Performance Management is used.

You can set the following two network settings items:

■ IP addresses

Set this information to use Performance Management in a network that is connected to multiple LANs. To set multiple IP addresses, define the host names

and IP addresses in the `jpchosts` file. Make sure that the settings in the `jpchosts` file are consistent throughout the entire Performance Management system.

For details, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

■ Port numbers

You can set the port numbers used by Performance Management. To avoid confusion during operation, make sure that the specified port numbers and service names are consistent throughout the entire Performance Management system.

For details about setting port numbers, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

(5) Changing the log file size Option

Performance Management's operating status is output to a log file unique to Performance Management. This log is called the *common message log*, which consists of two files with a default size of 2,048 kilobytes each. This setting is required only when you wish to change this file size.

For details, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

(6) Changing the performance data storage locations Option

These settings are required only when you wish to change the storage location, backup folder, export folder, partial backup folder, or import folder for the database that stores the performance data managed by PFM - Agent for Enterprise Applications.

The default storage locations for the performance data are as follows:

Storage location	Folder name
Database	<code>installation-folder\agtm\store\instance-name\</code>
Database (for logical host operation)	<code>environment-directory#\jp1pc\agtm\store\instance-name\</code>
Backup	<code>installation-folder\agtm\store\instance-name\backup\</code>
Backup (for logical host operation)	<code>environment-directory#\jp1pc\agtm\store\instance-name\backup\</code>
Export	<code>installation-folder\agtm\store\instance-name\dump\</code>
Export (for logical host operation)	<code>environment-directory#\jp1pc\agtm\store\instance-name\dump\</code>

Storage location	Folder name
Partial backup (for Store version 2.0)	<i>installation-folder</i> \agtm\store\ <i>instance-name</i> \partial\
Partial backup (for logical host operation with Store version 2.0)	<i>environment-directory</i> #\jplpc\agtm\store\ <i>instance-name</i> \partial\
Import (for Store version 2.0)	<i>installation-folder</i> \agtm\store\ <i>instance-name</i> \import\
Import (for logical host operation with Store version 2.0)	<i>environment-directory</i> #\jplpc\agtm\store\ <i>instance-name</i> \import\

#

The environment directory is located on the shared disk that was specified when the logical host was created.

For details, see *2.4.1 Changing the performance data storage location*.

(7) Specifying the connection-target PFM - Manager for PFM - Agent for Enterprise Applications

On the host where a PFM - Agent is installed, you must specify the PFM - Manager that manages that PFM - Agent. You use the `jpccconf mgrhost define (jpcnshostname)` command to set the connection-target PFM - Manager.

Notes

- There can be only one PFM - Manager as the connection destination even when multiple PFM - Agents are installed on the same host. Different PFM - Managers cannot be specified for the various PFM - Agents.
- If a PFM - Agent and PFM - Manager are installed on the same host, that PFM - Manager on the local host is automatically the connection-target PFM - Manager; you cannot change the connection-target PFM - Manager to some other PFM - Manager.

To specify the connection-target PFM - Manager:

1. Stop all Performance Management programs and services.

Before you start the setup procedure, you must terminate all Performance Management programs and services that are running on the local host. For details about stopping services, see the chapter that describes starting and stopping services in the *Job Management Partner 1/Performance Management User's Guide*.

If a Performance Management program or service remains active during execution of the `jpccconf mgrhost define (jpcnshostname)` command, a message is displayed that asks you to terminate the program.

2. Installation and Setup (In Windows)

2. Execute the `jpccconf mgrhost define (jpcnshostname)` command with the host name of the connection-target PFM - Manager specified.

For example, if the connection-target PFM - Manager is on host `host01`, specify the command as follows:

```
jpccconf mgrhost define (jpcnshostname) -s host01
```

(8) Setting up the action log

You can log information in the action log when, for example, PFM services start and stop, and the status of the connection to PFM - Manager changes. The action log stores history information that is output in conjunction with the alarms for thresholds related to system load and other conditions.

For details about how to set up the action log, see *J. Outputting Action Log Data*.

2.2 Uninstallation and unsetup

This section describes the procedures for uninstalling PFM - Agent for Enterprise Applications and for canceling its setup.

2.2.1 Before uninstallation and unsetup

This section provides notes about uninstalling PFM - Agent for Enterprise Applications and canceling its setup.

(1) OS user permission required for uninstallation

When you uninstall PFM - Agent, make sure that you use an account that has the Administrators permission.

(2) Network

Uninstalling a Performance Management program does not delete port numbers defined in the `services` file.

(3) Programs

- If you uninstall PFM - Agent for Enterprise Applications while Performance Management programs and services or other programs that reference Performance Management files (such as Windows Event Viewer) are running, some files and folders might remain in the system. In such a case, manually delete all files and folders under the installation folder.
- If you attempt to uninstall PFM - Agent for Enterprise Applications while Performance Management programs and services or other programs that reference Performance Management files (such as Windows Event Viewer) are running, a message prompting system restart might be displayed. If this occurs, restart the system to complete the uninstallation procedure.
- If PFM - Base and PFM - Agent are both installed on the host, PFM - Base cannot be uninstalled unless you first uninstall PFM - Agent; uninstall PFM - Agent, and then uninstall PFM - Base. Similarly, if PFM - Manager and PFM - Agent are both installed on the same host, PFM - Manager cannot be uninstalled unless you first uninstall PFM - Agent; uninstall PFM - Agent, and then uninstall PFM - Manager.

(4) Services

- Uninstalling PFM - Agent might not delete the service information that is displayed by the `jpctool service list (jpcctrl list)` command. For details about how to delete the service information, see the section on deleting services in the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

(5) Other

- If you uninstall a Performance Management program from a host on which PFM - Web Console has been installed, close all windows on the browser before starting the uninstallation procedure.

2.2.2 Unsetup procedure

This subsection describes how to cancel the setup of PFM - Agent for Enterprise Applications.

(1) Canceling setup of an instance environment

To cancel setup of an instance environment, first verify the instance name and then delete the instance environment. You cancel an instance environment at the PFM - Agent host.

Use the `jpcconf inst list (jpcinslist)` command to verify the instance name, then use the `jpcconf inst unsetup (jpcinsunsetup)` command to delete the existing instance environment.

To cancel setup of an instance environment:

1. Find the instance name.

Execute the `jpcconf inst list (jpcinslist)` command with the service key of PFM - Agent for Enterprise Applications specified.

```
jpcconf inst list -key EAP (jpcinslist agtm)
```

If the current instance name is `o246bci_SD5_00`, the command displays `o246bci_SD5_00`.

2. If a PFM - Agent service is running in the instance environment, stop the service.

For details about stopping services, see the chapter that describes starting and stopping services in the *Job Management Partner 1/Performance Management User's Guide*.

3. Delete the instance environment.

Execute the `jpcconf inst unsetup (jpcinsunsetup)` command with the service key and instance name of PFM - Agent for Enterprise Applications specified.

If the existing instance name is `o246bci_SD5_00`, enter the following command:

```
jpcconf inst unsetup -key EAP (jpcinsunsetup agtm) -inst o246bci_SD5_00
```

If the `jpccconf inst unsetup (jpcinsunsetup)` command is successful, the folders, service ID, and Windows services created as the instance environment are deleted.

Note

Canceling an instance environment might not delete the service information that is displayed by the `jpctool service list (jpcctrl list)` command. For details about how to delete the service information, see the section on deleting services in the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

2.2.3 Uninstallation procedure

To uninstall PFM - Agent for Enterprise Applications:

1. At the host where PFM - Agent for Enterprise Applications is to be uninstalled, log on as a user with Administrators permission.
2. Stop all Performance Management programs and services at the local host.

Display the service information to make sure that no service is running. For details about stopping services and displaying service information, see the chapter that describes startup and termination of Performance Management in the *Job Management Partner 1/Performance Management User's Guide*.

Stop all Performance Management programs and services that are running at the local host; this includes all services on both physical and logical hosts.

3. Select the Performance Management program to be uninstalled.

In Windows Server 2003, from the Windows **Control Panel**, choose **Add/Remove Programs**, and then select the Performance Management program to be uninstalled.

4. Select **Remove** and then choose the **OK** button.

The selected program is uninstalled.

5. Double-click the selected program and then click the **Yes** button (applicable to Windows Server 2008).

The selected program is uninstalled.

When the UAC pop-up is displayed, select **Allow** and continue the uninstallation process.

Notes about uninstalling in a Windows Server 2008 environment

If the OS's user account control (UAC) function is enabled, a user account control dialog box might be displayed during uninstallation. If this dialog box is

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displayed and you click the **Cancel** button, uninstallation will be canceled. If you wish to continue the uninstallation process, click the **Continue** button.

2.3 Changing the PFM - Agent for Enterprise Applications system configuration

You must change the system configuration for PFM - Agent for Enterprise Applications whenever a change occurs in the system, such as a change in a monitored system's network configuration or a change in host names. This subsection describes how to change the system configuration for PFM - Agent for Enterprise Applications.

When a host name is changed, information about the host name of the SAP system running at that server is also changed. The setting subject to change is as follows:

- ASHOST

For details about how to change settings, see *2.4.3 Settings for updating an instance environment*. If a change is made to any other setting in the connection-target SAP system, also update the instance environment.

When you change the system configuration for PFM - Agent for Enterprise Applications, you must also change the settings for PFM - Manager and PFM - Web Console. For details about how to change the system configuration for Performance Management, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

2.4 Changing the PFM - Agent for Enterprise Applications operation method

It might be necessary to change the operating method for PFM - Agent for Enterprise Applications for a reason such as a change in the method of handling the collected operation monitoring data. This section describes how to change the operating method for PFM - Agent for Enterprise Applications. For details about how to change the operating method for the overall Performance Management system, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

2.4.1 Changing the performance data storage location

The performance data collected by PFM - Agent for Enterprise Applications is managed in the Store database of the Agent Store service of PFM - Agent for Enterprise Applications. This subsection describes how to change the storage location of performance data.

(1) Using the `jpccconf db define (jpcdbctrl config)` command to change settings

To change the data storage folders listed below for the performance data that is to be managed in the Store database, use the `jpccconf db define (jpcdbctrl config)` command. If you wish to save the performance data already in the Store database storage folder prior to the change, use the `-move` option of the `jpccconf db define (jpcdbctrl config)` command. For details about the `jpccconf db define (jpcdbctrl config)` command, see the manual *Job Management Partner 1/Performance Management Reference*.

- Storage folder
- Backup folder
- Export folder
- Partial backup folder[#]
- Import folder[#]

[#]: Supported only when Store version 2.0 is used.

The following table lists and describes the information that can be set by the `jpccconf db define (jpcdbctrl config)` command, such as option names and value ranges.

Table 2-7: Command settings for changing the performance data storage location

Description	Option name	Permitted value (Store version 1.0)	Permitted value (Store version 2.0)	Default value
Performance data creation folder	sd	1 to 127 bytes of full path name	1 to 214 bytes of full path name ^{#1}	<i>installation-folder\agtm\store\instance-name</i>
Performance data creation folder (for logical host operation)	sd	1 to 127 bytes of full path name	1 to 214 bytes of full path name ^{#1}	<i>environment-directory^{#2}\jplpc\agtm\store\instance-name</i>
Performance data backup folder (full backup)	bd	1 to 127 bytes of full path name	1 to 211 bytes of full path name ^{#3}	<i>installation-folder\agtm\store\instance-name\backup</i>
Performance data backup folder (full backup during logical host operation)	bd	1 to 127 bytes of full path name	1 to 211 bytes of full path name ^{#3}	<i>environment-directory^{#2}\jplpc\agtm\store\instance-name\backup</i>
Performance data backup folder (partial backup)	pbd	--	1 to 214 bytes of full path name ^{#1}	<i>installation-folder\agtm\store\instance-name\partial</i>
Performance data backup folder (partial backup during logical host operation)	pbd	--	1 to 214 bytes of full path name ^{#1}	<i>environment-directory^{#2}\jplpc\agtm\store\instance-name\partial</i>
Maximum generation number when performance data is backed up	bs	1 to 9	1 to 9	5
Performance data export folder	dd	1 to 127 bytes of full path name	1 to 127 bytes of full path name	<i>installation-folder\agtm\store\instance-name\dump</i>
Performance data export folder (for logical host operation)	dd	1 to 127 bytes of full path name	1 to 127 bytes of full path name	<i>environment-directory^{#2}\jplpc\agtm\store\instance-name\dump</i>
Performance data import folder	id	--	1 to 222 bytes of full path name ^{#4}	<i>installation-folder\agtm\store\instance-name\import</i>

Description	Option name	Permitted value (Store version 1.0)	Permitted value (Store version 2.0)	Default value
Performance data import folder (for logical host operation)	id	--	1 to 222 bytes of full path name ^{#4}	<i>environment-directory</i> ^{#2} \jplpc\agtm\store\ <i>instance-name</i> \import

Legend:

--: Cannot be set

#1

If a relative path is set, the length of the specified folder path (absolute path) must not exceed 214 bytes.

#2

The environment directory is located on the shared disk that was specified when the logical host was created.

#3

If a relative path is set, the length of the specified folder path (absolute path) must not exceed 211 bytes.

#4

If a relative path is set, the length of the specified folder path (absolute path) must not exceed 222 bytes.

(2) Editing the *jpcsto.ini* file to change settings (for Store version 1.0 only)

If you are using Store version 1.0, you can directly edit *jpcsto.ini*.

(a) Settings in the *jpcsto.ini* file

The table below shows the settings in the *jpcsto.ini* file, such as the label names that can be edited and the permitted value ranges.

Table 2-8: Settings for the performance data storage location ([Data Section] section in *jpcsto.ini*)

Description	Label name	Permitted value(Store version 1.0) ^{#1}	Default value
Performance data creation folder	Store Dir ^{#2}	1 to 127 bytes of full path name	<i>installation-folder</i> \agtm\store\ <i>instance-name</i>

Description	Label name	Permitted value(Store version 1.0)#1	Default value
Performance data creation folder (for logical host operation)	Store Dir#2	1 to 127 bytes of full path name	<i>environment-directory</i> ^{#3} \jplpc\agtm\store\ <i>instance-name</i>
Performance data backup folder (full backup)	Backup Dir#2	1 to 127 bytes of full path name	<i>installation-folder</i> \agtm\store\ <i>instance-name</i> \backup
Performance data backup folder (full backup during logical host operation)	Backup Dir#2	1 to 127 bytes of full path name	<i>environment-directory</i> ^{#3} \jplpc\agtm\store\ <i>instance-name</i> \backup
Maximum generation number when performance data is backed up	Backup Save	1 to 9	5
Performance data export folder	Dump Dir#2	1 to 127 bytes of full path name	<i>installation-folder</i> \agtm\store\ <i>instance-name</i> \dump
Performance data export folder (for logical host operation)	Dump Dir#2	1 to 127 bytes of full path name	<i>environment-directory</i> ^{#3} \jplpc\agtm\store\ <i>instance-name</i> \dump

#1

- Specify all folder names as full path names.
- All alphanumeric characters, symbols, and the space are permitted, except for the following characters:

*i, , *, ?, ', ", <, >, |*

- If a specified value is invalid, the Agent Store service cannot be started.

#2

No duplication of folder names can be specified in Store Dir, Backup Dir, and Dump Dir.

#3

The environment directory is located on the shared disk that was specified when

the logical host was created.

(b) Preparations before editing the `jpcsto.ini` file

- In order to change the Store database storage folder, you must first create the storage folder that is to be used.
- Once you have changed the Store database storage folder, the performance data that was collected previously is no longer available. If you need the previous performance data, the following procedure can be used to inherit it:
 1. Use the `jpctool db backup (jpcctrl backup)` command to make a backup of the performance data that is stored in the existing Store database.
 2. Change the Store database storage folder according to the procedure described in 2.4.1(2)(c) *Editing the `jpcsto.ini` file*.
 3. Use the `jpctool db restore (jpcresto)` command to restore the backup data into the new folder.

(c) Editing the `jpcsto.ini` file

To edit the `jpcsto.ini` file:

1. Stop the PFM - Agent services.
If PFM - Agent programs and services are running at the local host, stop all of them.
2. Use a program such as a text editor to open the `jpcsto.ini` file.
3. Make necessary changes (e.g., change the performance data storage folder).
Correct the shaded information shown below, as necessary.

```
      :  
[Data Section]  
Store Dir=  
Backup Dir=.\backup  
Backup Save=5  
Dump Dir=.\dump
```

Notes

- Do not enter any space characters at the beginning of a line or before or after an equal sign (=).
- A period (.) in a label value indicates the default storage folder for the Agent

Store service's Store database

(*installation-folder\agtm\store\instance-name*). To change the storage folder, specify a path relative to this folder or the absolute path.

- The `jpcsto.ini` file contains not only the database storage folder but also definition information. Make sure that you do not change any values other than in the [Data Section] section. If a value outside the [Data Section] section is changed, Performance Management might not function normally.
4. Save the `jpcsto.ini` file and then close it.
 5. Start the Performance Management programs and services.

Note

If you have used this procedure to change the Store database storage folder, the previous performance data still remains in the old folder. If you do not need these files, delete only the following files:

- All files whose extension is `.DB`
- All files whose extension is `.IDX`

2.4.2 Updating the Store version to 2.0

The two types of Store database storage formats are versions 1.0 and 2.0. For details about Store version 2.0, see the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

Store version 2.0 is used by default only when you have configured a new instance in an environment of PFM - Base or PFM - Manager version 08-11 or later using PFM - Agent for Enterprise Applications version 09-00 or later. Otherwise, the Store version 1.0 format is used, and you will have to use the setup command to update the Store version to 2.0.

If you need to restore Store version 1.0 for some reason, cancel the setup of Store version 2.0.

The following table shows whether Store version 2.0 is supported, depending on the installation conditions, and describes the operating procedure.

Table 2-9: Whether Store version 2.0 is supported and the operating procedure

Installation condition		Whether Store version 2.0 is supported	Store version 2.0 operating procedure
Version of the installed PFM - Base or PFM - Manager	PFM - Agent installation method		
08-00 or earlier	Overwrite installation	Not supported	Upgrade PFM - Base or PFM - Manager to version 08-11 and then execute the setup command.
	New installation		
08-11 or later	Overwrite installation	An existing instance is supported after setup	Execute the setup command.
		A new instance is supported	Use the <code>jpcconf inst setup (jpcinssetup)</code> command to set up when the instance is configured.
	New installation	Supported	Use the <code>jpcconf inst setup (jpcinssetup)</code> command to set up when the instance is configured.

(1) Setting up Store version 2.0

This subsection describes how to set up Store version 2.0 when you update the Store database.

1. Estimating the system resources and setting the retention period

Make sure that the system resources required for installing Store version 2.0 are appropriate for the execution environment. The types of required system resources are as follows:

- Disk capacity
- Number of files
- Number of files opened by each process

Use retention period settings to adjust these values. Set the retention period taking into account the resources available in the execution environment. For details about estimating the system resources, see *A. System Estimates*.

2. Setting folders

After you have updated your Store database to Store version 2.0, the Agent Store service might not start using the data storage folder settings for performance data that were set for Store version 1.0. For this reason, you must specify the folder settings again. For details, see *2.4.1 Changing the performance data storage*

location.

3. Executing the setup command

To update the Store version to 2.0, execute the `jpcconf db vrset -ver 2.0 (jpcdbctrl setup)` command. You must execute this command for each Agent instance.

For details about the `jpcconf db vrset -ver 2.0 (jpcdbctrl setup)` command, see the manual *Job Management Partner 1/Performance Management Reference*.

4. Setting the retention period

Set the retention period that was determined during the estimation process in step 1. Start the Agent Store service and use PFM - Web Console to specify the settings.

(2) Setup in a multi-instance environment

In a multi-instance environment, execute the `jpcconf inst setup(jpcinssetup)` command when you create a new instance using PFM - Manager, PFM - Base, and PFM - Agent version 08-11 or later.

(3) Canceling the setup of Store version 2.0

To cancel the setup of Store version 2.0, use the `jpcconf db vrset -ver 1.0 (jpcdbctrl unsetup)` command. When the setup of Store version 2.0 is canceled, all data in the Store database is initialized and the Store database is reset to Store version 1.0.

For details about the `jpcconf db vrset -ver 1.0 (jpcdbctrl unsetup)` command, see the manual *Job Management Partner 1/Performance Management Reference*.

(4) Notes

This subsection provides notes about updating.

(a) When updating from Store version 1.0 to Store version 2.0

When the Store database is updated from Store version 1.0 to 2.0, the retention period settings are inherited for records of the PI record type. However, for records of the PD record type, the default retention days value (which determines the number of records to be retained) is set to the default value for each record regardless of the previous settings, and the data that had been collected prior to the default retention days value is deleted.

For example, if 1,000 PD records whose Collection Interval is 3,600 seconds are set to be retained in Store version 1.0, about 42 days (1,000/24) worth of data is stored because 24 PD records are stored per day. If this Store database is updated to Store version 2.0 and the value 10 had been set as the default retention days value for PD

records, the data obtained more than 10 days ago will be deleted and will no longer be viewable.

Before you update the Store database to Store version 2.0, check the settings for the number of records to be retained for the PD record type. If more than the default retention days worth of data is set to be retained in Store version 2.0, use the `jpctool db dump (jpcctrl dump)` command to output the data from the database. For details about the default retention days in Store version 2.0, see *A.2(2)(b) Disk space requirements for Store database version 2.0*.

(b) When restoring Store version 1.0 from 2.0

If you cancel the setup of Store version 2.0, the data is initialized. Therefore, before you restore Store version 1.0, execute the `jpctool db dump (jpcctrl dump)` command to output the Store version 2.0 information.

(c) Default record retention period in Store version 2.0

Store version 2.0 is supported when PFM - Manager or PFM - Base version 08-11 or later is combined with PFM - Agent for Enterprise Applications version 08-00 or later. The default record retention period depends on whether PFM - Agent for Enterprise Applications 09-00 or later is used or PFM - Agent for Enterprise Applications 08-00 is used.

If PFM - Agent for Enterprise Applications 09-00 or later is used:

For details about the default record retention period, see *A.2(2)(b) Disk space requirements for Store database version 2.0*.

If PFM - Agent for Enterprise Applications 08-00 is used:

The default retention period is set to 10 days for all records of the PD and PL record types. For records of the PI record type, the default retention period is set as shown in the table below.

Table 2-10: Default retention period for records of the PI record type

Retention period before setup	Retention period after setup				
	Summary type				
	By the minute (in days)	Hourly (in days)	Daily (in weeks)	Weekly (in weeks)	Monthly (in months)
1 minute	1	--	--	--	--
1 hour	1	1	--	--	--
1 day	1	1	1	--	--
2 days	2	2	1	--	--

Retention period before setup	Retention period after setup				
	Summary type				
	By the minute (in days)	Hourly (in days)	Daily (in weeks)	Weekly (in weeks)	Monthly (in months)
3 days	3	3	1	--	--
4 days	4	4	1	--	--
5 days	5	5	1	--	--
6 days	6	6	1	--	--
1 week	7	7	1	1	--
1 month	31	31	5	5	1
1 year	366	366	54	54	12

Legend:

--: Cannot be specified

2.4.3 Settings for updating an instance environment

This subsection describes how to update an instance environment.

You must repeat this procedure for each instance environment you wish to update.

Use the `jpccconf inst list (jpcinslist)` command to find the instance name; use the `jpccconf inst setup (jpcinssetup)` command to update the instance environment.

To update an instance environment:

1. Find the instance name.

Execute the `jpccconf inst list (jpcinslist)` command with the service key specified that indicates the PFM - Agent for Enterprise Applications running in the instance environment.

For example, to check the instance name of PFM - Agent for Enterprise Applications, execute the following command:

```
jpccconf inst list -key EAP (jpcinslist agtm)
```

If the specified instance name is `o246bci_SD5_00`, the command displays `o246bci_SD5_00`.

2. Check the information to be updated.

The following table lists and describes the instance environment information that can be updated.

Table 2-11: Instance information for PFM - Agent for Enterprise Applications

Item	Description	Permitted value	Default value
SID	ID of the SAP system that is to be monitored	Character string (up to 8 bytes)	Previous setting
SERVER	SAP instance name that is to be monitored (the SAP instance name that has a dialog service, and which can be verified by transaction code SM51)	Character string (up to 20 bytes)	Previous setting
ASHOST	Host name of the connection-target application server (the SAP local host name, which can be verified by transaction code SM51)	Character string (up to 100 bytes)	Previous setting
SYSNR	System number of the SAP system	Numeric characters (up to 2 bytes)	Previous setting
CLIENT	Client name to which the SAP user belongs (system number assigned to the connection-target dialog instance)	Numeric characters (up to 3 bytes)	Previous setting
USER	SAP user name [#]	Character string (up to 12 bytes)	Previous setting
EXTPWD	Whether an extended password is to be used to connect to the SAP system	Y or N <ul style="list-style-type: none"> Y: Use an extended password. N: Do not use an extended password. 	Previous setting
PASSWD	Password of the SAP user [#]	<ul style="list-style-type: none"> When an extended password is used: Up to 40 single-byte characters When an extended password is not used: Up to 8 single-byte characters 	Previous setting (the value is not displayed)

Item	Description	Permitted value	Default value
DELAYCONNECT	Timing of the connection to the SAP system	Y or N: <ul style="list-style-type: none"> Y: Connect to the SAP system only when performance data is collected. The Agent Collector service is started regardless of the operating status of the SAP system at the time of connection establishment. N: Connect to the SAP system when the Agent Collector service starts. The Agent Collector service is not started if the SAP system is not active at the time of connection establishment. 	Previous setting

#

For details about SAP users and passwords, see *2.1.4(2) Creating SAP users that are to be used by PFM - Agent for Enterprise Applications*.

3. If the PFM - Agent for Enterprise Applications service is active for the instance environment that is to be updated, stop it.

If the service is still active for the instance environment that is to be updated when you execute the `jpccconf inst setup (jpcinssetup)` command, a confirmation message is displayed to enable you to stop the service. If you stop the service, update processing resumes; if you do not stop the service, update processing is canceled.

4. Execute the `jpccconf inst setup (jpcinssetup)` command, in which you have specified the service key and instance name of the PFM - Agent for Enterprise Applications for the instance environment that you wish to update.

For example, if you are updating the instance environment for the PFM - Agent for Enterprise Applications with instance name `o246bci_SD5_00`, execute the command as follows:

```
jpccconf inst setup -key EAP (jpcinssetup agtm) -inst
o246bci_SD5_00
```

5. Update the instance information for SAP system.

Enter the information shown in Table 2-11 in accordance with the command's instructions. The current settings are displayed (except for the value of `passwd`). To use a displayed value, press the **Enter** key. When all entries are completed, the

instance environment is updated.

6. Restart the services in the updated instance environment.

For details on how to start and stop services, see the chapter that describes starting and stopping services in the *Job Management Partner 1/Performance Management User's Guide*. For details about the commands, see the chapter that describes commands in the manual *Job Management Partner 1/Performance Management Reference*.

2.5 Starting the command prompt

For Windows Server 2008, if the OS's user account control (UAC) function is enabled, the command prompt runs in the following two privilege modes:

- Command prompt in the administrator privilege mode (administrator console)
This command prompt supports all Windows operations.
- Command prompt in the default privilege mode (default console)
This command prompt supports limited user operations.

If the user account control (UAC) function is disabled, the administrator console is always started.

Make sure that you use the administrator console to execute the commands provided by Performance Management.

The following table describes how to start the command prompt for each administrator user.

Table 2-12: How to start the command prompt for each administrator user

Administrator group	Administrator user	How to start
Administrators	Administrator	When the command prompt is started, the administrator console starts.
	Other user	<p>When UAC is enabled:</p> <ul style="list-style-type: none"> • When the command prompt is started, the default console starts. • When the administrator console starts, a user account control dialog box is displayed. In the dialog box, clicking the Continue button starts the administrator console. If the Cancel button is clicked, the command prompt is not started. <p>When UAC is disabled:</p> <ul style="list-style-type: none"> • When the command prompt is started, the administrator console starts.

There are two administrator consoles, one provided by the OS and the other provided by PFM - Base. The following describes how to start each console.

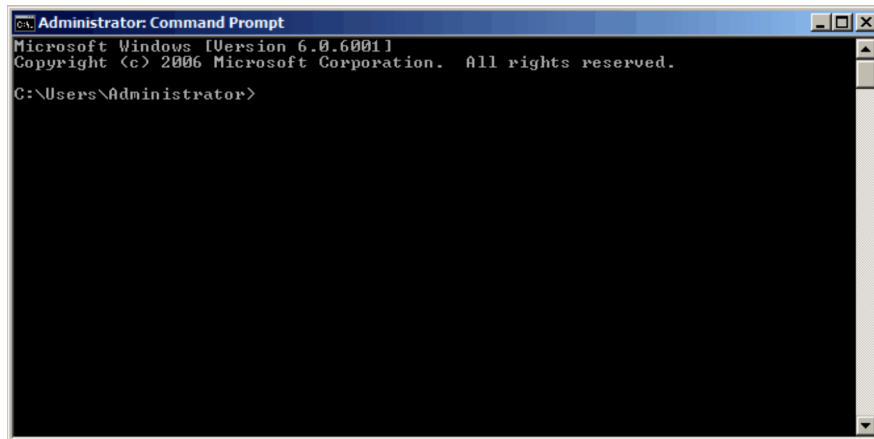
(1) *How to start the administrator console provided by the OS*

From the **Start** menu, choose **Programs** and then **Accessories**, and then right-click **Command Prompt** and choose **Run as Administrator**.

If **Administrator** is displayed on the title bar, the started command prompt is the

administrator console.

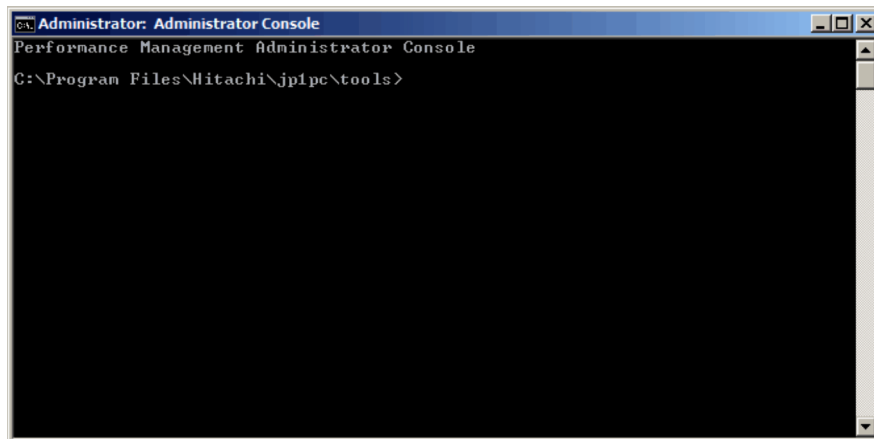
Figure 2-4: Administrator console window provided by the OS



(2) How to start the administrator console provided by PFM - Base

From the **Start** menu, choose **Programs** and then **Performance Management**, and then **Administrator Console**.

Figure 2-5: Administrator console window provided by PFM - Base



2.6 Backup and restoration

This section describes backing up and restoring PFM - Agent for Enterprise Applications.

To protect against damage to the system caused by a failure, we recommend that you periodically back up the settings for PFM - Agent for Enterprise Applications. We recommend that you also back up the settings whenever a change has been made to the system, such as when PFM - Agent for Enterprise Applications is set up.

For details about backing up and restoring the entire Performance Management system, see the chapter that describes backup and restoration in the *Job Management Partner 1/Performance Management User's Guide*.

2.6.1 Backup

You can make a backup using any method, such as by copying files. Perform the backup operation while the services of PFM - Agent for Enterprise Applications are stopped.

The following table lists the settings files for PFM - Agent for Enterprise Applications that must be included in a backup.

Table 2-13: Files to be backed up for PFM - Agent for Enterprise Applications

File name	Description
<i>installation-folder\agtm\agent*.ini</i>	Settings file for the Agent Collector service
<i>installation-folder\agtm\store*.ini</i>	Settings file for the Agent Store service
<i>jr3slget.ini</i> (default name). The file path is the current directory for command execution or the file path specified in the <i>-cnf</i> option.	Environment parameters file for the system log
<i>jr3alget.ini</i> (default name). The file path is the current directory for command execution or the file path specified in the <i>-cnf</i> option.	Environment parameters file for CCMS alerts

Note:

When you back up PFM - Agent for Enterprise Applications, you must manage the environment's product version numbers. For details about product version numbers, see the applicable Release Notes.

2.6.2 Restoration

To restore the settings for PFM - Agent for Enterprise Applications, make sure that the prerequisites listed below are satisfied and then copy the backup files to their original

locations. The settings files on the host will be overwritten by the contents of the backup settings files.

Prerequisites

- PFM - Agent for Enterprise Applications has already been installed.
- All services of PFM - Agent for Enterprise Applications have stopped.

Notes

- To restore the settings for PFM - Agent for Enterprise Applications, the product version numbers must match between the environment from which the backup was acquired and the environment in which the backup is restored. For details about the product version numbers, see the applicable Release Notes. The following examples show when the settings for PFM - Agent for Enterprise Applications can and cannot be restored.

Example of when PFM - Agent for Enterprise Applications settings can be restored.

- The settings backed up by PFM - Agent for Enterprise Applications 09-00 are restored to PFM - Agent for Enterprise Applications 09-00.

Examples of when PFM - Agent for Enterprise Applications settings cannot be restored:

- The settings backed up by PFM - Agent for Enterprise Applications 08-00 are restored to PFM - Agent for Enterprise Applications 09-00.
- The settings backed up by PFM - Agent for Enterprise Applications 09-00 are restored to PFM - Agent for Enterprise Applications 09-00-04.
- Because the SAP system's system log and the previous CCMS alert extraction times are managed by PFM - Agent for Enterprise Applications, we recommend that you clear the following information:

installation-folder\agtm\agent*instance-name*\log\jr3slget.lasttime or
installation-folder\agtm\agent*instance-name*\log\jr3alget.lasttime

If you are using a logical host, specify the following folder as the installation folder:

environment-directory\jplpc

If you use command execution, include the following file, which is located in the directory specified in the WORKDIR label in the COMMAND section in the environment parameters file:

jr3slget.lasttime or jr3alget.lasttime

2.7 Settings for using a Web browser to reference manuals

You can copy the Performance Management manuals from the manual CD-ROM provided with the program product to the host where PFM - Web Console is installed. You can then use a Web browser to reference the manuals. If you are running PFM - Web Console in a cluster environment, copy the manuals onto the physical hosts of both executing and standby systems.

2.7.1 Settings procedures

(1) When referencing manuals from Help of PFM - Web Console

To reference manuals from Help of PFM - Web Console:

1. Register PFM - Agent into PFM - Web Console according to the PFM - Web Console setup procedure (perform additional setup of PFM - Agent).
2. On the host where PFM - Web Console is installed, create a directory into which you can copy manuals:

Web-Console-installation-folder\doc\ja\xxx

3. Copy the following files and directories from the manual CD-ROM in to the directory you created in step 2:

- For HTML manuals

All HTML files and FIGURE folders under
CD-ROM-drive\MAN\3020\manual-number (such as 03004A0D)

- For PDF manuals

PDF files under *CD-ROM-drive\MAN\3020\manual-number* (such as 03004A0D)

When you copy files, make sure that the PDF files or `index.htm` files are placed directly under the created directory for the HTML manuals or PDF manuals, respectively. For details about how to copy manual files, see `readme.txt` on the manual CD-ROM.

4. Restart PFM - Web Console.

(2) When referencing manuals from the hard disk of the computer being used

Use `setup.exe` on the CD-ROM to install the manuals or directly copy the HTML, PDF, and GIF files to a desired directory. For HTML manuals, set the directory structure as follows:

```
html (contains HTML and PDF files)
| -FIGURE (contains GIF files)
```

2.7.2 Browsing procedure

To view a manual:

1. In the Main window of PFM - Web Console, click the **Help** menu in the menu bar to display the Help selection window.
2. Click either a manual name or **PDF** that follows a manual name.

Clicking a manual name displays the HTML version of the manual; clicking **PDF** displays the manual in PDF format.

Note about displaying in a Web browser

If you display an online manual from the **Start** menu, it is possible that the HTML manual will be displayed in any Web browser that is already open.

Chapter

3. Installation and Setup (In UNIX)

This chapter describes the procedures for installing and setting up PFM - Agent for Enterprise Applications in UNIX.

- 3.1 Installation and setup
- 3.2 Uninstallation and unsetup
- 3.3 Changing the PFM - Agent for Enterprise Applications system configuration
- 3.4 Changing the PFM - Agent for Enterprise Applications operation method
- 3.5 Backup and restoration
- 3.6 Settings for using a Web browser to reference manuals

3.1 Installation and setup

This section explains the procedures for installing and setting up PFM - Agent for Enterprise Applications.

3.1.1 Before installation and setup

This section describes the items to be checked before installing and setting up PFM - Agent for Enterprise Applications.

(1) *Supported OSs*

PFM - Agent for Enterprise Applications can run on the following operating systems (OSs):

- HP-UX
- AIX
- Solaris

(2) *Network environment setup*

This subsection describes the network environment needed for Performance Management operation.

(a) **Setting IP addresses**

You must set up the environment for a PFM - Agent host in such a manner that IP addresses can be determined from the host name. PFM - Agent can run only in an environment in which IP addresses can be resolved.

For the monitoring host name (name used as the host name of the Performance Management system), you can use the real host name or an alias name.

- When the real host name is used as the monitoring host name:

In a UNIX system, set the environment in such a manner that the IP address can be resolved by the host name that is obtained by the `uname -n` command. Note that in a UNIX system, you can also use the `hostname` command to obtain the host name.

- When an alias name is used as the monitoring host name:

Set the environment in such a manner that the IP address can be resolved by this alias name.

For details about the monitoring host name setting, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

To set host names and IP addresses, use one of the following methods:

- Performance Management's host information file (`jpchosts` file)
- `hosts` file
- Domain Name System (DNS)

Notes

- Performance Management can be run in a DNS environment, but it does not support fully qualified domain names (FQDNs). When you specify a monitoring host name, do not include the domain name.
- If you use Performance Management in multiple LAN environments, use the `jpchosts` file to set IP addresses. For details, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.
- Performance Management does not run on a host where dynamic IP addresses are assigned by DHCP. Set fixed IP addresses for all hosts on which Performance Management is to be installed.

(b) Setting port numbers

The port numbers listed in the table below are assigned by default to the Performance Management program services. An available port number is assigned automatically to any other service or program each time such a service is started. You must use fixed port numbers when Performance Management is used in a firewall environment. For details about how to fix port numbers, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

Table 3-1: Default port numbers used by the Performance Management program services (for UNIX)

Service description	Service name	Parameter	Port number	Remarks
Service configuration information management function	Name Server	<code>jp1pcnsvr</code>	22285	Port number used by PFM - Manager's Name Server service. This port number is set at all hosts of Performance Management.

3. Installation and Setup (In UNIX)

Service description	Service name	Parameter	Port number	Remarks
OpenView linkage facility	NNM Object Manager	jp1pcovsvr	22292	Port number used for communication between map manager and object manager when the OpenView linkage facility is used with PFM - Manager and PFM - Base. This port number is set at the host where PFM - Manager and PFM - Base are installed.
Service status management function	Status Server	jp1pcstatsvr	22350	Port number used by the Status Server service of PFM - Manager and PFM - Base. This port number is set at the host where PFM - Manager and PFM - Base are installed.

You should set up your network in such a manner that communication can be established with the port numbers used by these Performance Management program services.

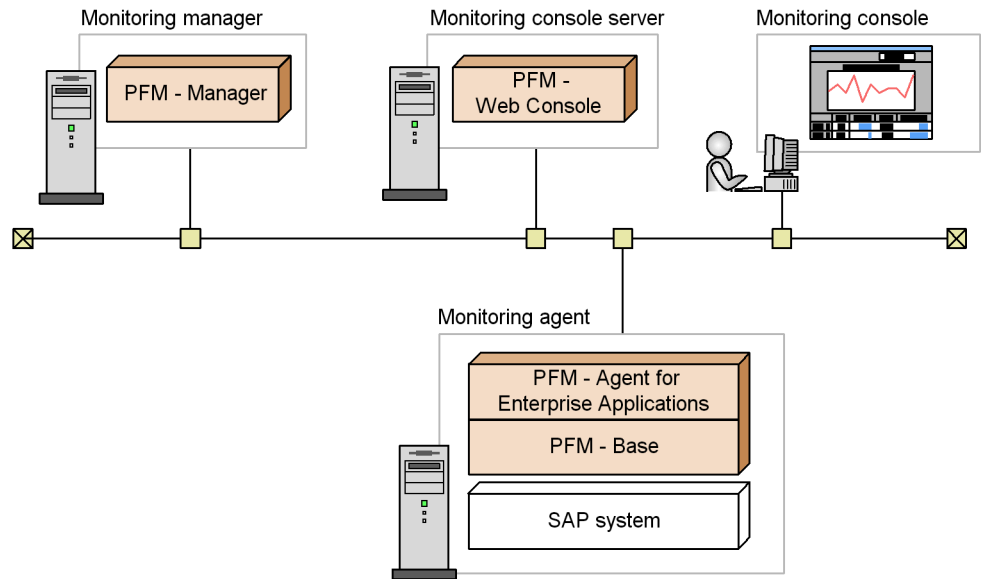
(3) OS user permission required for installation

Make sure that you are using an account that has the superuser permission when you install PFM - Agent for Enterprise Applications.

(4) Required programs

This subsection describes the programs that are required in order to install PFM - Agent for Enterprise Applications. The following shows the configuration of the programs.

Figure 3-1: Program configuration



Legend:

- : Program provided by Performance Management
- : Required program

(a) Programs that can be monitored

PFM - Agent for Enterprise Applications can monitor the following programs:

- SAP R/3 Enterprise
- SAP Business Information Warehouse
- SAP NetWeaver

For these programs to be monitored, they must be installed on the same host as PFM - Agent for Enterprise Applications.

(b) Performance Management programs

PFM - Agent and PFM - Base must be installed on the monitoring agent. PFM - Base is a prerequisite program for PFM - Agent. You need only one PFM - Base even when multiple PFM - Agents are installed on the same host.

Note that if you install PFM - Manager and PFM - Agent on the same host, PFM - Base is not required.

To monitor SAP system operation using PFM - Agent for Enterprise Applications, you

need PFM - Manager and PFM - Web Console.

(5) Installing and setting up in a cluster system

The required network environment and program configuration are different for a cluster system than for a normal non-cluster system. In a cluster system, installation and setup are required at both the executing and the standby nodes. For details, see *4. Operation in a Cluster System*.

(6) Notes

This subsection provides notes about installing and setting up Performance Management.

(a) Notes about environment variables

Performance Management uses the `JPC_HOSTNAME` environment variable. Do not set a user-specific `JPC_HOSTNAME` environment variable. If such an environment variable is set, Performance Management will not function correctly.

(b) Installing and setting up multiple Performance Management programs on the same host

Performance Management enables you to install PFM - Manager, PFM - Web Console, and PFM - Agent on the same host. This subsection provides notes about such an installation.

- If you install PFM - Manager and PFM - Agent on the same host, there is no need to install PFM - Base. In this case, PFM - Agent requires PFM - Manager; therefore, install PFM - Manager first, and then install PFM - Agent.
- PFM - Base and PFM - Manager cannot be installed on the same host. To install PFM - Manager on a host where PFM - Base and PFM - Agent are already installed, uninstall all Performance Management programs (other than PFM - Web Console), and then install PFM - Manager and PFM - Agent in this order. Similarly, to install PFM - Base on a host where PFM - Manager and PFM - Agent are already installed, uninstall all Performance Management programs (other than PFM - Web Console), and then install PFM - Base and PFM - Agent in this order.
- If you install PFM - Agent on a host where PFM - Manager is already installed, the PFM - Manager on the local host becomes the connection-target PFM - Manager. In such a case, you can no longer change the connection-target PFM - Manager to a PFM - Manager on a remote host. Therefore, if you want to connect to a PFM - Manager on a remote host, make sure that PFM - Manager has not been installed already on the target host.
- If a PFM - Agent already exists on the host where PFM - Manager is being installed, the local host is redesignated as the connection-target PFM - Manager for that PFM - Agent. The resulting settings are output to the common message log file; check the results.

- If PFM - Web Console already exists on a host where PFM - Agent is to be installed, close all browser windows before starting installation.
- When a new Performance Management program is installed, the default is that the status management function is enabled. However, if you upgrade from version 07-00 to 08-00 or later, the settings for the status management function disabled. To change the status management function settings, see the chapter that describes Performance Management failure detection in the *Job Management Partner 1/Performance Management User's Guide*.

Tip

System performance and reliability are improved by running PFM - Manager, PFM - Web Console, and PFM - Agent on separate hosts.

(c) Upgrading

This subsection provides notes about upgrading a PFM - Agent.

For details about upgrading, see *H. Migration Steps and Notes on Migration*.

- When you install a Performance Management program, make sure that all Performance Management program services are stopped at the local host. This includes all services on both physical and logical hosts. For details about how to stop services, see the chapter that describes startup and termination of Performance Management in the *Job Management Partner 1/Performance Management User's Guide*.
- If a Performance Management program already exists on the host where a PFM - Agent is to be installed, the PFM - Agent's installation path becomes the same as for the existing Performance Management programs (other than PFM - Web Console). To change the installation path, you must delete all the Performance Management programs that have been installed (other than PFM - Web Console) and then re-install them.
- PFM - Base and PFM - Manager cannot be installed on the same host. To install PFM - Manager on a host where PFM - Base and a PFM - Agent have been installed already, uninstall all Performance Management programs (other than PFM - Web Console), and then install PFM - Manager and PFM - Agent in this order. Similarly, to install PFM - Base on a host where PFM - Manager and a PFM - Agent have been installed already, uninstall all Performance Management programs (other than PFM - Web Console), and then install PFM - Base and PFM - Agent in this order.
- For a Performance Management program of version 08-00 or later, the locations of the Store execution programs (`jpctesto` and `stpqlpr`) have been changed. The old Store execution modules are deleted when PFM - Agent is upgraded to version 08-00 or later.
- During an upgrade installation, the disk space required for the Store database is

temporarily doubled because the existing Store database is upgraded automatically. Before you start the upgrade installation, make sure that there is enough space on the disk where the Store database is located.

(d) Other notes

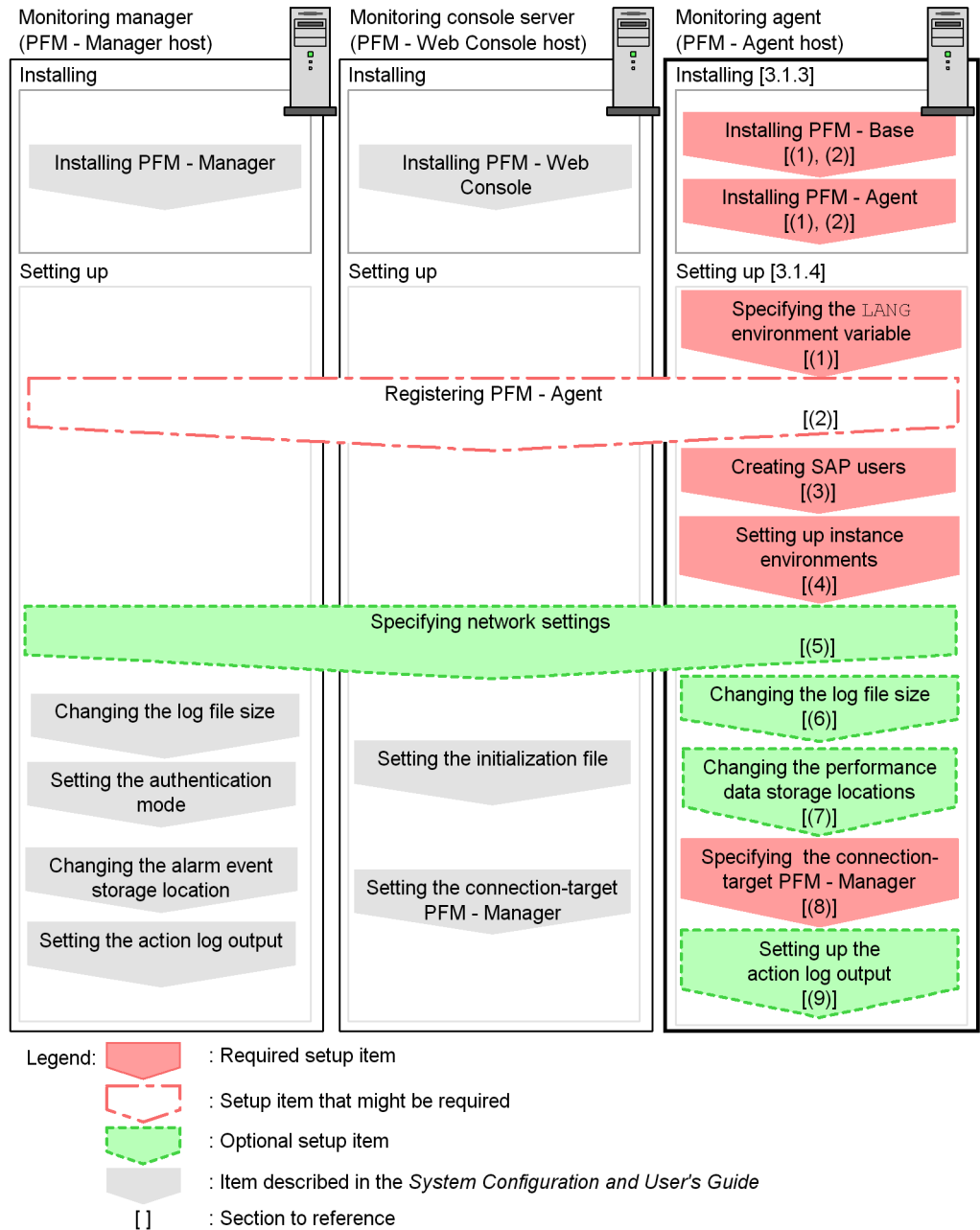
- Before you install Performance Management programs, check to see if any security-related programs, such as those described below, are installed. If such a program is installed, take appropriate action according to the information provided below.
 - Security monitoring program
Terminate the security monitoring program or change its settings so that installation of the Performance Management programs will not be affected.
 - Virus detection program
We recommend that you terminate any virus detection program before you install the Performance Management programs.
If a virus detection program is running during installation of a Performance Management program, it might slow down the installation process, the installation might fail, or the program might not install correctly.
 - Process monitoring program
Terminate the process monitoring program or change its settings so that it does not monitor the services and processes of Performance Management or the services and processes of common components.
Installation of a Performance Management program might fail if any of these services or processes is started or stopped by the process monitoring program during the installation process.
- If you are installing PFM - Agent for Enterprise Applications in an environment in which no Performance Management program has been installed, make sure that there are no files or directories in the installation-target directory.
- If installation fails with `Install failed` displayed on the status bar during the installation process, obtain the installation log. It is wise to make a backup of this log file, because it will be overwritten during the next installation. For details about the default file name for the installation log, see *12.4.2(2) Information about Performance Management*.
- If a link is placed in the installation directory to install Performance Management programs, uninstalling all Performance Management programs might not remove all the files and directories from the linked directory. If necessary, manually delete the remaining files and directories. If a Performance Management program is to be installed by linking and the link destination contains a file or directory with the same name, that file or directory will be overwritten when the Performance

Management program is installed.

3.1.2 Flow of tasks for installation and setup

This subsection describes the flow of tasks for installing and setting up PFM - Agent for Enterprise Applications.

Figure 3-2: Flow of tasks for installation and setup



For details about how to install and set up PFM - Manager and PFM - Web Console,

see the chapter that describes installation and setup in the *Job Management Partner 1/ Performance Management Planning and Configuration Guide*.

3.1.3 Installation procedure

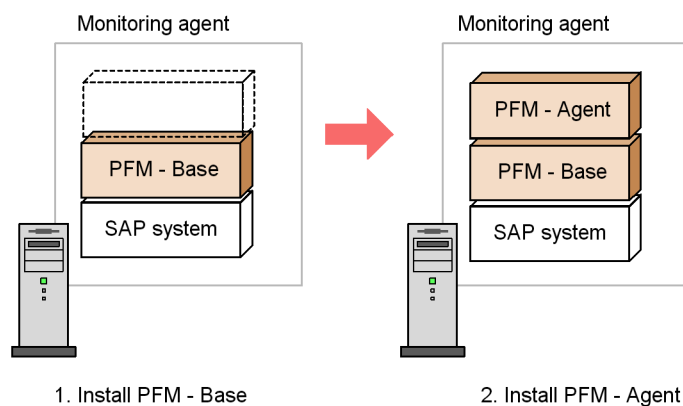
This subsection describes the program installation order for PFM - Agent for Enterprise Applications and how to install the program from the provided CD-ROM.

(1) Program installation order

You must install PFM - Base before you install a PFM - Agent. PFM - Agent cannot be installed on a host where PFM - Base has not been installed.

To install PFM - Agent and PFM - Manager on the same host, install PFM - Manager first and then PFM - Agent. If you are upgrading the Store database from version 1.0 to 2.0, the setup method depends on the order in which PFM - Agent and PFM - Manager or PFM - Base are installed. For details about how to set up Store version 2.0, see 3.4.2 *Updating the Store version to 2.0*.

Multiple PFM - Agents installed on the same host can be installed in any order.



(2) How to install the program

There are two ways to install the Performance Management program on a UNIX host. One uses the provided CD-ROM, and the other uses JP1/Software Distribution for remote installation. For details about the method for using JP1/Software Distribution, see the following manuals:

- *Job Management Partner 1/Software Distribution Manager Description and Administrator's Guide*
- *Job Management Partner 1/Software Distribution SubManager Description and Administrator's Guide*, for UNIX systems
- *Job Management Partner 1/Software Distribution Client Description and User's*

Guide, for UNIX systems

Note

If Performance Management programs and services are already running on the host where the program is to be installed, you must first stop all the active programs and services, including all services on both physical and logical hosts. For details about stopping services, see the chapter that describes starting and stopping services in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

The following subsections describe how to install the program from the provided CD-ROM.

(a) In HP-UX

1. On the host where the Performance Management program is to be installed, log on as a superuser or use the `su` command to change the user to a superuser.
2. Stop all Performance Management programs and services on the local host.
If any Performance Management programs and services are running, stop all of them.
3. Insert the CD-ROM containing the Performance Management program.
4. Execute the `mount` command to mount the CD-ROM device.

For example, to mount the CD-ROM device on `/cdrom`, execute the command as follows:

```
/usr/sbin/mount -F cdfs -r device-special-file-name /cdrom
```

Note that the command's specification depends on the environment being used.

5. Execute the following command to start the Hitachi Program Product Installer:

```
/cdrom/IPFHPUX/SETUP /cdrom
```

The Hitachi Program Product Installer starts and displays the initial window.

6. In the initial window, enter `I`.
A list of installable programs is displayed.
7. Select the Performance Management program that you wish to install and then enter `I`.

The selected program is installed. To select a program, move the cursor to the desired program and then select it by pressing the space key.

8. When installation is completed successfully, enter `Q`.

The initial window of the Hitachi Program Product Installer appears again.

(b) In Solaris 9 (SPARC), Solaris 10 (SPARC)

1. On the host where the Performance Management program is to be installed, log on as a superuser or use the `su` command to change the user to a superuser.
2. Stop all Performance Management programs and services on the local host.
If any Performance Management programs and services are running, stop all of them.
3. Insert the CD-ROM containing the Performance Management program.
4. Execute the following command to start the Hitachi Program Product Installer. #

```
/cdrom/cdrom/SOLARIS/SETUP /cdrom/cdrom
```

The Hitachi Program Product Installer starts and displays the initial window.

5. In the initial window, enter `I`.
A list of installable programs is displayed.
6. Select the Performance Management program that you wish to install and then enter `I`.
The selected program is installed. To select a program, move the cursor to the desired program and then select it by pressing the space key.
7. When installation is completed successfully, enter `Q`.

The initial window of the Hitachi Program Product Installer appears again.

#

In an environment in which the automatic mounting function is disabled, before starting the Hitachi Program Product Installer, you must mount the CD-ROM device by entering the following `/usr/sbin/mount` command:

```
/usr/sbin/mount -F cdfs -r device-special-file-name /cdrom/cdrom
```

Note that the command's specification depends on the environment being used.

(c) In AIX

1. On the host where the Performance Management program is to be installed, log on as a superuser or use the `su` command to change the user to a superuser.
2. Stop all Performance Management programs and services on the local host.

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If any Performance Management programs and services are running, stop all of them.

3. Insert the CD-ROM containing the Performance Management program.
4. Execute the `mount` command to mount the CD-ROM device.

For example, to mount the CD-ROM device on `/cdrom`, execute the command as follows:

```
/usr/sbin/mount -r -v cdrfs /dev/cd0 /cdrom
```

Note that the command's specification depends on the environment being used.

5. Execute the following command to start the Hitachi Program Product Installer:

```
/cdrom/AIX/SETUP /cdrom
```

The Hitachi Program Product Installer starts and displays the initial window.

6. In the initial window, enter `I`.
A list of installable programs is displayed.
7. Select the Performance Management program that you wish to install and then enter `I`.

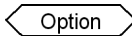
The selected program is installed. To select a program, move the cursor to the desired program and then select it by pressing the space key.

8. When installation is completed successfully, enter `Q`.

The initial window of the Hitachi Program Product Installer appears again.

3.1.4 PFM - Agent for Enterprise Applications setup procedure

This subsection describes the setup that is required before you can use PFM - Agent for Enterprise Applications.

 indicates a setup item whose requirement depends on the environment being used or an optional setup item when you wish to change a default setting.

(1) Specifying the LANG environment variable

The table below shows the `LANG` environment variable value supported by PFM - Agent for Enterprise Applications.

Before you specify the `LANG` environment variable, make sure that the correct language environment has been installed and constructed. If the language environment is incorrect, encoding errors might occur or definition data might be replaced with

invalid data.

Note

The `LANG` environment variable specified at the time of service startup or command execution determines the language used for the common message log. Therefore, character strings in the code sets of multiple languages might coexist.

Table 3-2: LANG environment variable value supported by PFM - Agent for Enterprise Applications

OS	Language	LANG environment variable value
HP-UX, Solaris, AIX	English	c

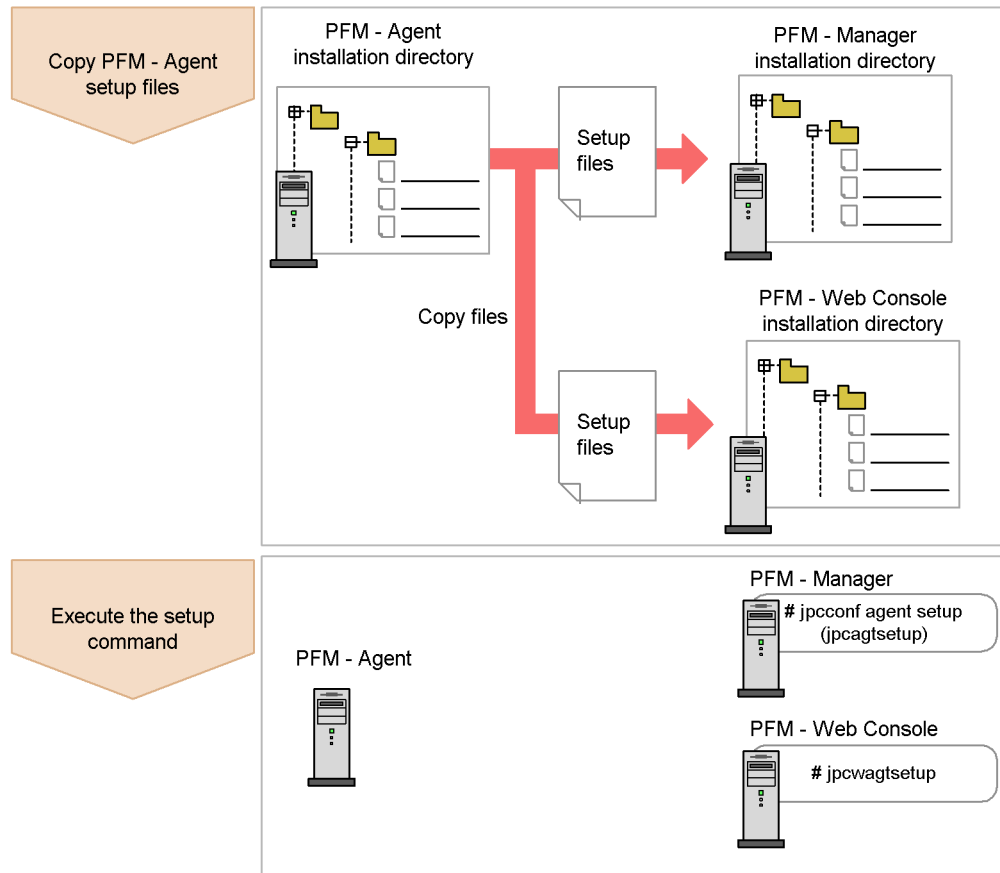
(2) Registering PFM - Agent for Enterprise Applications

To use PFM - Manager and PFM - Web Console for centralized management of PFM - Agents, PFM - Agent for Enterprise Applications must be registered into PFM - Manager and PFM - Web Console.

If the version of PFM - Manager is 09-00 or later, PFM - Agent is registered automatically, in which case there is no need to perform the procedure described here. However, any data model version of PFM - Agent that is not included in the Release Notes for PFM - Manager must be registered manually. For details about the data model version of PFM - Agent for Enterprise Applications, see *I. Version Compatibility*.

The following shows the procedure for registering a PFM - Agent.

Figure 3-3: Procedure for registering a PFM - Agent



Notes

- Register PFM - Agent before you set up instance environments.
- If you are adding a new version of PFM - Agent for Enterprise Applications to a Performance Management system in which information about PFM - Agent for Enterprise Applications has already been registered, there is no need to register the PFM - Agents.
- If you install a different version of PFM - Agent for Enterprise Applications on a separate host, set up the old version first and then the new version.
- If you have installed PFM - Agent on the same host as PFM - Manager, the `jpcconf agent setup (jpcagtsetup)` command executes automatically and the message `KAVE05908-I New agent setup`

(*Pfm-Agent-service-key*) ended successfully. (version=*version*) is output to the common message log. Check the result; if the command did not execute correctly, re-execute it. For details about executing commands, see the chapter that describes commands in the manual *Job Management Partner 1/Performance Management Reference*.

(a) Copying the setup files for PFM - Agent for Enterprise Applications

Copy the setup files from the host where PFM - Agent for Enterprise Applications was installed to the host where PFM - Manager and PFM - Web Console were installed.

To copy the setup files:

1. Stop PFM - Web Console if it is running.
2. Copy the PFM - Agent setup files in the binary mode.

The table below shows the source and target locations of the files to be copied.

Table 3-3: Setup files to be copied

PFM - Agent setup file	Source		
	PFM program name	OS	Target folder or directory
/opt/jp1pc/setup/jpcagtmw.EXE	PFM - Manager	Windows	<i>PFM-Manager-installation-folder\setup</i>
/opt/jp1pc/setup/jpcagtmu.Z		UNIX	/opt/jp1pc/setup/
/opt/jp1pc/setup/jpcagtmw.EXE	PFM - Web Console	Windows	<i>PFM-Web-Console-installation-folder\setup</i>
/opt/jp1pc/setup/jpcagtmu.Z		UNIX	/opt/jp1pcwebcon/setup/

(b) Executing the setup command at the PFM - Manager host

To use PFM - Manager to set up PFM - Agent for Enterprise Applications, execute the following command:

```
jpccconf agent setup -key EAP (jpcagtsetup agtm)
```

Note

An error might occur if the `jpccconf agent setup (jpcagtsetup)` command is executed at a local host where Performance Management programs and services have not stopped completely. If an error occurs, check that all Performance Management programs and services have stopped completely and then re-execute the `jpccconf agent setup (jpcagtsetup)` command.

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After completing this step, you can delete the PFM - Agent setup files from the PFM - Manager host.

(c) Executing the setup command at the PFM - Web Console host

To use PFM - Web Console to set up PFM - Agent for Enterprise Applications, execute the following command:

```
jpcwagtsetup
```

After completing this step, you can delete the PFM - Agent setup files from the PFM - Web Console host.

(3) Creating the SAP users that are to be used by PFM - Agent for Enterprise Applications

To collect performance information, PFM - Agent for Enterprise Applications uses the RFC (communication protocol of SAP AG) to execute the external management interfaces defined in the SAP system. Therefore, you must prepare in advance the SAP system users who are to be used by PFM - Agent for Enterprise Applications.

This subsection describes the user types, passwords, and authorizations for the SAP users who are created in the SAP system.

(a) User types

The following types of SAP users can be used by PFM - Agent for Enterprise Applications:

- Dialog
- System
- Communication
- Service

(b) Characters permitted for passwords

Define passwords for the SAP users. A password can consist of single-byte numeric characters (from 0 to 9), single-byte alphabetic characters (from a to z, A to Z), and the following single-byte symbols:

```
!, @, $, %, &, /, (, ), =, ?, ', `*, +, ~, #, -, _., :, {, [, ], }, <, >, |
```

(c) Required authorizations

You must set the following authorizations (authorization objects) for the users:

- Authorizations required for a user to establish RFC connection with function modules (S_RFC)
- Authorizations required in order to use external management interfaces

(S_XMI_PROD)

For the value of each authorization, assign a value shown in the tables below or use the built-in configurations (S_RFC_ALL and S_XMI_ADMIN) that specify an asterisk (*) for all items.

Table 3-4: Authorizations required for a user to establish RFC connection with function modules (S_RFC)

Authorization	Description	Value
RFC_TYPE	Type of RFC object to be protected	FUGR (function group)
RFC_NAME	RFC name to be protected	*
ACTVT	Activity	16 (execution)

Table 3-5: Authorizations required in order to use external management interfaces (S_XMI_PROD)

Authorization	Description	Value
EXTCOMPANY	Company name of the external management tool	HITACHI
EXTPRODUCT	Program name of the external management tool	JP1
INTERFACE	Interface ID	*

(4) Setting up instance environments

You must set instance information for each SAP system that is to be monitored by PFM - Agent for Enterprise Applications. You perform the instance information setting at the PFM - Agent host.

The table below lists and describes the instance information items that are to be specified. Check this information before you start the setup procedure. For details about the instance information for an SAP system, see the SAP system documentation.

Table 3-6: Instance information for PFM - Agent for Enterprise Applications

Item	Description	Permitted value	Default value
SID	ID of the SAP system that is to be monitored	Character string (up to 8 bytes)	--
SERVER	SAP instance name that is to be monitored (the SAP instance name that has a dialog service, and which can be verified by transaction code SM51)	Character string (up to 20 bytes)	Instance name specified in <code>-inst</code> in the <code>jpccconf inst setup</code> (<code>jpccinssetup</code>) command

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Item	Description	Permitted value	Default value
ASHOST	Host name of the connection-target application server (the SAP local host, which can be verified by transaction code SM51)	Character string (up to 100 bytes)	Local host name
SYSNR	System number of the SAP system	Numeric characters (up to 2 bytes)	00
CLIENT	Client name to which the SAP user belongs (system number assigned to the connection-target dialog instance)	Numeric characters (up to 3 bytes)	000
USER	SAP user name	Character string (up to 12 bytes)	--
EXTPWD	Whether to use an extended password to connect to the SAP system	Y or N <ul style="list-style-type: none"> Y: Use an extended password. N: Do not use an extended password. 	N
PASSWD	Password of the SAP user	<ul style="list-style-type: none"> When an extended password is used: 1 to 40 single-byte characters When an extended password is not used: 1 to 8 single-byte characters 	--
DELAYCONNECT	Timing of the connection to the SAP system	Y or N <ul style="list-style-type: none"> Y: Connect to the SAP system only when performance data is collected. The Agent Collector service is started regardless of the operating status of the SAP system at the time of connection establishment. N: Connect to the SAP system when the Agent Collector service starts. The Agent Collector service is not started if the SAP system is not active at the time of connection establishment. 	N
Store Version#	Store version to be used. For details about the Store version, see <i>2.4.2 Updating the Store version to 2.0.</i>	{1.0 2.0}	2.0

Legend:

--: None

#

This setting is required when the version of PFM - Agent for Enterprise Applications is 09-00 or later, and the version of PFM - Base or PFM - Manager on the same host is 08-11 or later, and you are setting up an instance environment for the first time.

Note

- If no instance environment has been set up, the PFM - Agent for Enterprise Applications service cannot be started.

You use the `jpccconf inst setup (jpcinssetup)` command to construct an instance environment.

To construct an instance environment:

1. Execute the `jpccconf inst setup (jpcinssetup)` command with the service key and instance name specified.

For example, to construct an instance environment for the instance named `o246bci_SD5_00` for PFM - Agent for Enterprise Applications, execute the following command:

```
jpccconf inst setup -key EAP (jpcinssetup agtm) -inst
o246bci_SD5_00
```

Although you can use any instance name in PFM - Agent for Enterprise Applications, to simplify management we recommend that you use an instance name that identifies the SAP system that is to be monitored. Normally, a name in the format *host-name_SAP-system-ID_system-number* is assigned to an instance for an SAP system.

2. Specify instance information for the SAP system.

Enter the information shown in Table 3-6, in accordance with the command's instructions. You cannot omit any requested items. To use a displayed value (which is the default) press the **Enter** key.

Once you have entered all items, the instance environment is constructed. The following describes constructed instance environments:

- Organization of directories for instance environments

Instance environments are configured in the following directories:

- For physical host operation: `/opt/jp1pc/agtm`
- For logical host operation: `environment-directory#/jp1pc/agtm`

#

The environment directory is located on the shared disk that was specified when the logical host was created.

The following table shows the organization of the directories for instance environments.

Table 3-7: Organization of directories for instance environments

Directory and file names			Description
agent	<i>instance-name</i>	jpcagt.ini	Agent Collector service startup initialization file
		jpcagt.ini.model#	Model file for the Agent Collector service startup initialization file
		j3alget.ini	Environment parameters file for CCMS Alert Monitor Command (PD_ALMX) records
		j3slget.ini	Environment parameters file for System Log Monitor Command (PD_SLMX) records
		log	Storage directory for log files
store	<i>instance-name</i>	jpcsto.ini	Startup-information file of the Agent Store service
		jpcsto.ini.model#	Model file for the startup-information file of the Agent Store service
		*.DAT	Data model definition file
		dump	Export directory
		backup	Backup directory
		import	Import directory (for Store version 2.0)
		log	Storage directory for log files
		partial	Partial backup directory (for Store version 2.0)
		STPD	Performance data storage directory for the PD record type (for Store version 2.0)
		STPI	Performance data storage directory for the PI record type (for Store version 2.0)
		STPL	Performance data storage directory for the PL record type (for Store version 2.0)

#

You can use this file to restore the settings that were in effect before the instance

environment was constructed.

■ **Service ID for an instance environment**

The service ID for an instance environment is a character string that consists of a product ID, function ID, instance number, instance name, and host name. For example, service ID `MA1o246bci_SD5_00 [host01]` represents the following instance environment:

- Function ID: `A`
- Instance number: `1`
- Instance name: `o246bci_SD5_00`
- host name: `host1`

For details about the service ID, see the appendix in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

(5) Specifying network settings 

You must specify network settings only when you change the network configuration where Performance Management is used.

You can set the following two network settings items:

■ **IP addresses**

Set this information to use Performance Management in a network that is connected to multiple LANs. To set multiple IP addresses, define the host names and IP addresses in the `jpchosts` file. Make sure that the settings in the `jpchosts` file are consistent throughout the entire Performance Management system.

For details, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

■ **Port numbers**

You can set the port numbers used by Performance Management. To avoid confusion during operation, make sure that the specified port numbers and service names are consistent throughout the entire Performance Management system.

For details about setting port numbers, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

(6) Changing the log file size 

Performance Management's operating status is output to a log file unique to

Performance Management. This log is called the *common message log*, which consists of two files with a default size of 2,048 kilobytes each. This setting is required only when you wish to change this file size.

For details, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

(7) Changing the performance data storage locations Option

These settings are required only when you wish to change the storage location, backup folder, export folder, partial backup folder, or import folder for the database that stores the performance data managed by PFM - Agent for Enterprise Applications.

The default storage locations for the performance data are as follows:

Storage location	Directory name
Database	/opt/jp1pc/agtm/store/instance-name/
Database (for logical host operation)	environment-directory [#] /jp1pc/agtm/store/instance-name/
Backup	/opt/jp1pc/agtm/store/instance-name/backup/
Backup (for logical host operation)	environment-directory [#] /jp1pc/agtm/store/instance-name/backup/
Export	/opt/jp1pc/agtm/store/instance-name/dump/
Export (for logical host operation)	environment-directory [#] /jp1pc/agtm/store/instance-name/dump/
Partial backup (for Store version 2.0)	/opt/jp1pc/agtm/store/instance-name/partial/
Partial backup (for logical host operation with Store version 2.0)	environment-directory [#] /jp1pc/agtm/store/instance-name/partial/
Import (for Store version 2.0)	/opt/jp1pc/agtm/store/instance-name/import/
Import (for logical host operation with Store version 2.0)	environment-directory [#] /jp1pc/agtm/store/instance-name/import/

#

The environment directory is located on the shared disk that was specified when the logical host was created.

For details, see 3.4.1 *Changing the performance data storage location*.

(8) Specifying the connection-target PFM - Manager for PFM - Agent for Enterprise Applications

On the host where a PFM - Agent is installed, you must specify the PFM - Manager that manages that PFM - Agent. You use the `jpccconf mgrhost define (jpcnshostname)` command to set the connection-target PFM - Manager.

Notes

- There can be only one PFM - Manager as the connection destination even when multiple PFM - Agents are installed on the same host. Different PFM - Managers cannot be specified for the various PFM - Agents.
- If a PFM - Agent and PFM - Manager are installed on the same host, that PFM - Manager on the local host is automatically the connection-target PFM - Manager; you cannot change the connection-target PFM - Manager to some other PFM - Manager.

To specify the connection-target PFM - Manager:

1. Stop all Performance Management programs and services.

Before you start the setup procedure, you must terminate all Performance Management programs and services that are running on the local host. For details about stopping services, see the chapter that describes starting and stopping services in the *Job Management Partner 1/Performance Management User's Guide*.

If a Performance Management program or service remains active during execution of the `jpccconf mgrhost define (jpcnshostname)` command, a message is displayed that asks you to terminate the program.

2. Execute the `jpccconf mgrhost define (jpcnshostname)` command with the host name of the connection-target PFM - Manager specified.

For example, if the connection-target PFM - Manager is on host `host01`, specify the command as follows:

```
jpccconf mgrhost define (jpcnshostname) -s host01
```

(9) Setting up the action log

You can log information in the action log when, for example, PFM services start and stop, or when the status of the connection to PFM - Manager changes. The action log stores history information that is output in conjunction with the alarms for thresholds related to system load and other conditions.

For details about how to set up the action log, see *J. Outputting Action Log Data*.

3.2 Uninstallation and unsetup

This section describes the procedures for uninstalling PFM - Agent for Enterprise Applications and for canceling its setup.

3.2.1 Before uninstallation and unsetup

This section provides notes about uninstalling PFM - Agent for Enterprise Applications and canceling its setup.

(1) *OS user permission required for uninstallation*

When you uninstall PFM - Agent, make sure that you use an account that has the superuser permission.

(2) *Network*

Uninstalling a Performance Management program does not delete port numbers defined in the `services` file.

(3) *Programs*

If PFM - Base and PFM - Agent are both installed on the host, PFM - Base cannot be uninstalled unless you first uninstall PFM - Agent; uninstall PFM - Agent, and then uninstall PFM - Base. Similarly, if PFM - Manager and PFM - Agent are both installed on the same host, PFM - Manager cannot be uninstalled unless you first uninstall PFM - Agent; uninstall PFM - Agent, and then uninstall PFM - Manager.

(4) *Notes about services*

- Uninstalling PFM - Agent might not delete the service information that is displayed by the `jpctool service list (jpcctrl list)` command. For details about how to delete the service information, see the section on deleting services in the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

(5) *Other*

If you uninstall a Performance Management program from a host on which PFM - Web Console has been installed, close all windows on the browser before starting the uninstallation procedure.

3.2.2 Unsetup procedure

This subsection describes how to cancel the setup of PFM - Agent for Enterprise Applications.

(1) Canceling setup of an instance environment

To cancel setup of an instance environment, first verify the instance name and then delete the instance environment. You cancel an instance environment at the PFM - Agent host.

Use the `jpccconf inst list (jpcinslist)` command to verify the instance name, and then use the `jpccconf inst unsetup (jpcinsunsetup)` command to delete the existing instance environment.

To cancel setup of an instance environment:

1. Find the instance name.

Execute the `jpccconf inst list (jpcinslist)` command with the service key of PFM - Agent for Enterprise Applications specified.

```
jpccconf inst list -key EAP (jpcinslist agtm)
```

If the current instance name is `o246bci_SD5_00`, the command displays `o246bci_SD5_00`.

2. If a PFM - Agent service is running in the instance environment, stop the service.

For details about stopping services, see the chapter that describes starting and stopping services in the *Job Management Partner 1/Performance Management User's Guide*.

3. Delete the instance environment.

Execute the `jpccconf inst unsetup (jpcinsunsetup)` command with the service key and instance name of PFM - Agent for Enterprise Applications specified.

If the existing instance name is `o246bci_SD5_00`, enter the following command:

```
jpccconf inst unsetup -key EAP (jpcinsunsetup agtm) -inst o246bci_SD5_00
```

If the `jpccconf inst unsetup (jpcinsunsetup)` command is successful, the directories and service IDs created as the instance environment are deleted.

Note

Canceling an instance environment might not delete the service information that is displayed by the `jpctool service list (jpcctrl list)` command. For details about how to delete the service information, see the section on deleting services in the chapter that describes installation and setup in the *Job*

3.2.3 Uninstallation procedure

To uninstall PFM - Agent for Enterprise Applications:

1. At the host where PFM - Agent for Enterprise Applications is to be uninstalled, log on as a superuser or use the `su` command to change the user to a superuser.
2. Stop all Performance Management programs and services at the local host.

Display the service information to make sure that no service is running. For details about stopping services and displaying service information, see the chapter that describes startup and termination of Performance Management in the *Job Management Partner 1/Performance Management User's Guide*.

Stop all Performance Management programs and services that are running at the local host; this includes all services on both physical and logical hosts.

3. Execute the following command to start the Hitachi Program Product Installer:

```
/etc/hitachi_setup
```

The Hitachi Program Product Installer starts and displays the initial window.

4. In the initial window, enter `D`.
A list of programs that can be uninstalled is displayed.
5. Select the Performance Management program that you wish to uninstall and then enter `D`.

The selected program is uninstalled. To select a program, move the cursor to the desired program and then select it by pressing the space key.

6. When uninstallation is completed successfully, enter `Q`.
The initial window of the Hitachi Program Product Installer appears again.

3.3 Changing the PFM - Agent for Enterprise Applications system configuration

You must change the system configuration for PFM - Agent for Enterprise Applications whenever a change occurs in the system, such as a change in a monitored system's network configuration or a change in host names. This subsection describes how to change the system configuration for PFM - Agent for Enterprise Applications.

When a host name is changed, information about the host name of the SAP system running at that server is also changed. The setting subject to change is as follows:

- ASHOST

For details about how to change settings, see *3.4.3 Settings for updating an instance environment*. If a change is made to any other setting in the connection-target SAP system, also update the instance environment.

When you change the system configuration for PFM - Agent for Enterprise Applications, you must also change the settings for PFM - Manager and PFM - Web Console. For details about how to change the system configuration for Performance Management, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

3.4 Changing the PFM - Agent for Enterprise Applications operation method

It might be necessary to change the operating method for PFM - Agent for Enterprise Applications for a reason such as a change in the method of handling the collected operation monitoring data. This section describes how to change the operating method for PFM - Agent for Enterprise Applications. For details about how to change the operating method for the overall Performance Management system, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

3.4.1 Changing the performance data storage location

The performance data collected by PFM - Agent for Enterprise Applications is managed in the Store database of the Agent Store service of PFM - Agent for Enterprise Applications. This subsection describes how to change the storage location of performance data.

(1) Using the `jpccconf db define (jpcdbctrl config)` command to change settings

To change the data storage directories listed below for the performance data that is to be managed in the Store database, use the `jpccconf db define (jpcdbctrl config)` command. If you wish to save the performance data already in the Store database storage directory prior to the change, use the `-move` option of the `jpccconf db define (jpcdbctrl config)` command. For details about the `jpccconf db define (jpcdbctrl config)` command, see the manual *Job Management Partner 1/Performance Management Reference*.

- Storage directory
- Backup directory
- Export directory
- Partial backup directory[#]
- Import directory[#]

[#]: Supported only when Store version 2.0 is used.

The following table lists and describes the information that can be set by the `jpccconf db define (jpcdbctrl config)` command, such as option names and value ranges.

Table 3-8: Command settings for changing the performance data storage location

Description	Option name	Permitted value (Store version 1.0)	Permitted value (Store version 2.0)	Default value
Performance data creation directory	sd	1 to 127 bytes of full path name	1 to 214 bytes of full path name ^{#1}	<i>/opt/jp1pc/agtm/store/instance-name</i>
Performance data creation directory (for logical host operation)	sd	1 to 127 bytes of full path name	1 to 214 bytes of full path name ^{#1}	<i>environment-directory^{#2}/jp1pc/agtm/store/instance-name</i>
Performance data backup directory (full backup)	bd	1 to 127 bytes of full path name	1 to 211 bytes of full path name ^{#3}	<i>/opt/jp1pc/agtm/store/instance-name/backup</i>
Performance data backup directory (full backup during logical host operation)	bd	1 to 127 bytes of full path name	1 to 211 bytes of full path name ^{#3}	<i>environment-directory^{#2}/jp1pc/agtm/store/instance-name/backup</i>
Performance data backup directory (partial backup)	pbd	--	1 to 214 bytes of full path name ^{#1}	<i>/opt/jp1pc/agtm/store/instance-name/partial</i>
Performance data backup directory (partial backup during logical host operation)	pbd	--	1 to 214 bytes of full path name ^{#1}	<i>environment-directory^{#2}/jp1pc/agtm/store/instance-name/partial</i>
Maximum generation number when performance data is backed up	bs	1 to 9	1 to 9	5
Performance data export directory	dd	1 to 127 bytes of full path name	1 to 127 bytes of full path name	<i>/opt/jp1pc/agtm/store/instance-name/dump</i>
Performance data export directory (for logical host operation)	dd	1 to 127 bytes of full path name	1 to 127 bytes of full path name	<i>environment-directory^{#2}/jp1pc/agtm/store/instance-name/dump</i>
Performance data import directory	id	--	1 to 222 bytes of full path name ^{#4}	<i>/opt/jp1pc/agtm/store/instance-name/import</i>

Description	Option name	Permitted value (Store version 1.0)	Permitted value (Store version 2.0)	Default value
Performance data import directory (for logical host operation)	id	--	1 to 222 bytes of full path name ^{#4}	<i>environment-directory</i> ^{#2} / <i>jp1pc/agt</i> m/ <i>store/instance-name/import</i>

Legend:

--: Cannot be set

#1

If a relative path is set, the length of the specified directory path (absolute path) must not exceed 214 bytes.

#2

The environment directory is located on the shared disk that was specified when the logical host was created.

#3

If a relative path is set, the length of the specified directory path (absolute path) must not exceed 211 bytes.

#4

If a relative path is set, the length of the specified directory path (absolute path) must not exceed 222 bytes.

(2) Editing the *jpcsto.ini* file to change settings (for Store version 1.0 only)

If you are using Store version 1.0, you can directly edit *jpcsto.ini*.

(a) Settings in the *jpcsto.ini* file

The table below shows the settings in the *jpcsto.ini* file, such as the label names that can be edited and the permitted value ranges.

*Table 3-9: Settings for the performance data storage location ([Data Section] section in *jpcsto.ini*)*

Description	Label name	Permitted value(Store version 1.0) ^{#1}	Default value
Performance data creation directory	<i>Store Dir</i> ^{#2}	1 to 127 bytes of full path name	<i>/opt/jp1pc/agt</i> m/ <i>store/instance-name</i>

Description	Label name	Permitted value(Store version 1.0)#1	Default value
Performance data creation directory	Store Dir#2	1 to 127 bytes of full path name	<i>environment-directory</i> #3/ <i>jplpc/agtm/store/instance-name</i>
Performance data backup directory (full backup)	Backup Dir#2	1 to 127 bytes of full path name	<i>/opt/jplpc/agtm/store/instance-name/backup</i>
Performance data backup directory (full backup during logical host operation)	Backup Dir#2	1 to 127 bytes of full path name	<i>environment-directory</i> #3/ <i>jplpc/agtm/store/instance-name/backup</i>
Maximum generation number when performance data is backed up	Backup Save	1 to 9	5
Performance data export directory	Dump Dir#2	1 to 127 bytes of full path name	<i>/opt/jplpc/agtm/store/instance-name/dump</i>
Performance data export directory (for logical host operation)	Dump Dir#2	1 to 127 bytes of full path name	<i>environment-directory</i> #3/ <i>jplpc/agtm/store/instance-name/dump</i>

#1

- Specify all directory names as full path names.
- All alphanumeric characters, symbols, and the space are permitted, except for the following characters:

*i, , *, ?, ', ", <, >, |*

- If a specified value is invalid, the Agent Store service cannot be started.

#2

No duplication of directory names can be specified in Store Dir, Backup Dir, and Dump Dir.

#3

The environment directory is located on the shared disk that was specified when the logical host was created.

(b) Preparations before editing the jpcsto.ini file

- In order to change the Store database storage directory, you must first create the storage directory that is to be used.
- Once you have changed the Store database storage directory, the performance data that was collected previously is no longer available. If you need the previous performance data, the following procedure can be used to inherit it:
 1. Use the `jpctool db backup (jpcctrl backup)` command to make a backup of the performance data that is stored in the existing Store database.
 2. Change the Store database storage directory according to the procedure described in 3.4.1(2)(c) *Editing the jpcsto.ini file*.
 3. Use the `jpctool db restore (jpcresto)` command to restore the backup data into the new directory.

(c) Editing the jpcsto.ini file

To edit the `jpcsto.ini` file:

1. Stop the PFM - Agent services.
If PFM - Agent programs and services are running at the local host, stop all of them.
2. Use a program such as a text editor to open the `jpcsto.ini` file.
3. Make necessary changes (e.g., change the performance data storage directory).
Correct the shaded information shown below, as necessary.

```
      :  
[Data Section]  
Store Dir=  
Backup Dir=./backup  
Backup Save=5  
Dump Dir=./dump
```

Notes

- Do not enter any space characters at the beginning of a line or before or after an equal sign (=).
- A period (.) in a label value indicates the default storage directory for the Agent Store service's Store database (`/opt/jp1pc/agtms/store/`

instance-name). To change the storage directory, specify a path relative to this directory or the absolute path.

- To change the Store database storage location, you must have already created the directory that you specify here.
 - The `jpcsto.ini` file contains not only the database storage directory but also definition information. Make sure that you do not change any values other than in the [Data Section] section. If a value outside the [Data Section] section is changed, Performance Management might not function normally.
4. Save the `jpcsto.ini` file and then close it.
 5. Start the Performance Management programs and services.

Note

If you have used this procedure to change the Store database storage directory, the previous performance data still remains in the old directory. If you do not need these files, delete only the following files:

- All files whose extension is `.DB`
- All files whose extension is `.IDX`

3.4.2 Updating the Store version to 2.0

The two types of Store database storage formats are versions 1.0 and 2.0. For details about Store version 2.0, see the manual *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

Store version 2.0 is used by default only when you have configured a new instance in an environment of PFM - Base or PFM - Manager version 08-11 or later using PFM - Agent for Enterprise Applications version 09-00 or later. Otherwise, the Store version 1.0 format is used and you will have to use the setup command to update the Store version to 2.0.

If you need to restore Store version 1.0 for some reason, cancel the setup of Store version 2.0.

The following table shows whether Store version 2.0 is supported, depending on the installation conditions, and describes the operating procedure.

Table 3-10: Whether Store version 2.0 is supported and the operating procedure

Installation condition		Whether Store version 2.0 is supported	Store version 2.0 operating procedure
Version of the installed PFM - Base or PFM - Manager	PFM - Agent installation method		
08-00 or earlier	Overwrite installation	Not supported	Upgrade PFM - Base or PFM - Manager to version 08-11 and then execute the setup command.
	New installation		
08-11 or later	Overwrite installation	An existing instance is supported after setup	Execute the setup command.
		A new instance is supported	Use the <code>jpccconf inst setup (jpcinssetup)</code> command to set up when the instance is configured.
	New installation	Supported	Use the <code>jpccconf inst setup (jpcinssetup)</code> command to set up when the instance is configured.

(1) Setting up Store version 2.0

This subsection describes how to set up Store version 2.0 when you update the Store database.

1. Estimating the system resources and setting the retention period

Make sure that the system resources required for installing Store version 2.0 are appropriate for the execution environment. The types of required system resources are as follows:

- Disk capacity
- Number of files
- Number of files opened by each process

You use retention period settings to adjust these values. Set the retention period taking into account the resources available in the execution environment. For details about estimating the system resources, see *A. System Estimates*.

2. Setting directories

After you have updated your Store database to Store version 2.0, the Agent Store service might not start using the data storage directory settings for performance data that were set for Store version 1.0. For this reason, you must specify the directory settings again.

For details, see *3.4.1 Changing the performance data storage location*.

3. Executing the setup command

To update the Store version to 2.0, execute the `jpcconf db vrset -ver 2.0 (jpcdbctrl setup)` command. You must execute this command for each Agent instance.

For details about the `jpcconf db vrset -ver 2.0 (jpcdbctrl setup)` command, see the manual *Job Management Partner 1/Performance Management Reference*.

4. Setting the retention period

Set the retention period that was determined during the estimation process in step 1. Start the Agent Store service and use PFM - Web Console to specify the settings.

(2) Setup in a multi-instance environment

In a multi-instance environment, execute the `jpcconf inst setup(jpcinssetup)` command when you create a new instance using PFM - Manager, PFM - Base, and PFM - Agent version 08-11 or later.

(3) Canceling the setup of Store version 2.0

To cancel the setup of Store version 2.0, use the `jpcconf db vrset -ver 1.0 (jpcdbctrl unsetup)` command. When the setup of Store version 2.0 is canceled, all data in the Store database is initialized and the Store database is reset to Store version 1.0.

For details about the `jpcconf db vrset -ver 1.0 (jpcdbctrl unsetup)` command, see the manual *Job Management Partner 1/Performance Management Reference*.

(4) Notes

This subsection provides notes about updating.

(a) When updating from Store version 1.0 to Store version 2.0

When the Store database is updated from Store version 1.0 to 2.0, the retention period settings are inherited for records of the PI record type. However, for records of the PD record type, the default retention days value (which determines the number of records to be retained) is set to the default value for each record regardless of the previous settings, and the data that had been collected prior to the default retention days value is deleted.

For example, if 1,000 PD records whose collection interval is 3,600 seconds are set to be retained in Store version 1.0, about 42 days (1,000/24) worth of data is stored because 24 PD records are stored per day. If this Store database is updated to Store version 2.0 and the value 10 had been set as the default retention days value for PD

records, the data obtained more than 10 days ago will be deleted and will no longer be viewable.

Before you update the Store database to Store version 2.0, check the settings for the number of records to be retained for the PD record type. If more than the default retention days worth of data is set to be retained in Store version 2.0, use the `jpctool db dump (jpcctrl dump)` command to output the data from the database. For details about the default retention days in Store version 2.0, see *A.2(2)(b) Disk space requirements for Store database version 2.0*.

(b) When restoring Store version 1.0 from 2.0

If you cancel the setup of Store version 2.0, the data is initialized. Therefore, before you restore Store version 1.0, execute the `jpctool db dump (jpcctrl dump)` command to output the Store version 2.0 information.

3.4.3 Settings for updating an instance environment

This subsection describes how to update an instance environment.

You must repeat this procedure for each instance environment you wish to update.

Use the `jpcconf inst list (jpcinslist)` command to find the instance name; use the `jpcconf inst setup (jpcinssetup)` command to update the instance environment.

To update an instance environment:

1. Find the instance name.

Execute the `jpcconf inst list (jpcinslist)` command with the service key specified that indicates the PFM - Agent for Enterprise Applications running in the instance environment.

For example, to check the instance name of PFM - Agent for Enterprise Applications, execute the following command:

```
jpcconf inst list -key EAP (jpcinslist agtm)
```

If the specified instance name is `o246bci_SD5_00`, the command displays `o246bci_SD5_00`.

2. Check the information to be updated.

The table below lists and describes the instance environment information that can be updated.

Table 3-11: Instance information for PFM - Agent for Enterprise Applications

Item	Description	Permitted value	Default value
SID	ID of the SAP system that is to be monitored	Character string (up to 8 bytes)	Previous setting
SERVER	SAP instance name that is to be monitored (the SAP instance name that has a dialog service, and which can be verified by transaction code SM51)	Character string (up to 20 bytes)	Previous setting
ASHOST	Host name of the connection-target application server (the SAP local host name, which can be verified by transaction code SM51)	Character string (up to 100 bytes)	Previous setting
SYSNR	System number of the SAP system	Numeric characters (up to 2 bytes)	Previous setting
CLIENT	Client name to which the SAP user belongs (system number assigned to the connection-target dialog instance)	Numeric characters (up to 3 bytes)	Previous setting
USER	SAP user name [#]	Character string (up to 12 bytes)	Previous setting
EXTPWD	Whether an extended password is to be used to connect to the SAP system	Y or N <ul style="list-style-type: none"> Y: Use an extended password. N: Do not use an extended password. 	Previous setting
PASSWD	Password of the SAP user	<ul style="list-style-type: none"> When an extended password is used: Up to 40 single-byte characters When an extended password is not used: Up to 8 single-byte characters 	Previous setting (the value is not displayed)
DELAYCONNECT	Timing of the connection to the SAP system	Y or N <ul style="list-style-type: none"> Y: Connect to the SAP system only when performance data is collected. The Agent Collector service is started regardless of the operating status of the SAP system at the time of connection establishment. N: Connect to the SAP system when the Agent Collector service starts. The Agent Collector service is not started if the SAP system is not active at the time of connection establishment. 	Previous setting

#

For details about SAP users and passwords, see *3.1.4(3) Creating the SAP users that are to be used by PFM - Agent for Enterprise Applications*.

3. If the PFM - Agent for Enterprise Applications service is active for the instance environment that is to be updated, stop it.

If the service is still active for the instance environment that is to be updated when you execute the `jpcconf inst setup (jpcinssetup)` command, a confirmation message is displayed to enable you to stop the service. If you stop the service, update processing resumes; if you do not stop the service, update processing is canceled.

4. Execute the `jpcconf inst setup (jpcinssetup)` command, in which you have specified the service key and instance name of the PFM - Agent for Enterprise Applications for the instance environment that you wish to update.

For example, if you are updating the instance environment for the PFM - Agent for Enterprise Applications with instance name `o246bci_SD5_00`, execute the command as follows:

```
jpcconf inst setup -key EAP (jpcinssetup agtm) -inst  
o246bci_SD5_00
```

5. Update the instance information for SAP system.

Enter the information shown in Table 3-11 in accordance with the command's instructions. The current settings are displayed (except for the value of `passwd`). To use a displayed value, press the **Enter** key. When all entries are completed, the instance environment is updated.

6. Restart the services in the updated instance environment.

For details on how to start and stop services, see the chapter that describes starting and stopping services in the *Job Management Partner 1/Performance Management User's Guide*. For details about the commands, see the chapter that describes commands in the manual *Job Management Partner 1/Performance Management Reference*.

3.5 Backup and restoration

This section describes backing up and restoring PFM - Agent for Enterprise Applications.

To protect against damage to the system caused by a failure, we recommend that you periodically back up the settings for PFM - Agent for Enterprise Applications. We recommend that you also back up the settings whenever a change has been made to the system, such as when PFM - Agent for Enterprise Applications is set up.

For details about backing up and restoring the entire Performance Management system, see the chapter that describes backup and restoration in the *Job Management Partner 1/Performance Management User's Guide*.

3.5.1 Backup

You can make a backup using any method, such as by copying files. Perform the backup operation while the services of PFM - Agent for Enterprise Applications are stopped.

The following table lists the settings files for PFM - Agent for Enterprise Applications that must be included in a backup.

Table 3-12: Files to be backed up for PFM - Agent for Enterprise Applications

File name	Description
/opt/jplpc/agtm/agent/*.ini	Settings file for the Agent Collector service
/opt/jplpc/agtm/store/*.ini	Settings file for the Agent Store service
jr3slget.ini (default name). The file path is the current directory for command execution or the file path specified in the -cnf option.	Environment parameters file for the system log
jr3alget.ini (default name). The file path is the current directory for command execution or the file path specified in the -cnf option.	Environment parameters file for CCMS alerts

Note:

When you back up PFM - Agent for Enterprise Applications, you must manage the environment's product version numbers. For details about product version numbers, see the applicable Release Notes.

3.5.2 Restoration

To restore the settings for PFM - Agent for Enterprise Applications, make sure that the prerequisites listed below are satisfied and then copy the backup files to their original

locations. The settings files on the host will be overwritten by the contents of the backup settings files.

Prerequisites

- PFM - Agent for Enterprise Applications has already been installed.
- All services of PFM - Agent for Enterprise Applications have stopped.

Notes

- To restore the settings for PFM - Agent for Enterprise Applications, the product version numbers must match between the environment from which the backup was acquired and the environment in which the backup is restored. For details about the product version numbers, see the applicable Release Notes. The following examples show when the settings for PFM - Agent for Enterprise Applications can and cannot be restored.

Example of when PFM - Agent for Enterprise Applications settings can be restored:

- The settings backed up by PFM - Agent for Enterprise Applications 09-00 are restored to PFM - Agent for Enterprise Applications 09-00.

Examples of when PFM - Agent for Enterprise Applications settings cannot be restored:

- The settings backed up by PFM - Agent for Enterprise Applications 08-00 are restored to PFM - Agent for Enterprise Applications 09-00.
- The settings backed up by PFM - Agent for Enterprise Applications 09-00 are restored to PFM - Agent for Enterprise Applications 09-00-04.
- Because the SAP system's system log and the previous CCMS alert extraction times are managed by PFM - Agent for Enterprise Applications, we recommend that you clear the following information:

```
/opt/jp1pc/agtm/agent/instance-name/log/jr3slget.lasttime  
or /opt/jp1pc/agtm/agent/instance-name/log/  
jr3alget.lasttime
```

If you are using a logical host, specify the following directory as the installation directory:

```
environment-directory/jp1pc
```

If you use command execution, include the following file, which is located in the directory specified in the WORKDIR label in the COMMAND section in the environment parameters file:

```
jr3slget.lasttime or jr3alget.lasttime
```

3.6 Settings for using a Web browser to reference manuals

You can copy the Performance Management manuals from the manual CD-ROM provided with the program product to the host where PFM - Web Console is installed. You can then use a Web browser to reference the manuals. If you are running PFM - Web Console in a cluster environment, copy the manuals to the physical hosts of both executing and standby systems.

3.6.1 Settings procedures

(1) When referencing manuals from Help of PFM - Web Console

To reference manuals from Help of PFM - Web Console:

1. Register PFM - Agent into PFM - Web Console according to the PFM - Web Console setup procedure (perform additional setup of PFM - Agent).
2. On the host where PFM - Web Console is installed, create a directory into which you can copy manuals:

```
/opt/jp1pcwebcon/doc/ja/xxxx
```

For *xxxx*, specify the PFM - Agent help ID. For details about the help ID, see *C. List of Identifiers*.

3. Copy the following files and directories from the manual CD-ROM in to the directory you created in step 2:

- For HTML manuals

All HTML files and `FIGURE` folders under `/CD-ROM-mount-point/MAN/3020/manual-number` (such as `03004A0D`)

- For PDF manuals

PDF files under `/CD-ROM-mount-point/MAN/3020/manual-number` (such as `03004A0D`)

When you copy files, make sure that the PDF files or `index.htm` files are placed directly under the created directory for the HTML manuals or PDF manuals, respectively. For details about how to copy manual files, see `readme.txt` on the manual CD-ROM.

4. Restart PFM - Web Console.

(2) When referencing manuals from the hard disk of the computer being used

Use `setup.exe` on the CD-ROM to install the manuals or directly copy the HTML, PDF, and GIF files to a desired directory. For HTML manuals, set the directory structure as follows:

html (*contains HTML and PDF files*)
| -FIGURE (*contains GIF files*)

3.6.2 Browsing procedure

To view a manual:

1. In the Main window of PFM - Web Console, click the **Help** menu in the menu bar to display the Help selection window.
2. Click either a manual name or **PDF** that follows a manual name.

Clicking a manual name displays the HTML version of the manual; clicking **PDF** displays the manual in PDF format.

Chapter

4. Operation in a Cluster System

This chapter describes the installation and setup of PFM - Agent for Enterprise Applications in a cluster system and the operating procedures when PFM - Agent for Enterprise Applications is operated in a cluster system.

- 4.1 Overview of cluster systems
- 4.2 Processing at failover
- 4.3 Installation and setup
- 4.4 Uninstallation and Unsetup
- 4.5 Changing the system configuration of PFM - Agent for Enterprise Applications
- 4.6 Changing the PFM - Agent for Enterprise Applications operation method

4.1 Overview of cluster systems

A cluster system links multiple server systems so that they can be operated as a single system. An SAP system, which is a program monitored by PFM - Agent for Enterprise Applications, can be operated as follows in a cluster system:

- SAP system with a high-availability (HA) cluster system configuration

This section describes the configuration in which PFM - Agent for Enterprise Applications is applied to a cluster system. For an overview of cluster systems and details about the system configuration for operating Performance Management in a cluster system, see the chapter that describes system construction and operations in a cluster system in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

In this chapter, the term *cluster system* refers to an HA cluster system.

4.1.1 HA cluster systems

(1) SAP system configuration in an HA cluster system

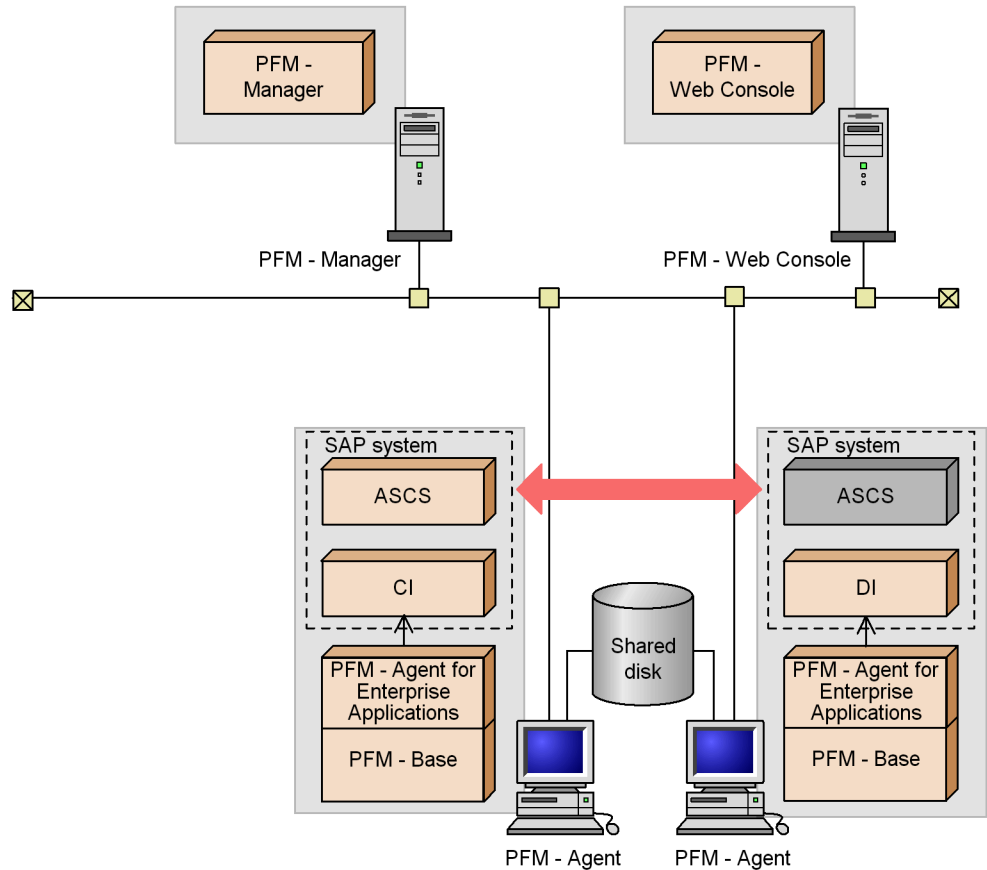
When an SAP system operates in an HA cluster system, failover is available in the event of a failure, thereby improving availability.

In the case of an SAP system operating in an HA cluster system, a typical environment enables both executing and standby nodes to execute the instances of the SAP system and the various data for the SAP system (such as data, configuration, and log files) to be stored on a shared disk. In general, a solution product that enables the SAP system to be controlled from cluster software is used. The configuration and operating methods employed by the SAP system in the cluster system might differ depending on the local system.

(2) Configuration of PFM - Agent for Enterprise Applications in an HA cluster system (for SAP NetWeaver 7.0 or later)

PFM - Agent for Enterprise Applications can be operated in an HA cluster system for the purpose of monitoring an SAP system in a cluster configuration. To operate PFM - Agent for Enterprise Applications in an HA cluster system, PFM - Agent for Enterprise Applications must be configured as shown below.

Figure 4-1: Example of the configuration of PFM - Agent for Enterprise Applications in an HA cluster system (for SAP NetWeaver 7.0 or later)



Legend:

ASCS : ABAP Central Services instance

CI : Central instance

DI : Dialog instance

↔ : Failover

→ : Monitoring

As shown in Figure 4-1, PFM - Agent for Enterprise Applications operates in a physical host environment and monitors the SAP system. Therefore, if a failure results in failover of ASCS in the SAP system, PFM - Agent for Enterprise Applications continues monitoring CI or DI in the SAP system in the physical host environment

without failing over.

Necessary information, such as definition information, performance information, system log information, and CCMS alert information extracted to output files, is stored in both executing and standby systems and not shared between the systems.

You can execute multiple instances of PFM - Agent for Enterprise Applications at a single node. If there are multiple SAP systems with a cluster configuration (active-active configuration), you must configure an instance of PFM - Agent for Enterprise Applications and execute it for each CI or DI of the SAP system in the physical host environment. Each PFM - Agent for Enterprise Applications instance runs independently.

Notes

- To monitor the SAP system, you must set up an instance environment for each physical host that has a central instance or dialog instance with the dialog service.
- You can use any physical host instance to monitor performance data with the following record IDs, because this performance data is recorded for each SAP system:
 - PI_BTCP
 - PD_ALMX
 - PD_SRV
 - PI_UMP (depends on the performance monitor that is set)

If monitoring is performed with a single physical host, a failure on that host means monitoring can no longer continue. Therefore, we recommend that you use multiple physical hosts to perform monitoring concurrently.

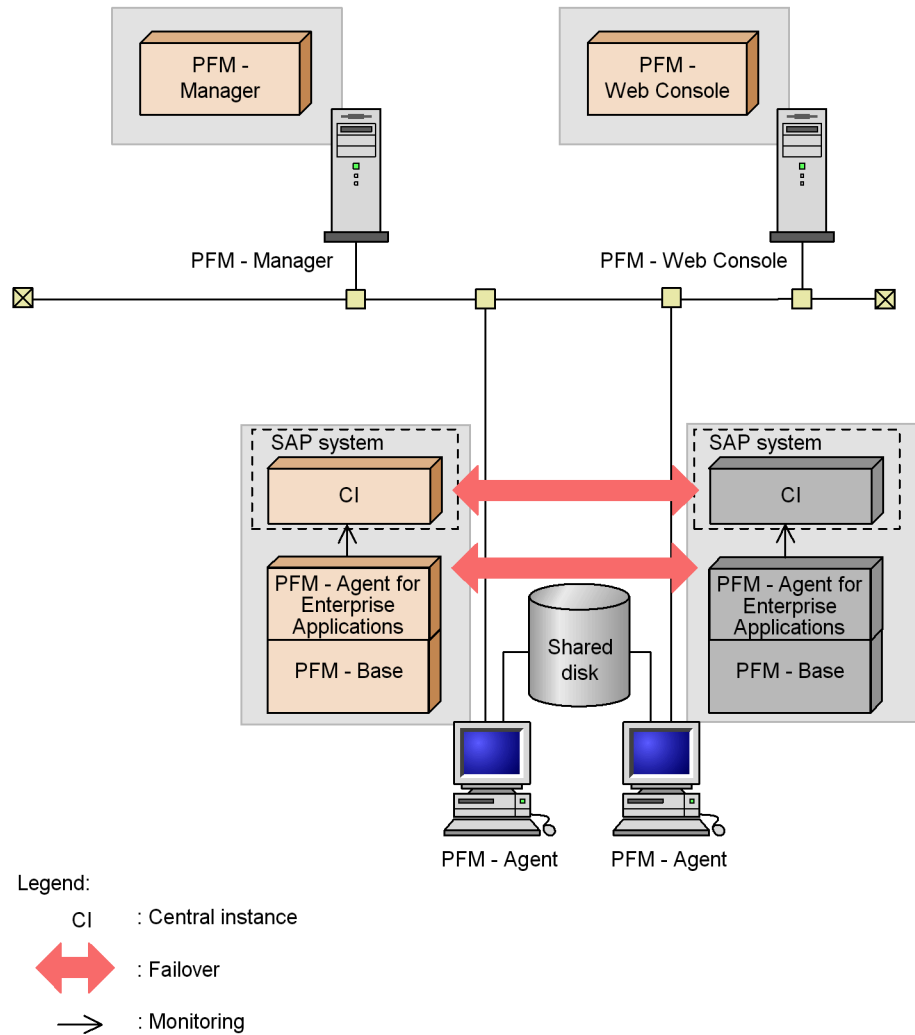
However, when multiple physical hosts are used to perform monitoring concurrently, multiple alarms might occur for a single event. If this creates a problem, bind the alarm tables to a single physical host and, if a cluster failover occurs, switch the alarm table bindings from this physical host to the physical host where processing is being transferred.

- If the SAP system employs an ASCS instance configuration, no performance data can be acquired for the ENQUEUE_SERVER_QUEUE_LENGTH field in the PI_ENQ record, because this field does not exist in the connection-target dialog instance. As a result, command messages as well as warning messages (KAVF14173-W) are output to the Windows event log. These warning messages are always output regardless of whether they are monitored.

(3) Configuration of PFM - Agent for Enterprise Applications in an HA cluster system (for SAP NetWeaver 2004 or earlier)

PFM - Agent for Enterprise Applications can be operated in an HA cluster system for the purpose of monitoring an SAP system with a cluster configuration. To operate PFM - Agent for Enterprise Applications in an HA cluster system, PFM - Agent for Enterprise Applications must be configured as shown below.

Figure 4-2: Example of the configuration of PFM - Agent for Enterprise Applications in an HA cluster system (for SAP NetWeaver 2004 or earlier)



As shown in Figure 4-2, PFM - Agent for Enterprise Applications operates in the same

4. Operation in a Cluster System

logical host environment as the SAP system with the cluster configuration and monitors the SAP system. In the event of a failure, failover occurs on PFM - Agent for Enterprise Applications when the SAP system fails over, so that monitoring can continue.

A shared disk is used to store necessary information, such as definition information, performance information, system log information, and CCMS alert information extracted to output files; this information is inherited during failover. If a single logical host contains multiple Performance Management programs, each uses the same shared directory.

You can execute multiple instances of PFM - Agent for Enterprise Applications at a single node. If there are multiple SAP systems with a cluster configuration (active-active configuration), you must execute PFM - Agent for Enterprise Applications in each logical host environment. Each PFM - Agent for Enterprise Applications can run independently and fail-over separately.

4.2 Processing at failover

If a failure occurs on the executing host, control transfers to the standby host.

This section describes the failover processing in the event of a failure on PFM - Agent for Enterprise Applications. It also describes the effects of a PFM - Manager failure on PFM - Agent for Enterprise Applications.

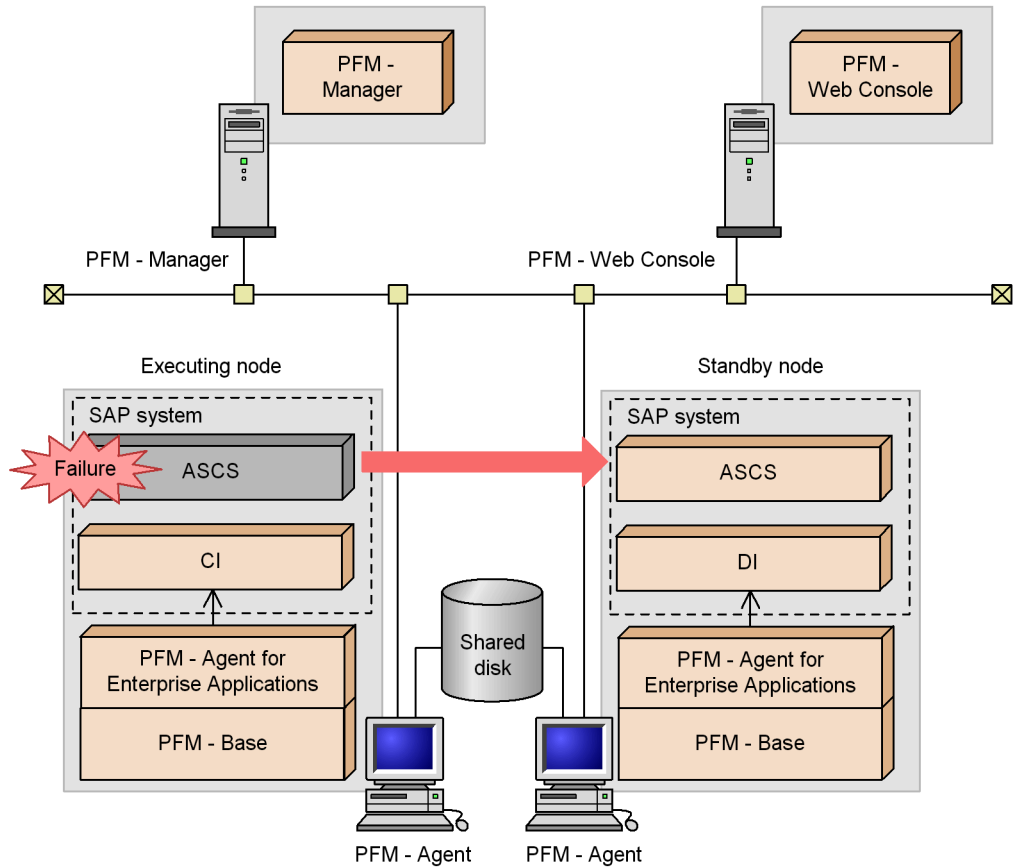
4.2.1 Failover when an error occurs on a PFM - Agent host

The processing when a failover occurs on a PFM - Agent host that is running PFM - Agent for Enterprise Applications depends on the version of the SAP system.

(1) Processing when failover occurs on a PFM - Agent host (for SAP NetWeaver 7.0 or later)

The following figure shows the processing when failover occurs on a PFM - Agent host for SAP NetWeaver 7.0 or later.

Figure 4-3: Processing when failover occurs on a PFM - Agent host (for SAP NetWeaver 7.0 or later)




Legend:

ASCS : ABAP Central Services instance

CI : Central instance

DI : Dialog instance

 : Failover

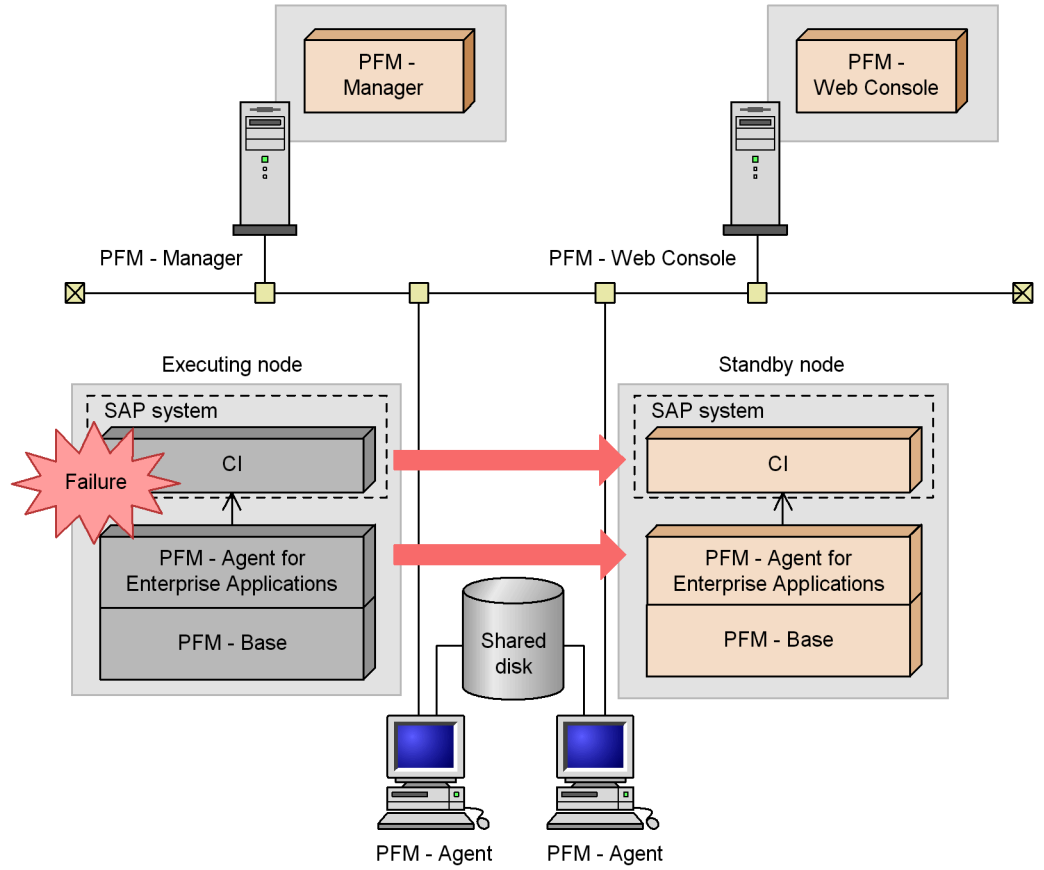
 : Monitoring

PFM - Agent for Enterprise Applications operates in the physical host environment and monitors the SAP system. Therefore, if a failure results in failover of the SAP system, PFM - Agent for Enterprise Applications continues monitoring without failing over.

(2) Processing when failover occurs on a PFM - Agent host (for SAP NetWeaver 2004 or earlier)

The following figure shows the processing when failover occurs on a PFM - Agent host for SAP NetWeaver 2004 or earlier.

Figure 4-4: Processing when failover occurs on a PFM - Agent host (for SAP NetWeaver 2004 or earlier)



- Legend:
- CI : Central instance
 - ➔ : Failover
 - ➔ : Monitoring

If PFM - Web Console is used while PFM - Agent for Enterprise Applications is engaged in failover processing, the message `There was no answer (-6)` is

displayed. When this message is displayed, wait until failover processing is completed.

Once PFM - Agent for Enterprise Applications has failed over, an attempt to use PFM - Web Console connects you to the PFM - Agent for Enterprise Applications that has started at the target node, so that you can perform operations.

4.2.2 Effects of PFM - Manager failure

A shutdown of PFM - Manager affects the entire Performance Management system.

PFM - Manager provides centralized management of the agent information for PFM - Agent for Enterprise Applications that is running at all the nodes. It also controls alarm event notifications when thresholds are exceeded during performance monitoring by PFM - Agent for Enterprise Applications, as well as execution of actions based on alarm events. Therefore, when PFM - Manager is shut down, the Performance Management system is affected as described in the following table.

Table 4-1: Effects of PFM - Manager shutdown on PFM - Agent for Enterprise Applications

Program	Effects	Action
PFM - Agent for Enterprise Applications	If PFM - Manager is shut down while PFM - Agent for Enterprise Applications is running, the following occurs: <ul style="list-style-type: none"> • Collection of performance data continues. • Because alarm events cannot be reported to PFM - Manager, the alarm events for each alarm definition are saved and notification for each event is reattempted until PFM - Manager starts. When the number of saved alarm events exceeds 3, the oldest alarm event is overwritten. If PFM - Agent for Enterprise Applications shuts down, the saved alarm events are deleted. • Notifications of alarm status already sent to PFM - Manager are reset when PFM - Manager restarts. Alarm statuses are refreshed once PFM - Manager has checked the status of PFM - Agent for Enterprise Applications. • An attempt to shut down PFM - Agent for Enterprise Applications takes time because notification of this event cannot be sent to PFM - Manager. 	Start PFM - Manager. An active PFM - Agent for Enterprise Applications can continue to operate. Because alarms might not be reported as expected, after PFM - Manager has been recovered, check the <code>KAVE00024-I</code> message that has been output to PFM - Agent's common message log.

You should evaluate your operating procedures, taking into account the effects of a PFM - Manager shutdown. Apart from system crashes, events such as a configuration change or system maintenance might require shutdown of PFM - Manager. You should shut down for maintenance purposes only when the shutdown will have the least effects on operations.

4.3 Installation and setup

This section describes the procedures for constructing and setting up an environment for PFM - Agent for Enterprise Applications in a cluster system.

For details about the procedures for constructing and setting up an environment for PFM - Manager, see the chapter that describes construction and operation in a cluster system in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

4.3.1 In SAP NetWeaver 7.0 or later (in Windows)

(1) *Before installation*

This subsection describes the prerequisites and required information for starting installation and setup.

(a) Prerequisites

To use PFM - Agent for Enterprise Applications in a cluster system, the following prerequisites must be satisfied.

■ Cluster system

Make sure that the following condition is satisfied:

- The cluster system is controlled by cluster software.

Notes

- If a message box is displayed for an application error in the Dr. Watson log, failover might fail. In such a case, you must suppress the error notification that is made with this message box. For details about the suppression procedure, see the OS documentation. Note that suppression of an error notification might have adverse effects on information acquisition in the event of application errors.
- In Windows Server 2003 and Windows Server 2008, a dialog box for reporting an error to Microsoft is displayed when an application error occurs. Because this dialog box might cause failover to fail, reporting of the error must be suppressed. For details about the suppression procedure, see the OS documentation.

■ Physical host names

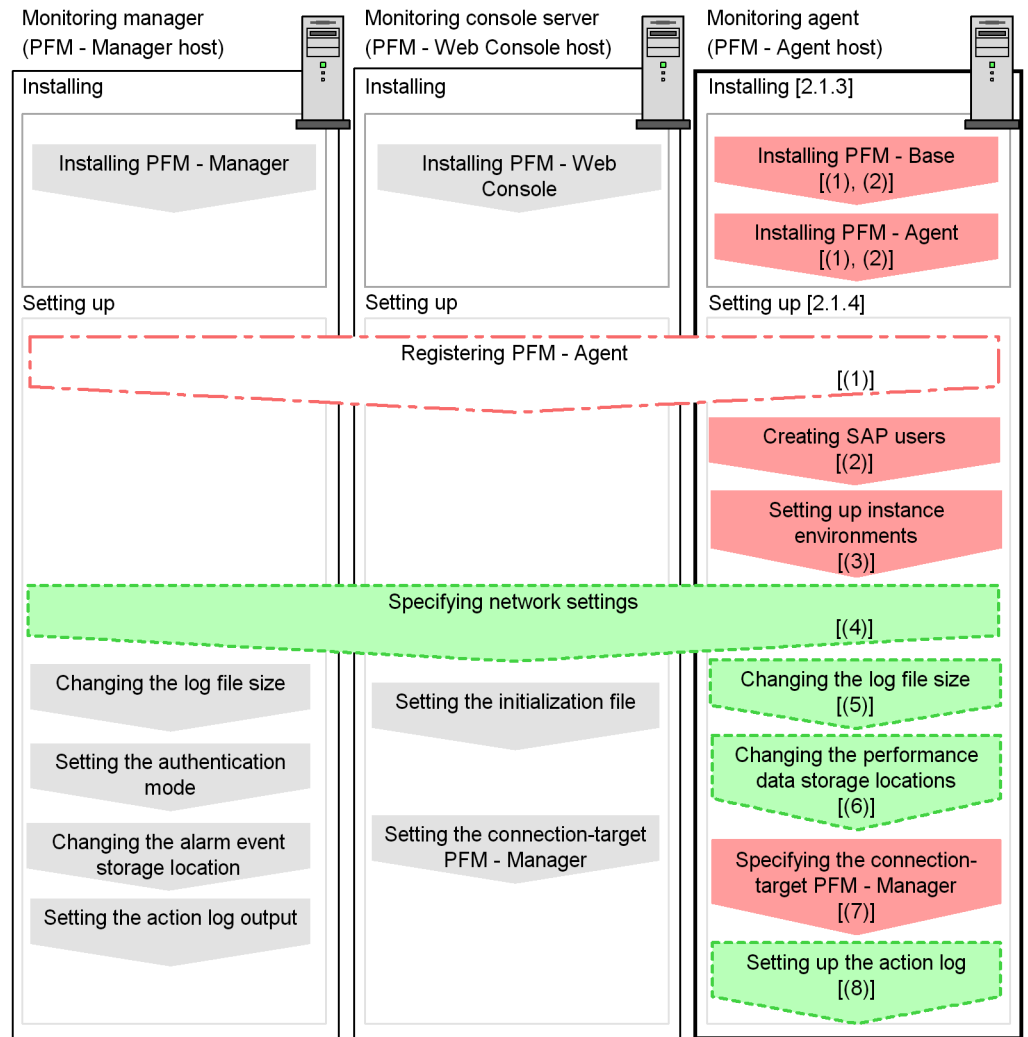
Make sure that the following condition is satisfied:





- Each physical host name must be unique in the system.

(2) Flow of tasks from installation to starting operation

The following figure shows the flow of tasks for installing and setting up PFM - Agent for Enterprise Applications.

Figure 4-5: Flow of tasks for installation and setup



- Legend:
-  : Required setup item
 -  : Setup item that might be required
 -  : Optional setup item
 -  : Item described in the *System Configuration and User's Guide*
 - [] : Section to reference

For details about how to install and set up PFM - Manager and PFM - Web Console,

see the chapter that describes installation and setup in the *Job Management Partner 1/ Performance Management Planning and Configuration Guide*.

(3) Installation

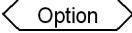
Install PFM - Agent for Enterprise Applications on both executing and standby nodes.

The installation target is the local disk. Do not install PFM - Agent for Enterprise Applications on a shared disk.

The installation procedure is the same as for a non-cluster system. For details about the installation procedure, see *2.1.3 Installation procedure*.

(4) Setup

This subsection describes the setup required in order to operate PFM - Agent for Enterprise Applications using SAP NetWeaver 7.0 or later.

 indicates a setup item that is required depending on the environment or an optional setup item for changing default settings.

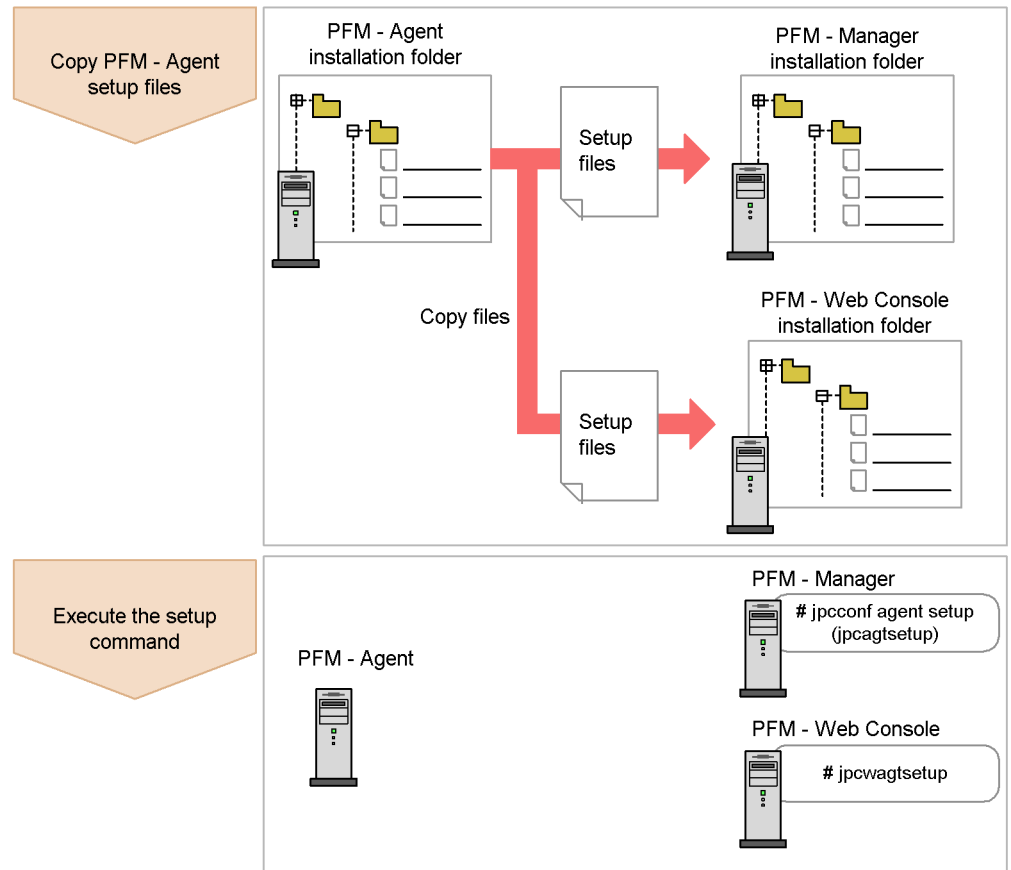
(a) Registering PFM - Agent for Enterprise Applications

To achieve central management of PFM - Agent using PFM - Manager and PFM - Web Console, you must register PFM - Agent for Enterprise Applications into PFM - Manager and PFM - Web Console.

If the version of PFM - Manager is 09-00 or later, PFM - Agent is registered automatically, in which case there is no need to perform the procedure described here. However, any data model version of PFM - Agent that is not included in the Release Notes for PFM - Manager must be registered manually. For details about the data model version of PFM - Agent for Enterprise Applications, see *1. Version Compatibility*.

The following shows the procedure for registering a PFM - Agent.

Figure 4-6: Procedure for registering a PFM - Agent



Notes

- Register PFM - Agent before you set up instance environments.
- If you are adding the same version of PFM - Agent for Enterprise Applications to a Performance Management system in which information about PFM - Agent for Enterprise Applications has already been registered, there is no need to register the PFM - Agents.
- If you install a different version of PFM - Agent for Enterprise Applications on a separate host, set up the old version first and then the new version.
- If you have installed PFM - Agent on the same host as PFM - Manager, the `jpcconf agent setup (jpcagtsetup)` command executes automatically and the message `KAVE05908-I New agent setup`

(*Pfm-Agent-service-key*) ended successfully. (*version=version*) is output to the common message log. Check the result; if the command did not execute correctly, re-execute it. For details about executing commands, see the chapter that describes commands in the manual *Job Management Partner 1/Performance Management Reference*.

■ Copying the setup files for PFM - Agent for Enterprise Applications

Copy the setup files from the host where PFM - Agent for Enterprise Applications was installed to the host where PFM - Manager and PFM - Web Console were installed.

To copy the setup files:

1. Stop PFM - Web Console if it is running.
2. Copy the PFM - Agent setup files in the binary mode.

The table below shows the source and target locations of the files to be copied.

Table 4-2: Setup files to be copied

Setup files for PFM - Agent	Target		
	PFM program name	OS	Target folder or directory
<i>installation-folder\setup\jpcagtmw.EXE</i>	PFM - Manager	Windows	<i>PFM-Manager-installation-folder\setup</i>
<i>installation-folder\setup\jpcagtmu.Z</i>		UNIX	<i>/opt/jp1pc/setup/</i>
<i>installation-folder\setup\jpcagtmw.EXE</i>	PFM - Web Console	Windows	<i>PFM-Web-Console-installation-folder\setup</i>
<i>installation-folder\setup\jpcagtmu.Z</i>		UNIX	<i>/opt/jp1pcwebcon/setup/</i>

■ Executing the setup command at the PFM - Manager host

To use PFM - Manager to set up PFM - Agent for Enterprise Applications, execute the following command:

```
jpcconf agent setup -key EAP (jpcagtsetup agtm)
```

Note

An error might occur if the `jpcconf agent setup (jpcagtsetup)` command is executed at a local host where Performance Management programs and services have not stopped completely. If an error occurs, check that all Performance Management programs and services have stopped completely and then re-execute the `jpcconf agent setup (jpcagtsetup)` command.

After completing this step, you can delete the PFM - Agent setup files from the PFM - Manager host.

■ Executing the setup command at the PFM - Web Console host

To use PFM - Web Console to set up PFM - Agent for Enterprise Applications, execute the following command:

```
jpcwagtsetup
```

After completing this step, you can delete the PFM - Agent setup files from the PFM - Web Console host.

(b) Creating the SAP users that are to be used by PFM - Agent for Enterprise Applications

To collect performance information, PFM - Agent for Enterprise Applications uses RFC (communication protocol of SAP AG) to execute the external management interfaces defined in the SAP system. Therefore, you must prepare in advance the SAP system users who are to be used by PFM - Agent for Enterprise Applications.

This subsection describes the user types, passwords, and authorizations for the SAP users who are created in the SAP system.

■ User types

The following types of SAP users can be used by PFM - Agent for Enterprise Applications:

- Dialog
- System
- Communication
- Service

■ Characters permitted for passwords

Define passwords for the SAP users. A password can consist of single-byte numeric characters (from 0 to 9), single-byte alphabetic characters (from a to z, A to Z), and the following single-byte symbols:

```
!, @, $, %, &, /, (, ), =, ?, ', `*, +, ~, #, -, _., :, {, [, ], }, <, >, |
```

■ Required authorizations

You must set the following authorizations (authorization objects) for the users:

- Authorizations required for a user to establish RFC connection with function modules (S_RFC)
- Authorizations required in order to use external management interfaces

(S_XMI_PROD)

As the value of each authorization, assign a value shown in the tables below or use the built-in configurations (S_RFC_ALL and S_XMI_ADMIN) that specify an asterisk (*) for all items.

Table 4-3: Authorizations required for a user to establish RFC connection with function modules (S_RFC)

Authorization	Description	Value
RFC_TYPE	Type of RFC object to be protected	FUGR (function group)
RFC_NAME	RFC name to be protected	*
ACTVT	Activity	16 (execution)

Table 4-4: Authorizations required in order to use external management interfaces (S_XMI_PROD)

Authorization	Description	Value
EXTCOMPANY	Company name of the external management tool	HITACHI
EXTPRODUCT	Program name of the external management tool	JP1
INTERFACE	Interface ID	*

(c) Setting up instance environments

You must set instance information for each SAP system that is to be monitored by PFM - Agent for Enterprise Applications. You perform the instance information setting at the PFM - Agent host.

The table below lists and describes the instance information items that are to be specified. Check this information before you start the setup procedure. For details about the instance information for an SAP system, see the SAP system documentation.

Table 4-5: Instance information for PFM - Agent for Enterprise Applications

Item	Description	Permitted value	Default value
SID	ID of the SAP system that is to be monitored	Character string (up to 8 bytes)	--
SERVER	SAP instance name that is to be monitored (the SAP instance name that has a dialog service, and which can be verified by transaction code SM51)	Character string (up to 20 bytes)	Instance name specified in <code>-inst</code> in the <code>jpccconf inst setup</code> (<code>jpccinssetup</code>) command

Item	Description	Permitted value	Default value
ASHOST	Host name of the connection-target application server (the SAP local host, which can be verified by transaction code SM51)	Character string (up to 100 bytes)	Local host name
SYSNR	System number of the SAP system	Numeric characters (up to 2 bytes)	00
CLIENT	Name of client to which the SAP user belongs (system number assigned to the connection-target dialog instance)	Numeric characters (up to 3 bytes)	000
USER	SAP user name	Character string (up to 12 bytes)	--
EXTPWD	Whether to use an extended password to connect to the SAP system	Y or N <ul style="list-style-type: none"> Y: Use an extended password. N: Do not use an extended password. 	N
PASSWD	Password of the SAP user	<ul style="list-style-type: none"> When an extended password is used: 1 to 40 single-byte characters When an extended password is not used: 1 to 8 single-byte characters 	--
DELAYCO NNECT	Timing of the connection to the SAP system	Y or N <ul style="list-style-type: none"> Y: Connect to the SAP system only when performance data is collected. The Agent Collector service is started regardless of the operating status of the SAP system at the time of connection establishment. N: Connect to the SAP system when the Agent Collector service starts. The Agent Collector service is not started if the SAP system is not active at the time of connection establishment. 	N
Store Version [#]	Store version to be used. For details about the Store version, see <i>2.4.2 Updating the Store version to 2.0.</i>	{1.0 2.0}	2.0

Legend:

--: None

#

This setting is required when the version of PFM - Agent for Enterprise Applications is 09-00 or later, and the version of PFM - Base or PFM - Manager on the same host is 08-11 or later, and you are setting up an instance environment for the first time.

Note

- If no instance environment has been set up, the PFM - Agent for Enterprise Applications service cannot be started.

You use the `jpccconf inst setup (jpcinssetup)` command to construct an instance environment.

To construct an instance environment:

1. Execute the `jpccconf inst setup (jpcinssetup)` command with the service key and instance name specified.

For example, to construct an instance environment for the instance named `o246bci_SD5_00` for PFM - Agent for Enterprise Applications, execute the following command:

```
jpccconf inst setup -key EAP -inst o246bci_SD5_00  
(jpcinssetup agtm -inst o246bci_SD5_00)
```

Although you can use any instance name in PFM - Agent for Enterprise Applications, to simplify management we recommend that you use an instance name that identifies the SAP system that is to be monitored. Normally, a name in the format *host-name_SAP-system-ID_system-number* is assigned to an instance for an SAP system.

2. Specify instance information for the SAP system.

Enter the information shown in Table 4-5 *Instance information for PFM - Agent for Enterprise Applications*, in accordance with the command's instructions. You cannot omit any requested items. To use a displayed value (which is the default) press the **Enter** key.

Once you have entered all items, the instance environment is constructed. The following describes constructed instance environments:

- Organization of folders for instance environments

Instance environments are constructed in the following folder:

- When running a physical host: *installation-folder*\agtm

The following table shows the organization of the folders for instance environments.

Table 4-6: Organization of folders for instance environments

Folder and file names		Description	
agent	<i>instance-name</i>	jpcagt.ini	Agent Collector service startup initialization file
		jpcagt.ini.model#	Model file for the Agent Collector service startup initialization file
		jr3alget.ini	Environment parameters file for CCMS Alert Monitor Command (PD_ALMX) records
		jr3slget.ini	Environment parameters file for System Log Monitor Command (PD_SLMX) records
		log	Storage folder for log files
store	<i>instance-name</i>	jpcsto.ini	Agent Store service startup initialization file
		jpcsto.ini.model#	Model file for the Agent Store service startup initialization file
		*.DAT	Data model definition file
		dump	Export folder
		backup	Backup folder
		import	Import folder (for Store version 2.0)
		log	Storage folder for log files
		partial	Partial backup folder (for Store version 2.0)
		STPD	Performance data storage folder for the PD record type (for Store version 2.0)
		STPI	Performance data storage folder for the PI record type (for Store version 2.0)
STPL	Performance data storage folder for the PL record type (for Store version 2.0)		

#

You can use this file to restore the settings that were in effect before the instance environment was constructed.

■ Service ID for an instance environment

The service ID for an instance environment is a character string that consists of a product ID, function ID, instance number, instance name, and host name. For example, service ID MA1o246bci_SD5_00 [host01] represents the following

instance environment:

- Product ID: M
- Function ID: A
- Instance number: 1
- Instance name: o246bci_SD5_00
- Host name: host1

For details about the service ID, see the appendix in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

■ Windows service name for instance environments

The following are the Windows service names for instance environments:

- Agent Collector service: PFM - Agent for R/3 *instance-name*
- Agent Store service: PFM - Agent Store for R/3 *instance-name*

For details about the Windows service names, see the appendix in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

(d) Specifying network settings 

You must specify network settings only when you change the network configuration where Performance Management is used.

You can set the following two network settings items:

■ IP addresses

Set this information to use Performance Management in a network that is connected to multiple LANs. To set multiple IP addresses, define the host names and IP addresses in the `jpchosts` file. Make sure that the settings in the `jpchosts` file are consistent throughout the entire Performance Management system.

For details, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

■ Port numbers

You can set the port numbers used by Performance Management. To avoid confusion during operation, make sure that the specified port numbers and service names are consistent throughout the entire Performance Management system.

For details about setting port numbers, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning*

and Configuration Guide.

(e) Changing the log file size Option

Performance Management's operating status is output to a log file unique to Performance Management. This log is called the *common message log*, which consists of two files with a default size of 2,048 kilobytes each. This setting is required only when you wish to change this file size.

For details, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

(f) Changing the performance data storage locations Option

These settings are required only when you wish to change the storage location, backup folder, export folder, partial backup folder, or import folder for the database that stores the performance data managed by PFM - Agent for Enterprise Applications.

The default storage locations for the performance data are as follows:

Storage location	Folder name
Database storage location	<i>installation-folder\agtm\store\instance-name\</i>
Backup location	<i>installation-folder\agtm\store\instance-name\backup\</i>
Export location	<i>installation-folder\agtm\store\instance-name\dump\</i>
Partial backup location (for Store version 2.0)	<i>installation-folder\agtm\store\instance-name\partial\</i>
Import location (for Store version 2.0)	<i>installation-folder\agtm\store\instance-name\import\</i>

For details, see *2.4.1 Changing the performance data storage location*.

(g) Specifying the connection-target PFM - Manager for PFM - Agent for Enterprise Applications

On the host where a PFM - Agent is installed, you must specify the PFM - Manager that manages that PFM - Agent. You use the `jpccconf mgrhost define (jpcnshostname)` command to set the connection-target PFM - Manager.

Notes

- There can be only one PFM - Manager as the connection destination even when multiple PFM - Agents are installed on the same host. Different PFM - Managers cannot be specified for the various PFM - Agents.
- If a PFM - Agent and PFM - Manager are installed on the same host, that PFM - Manager on the local host is automatically the connection-target PFM - Manager; you cannot change the connection-target PFM - Manager to some other PFM - Manager.

To specify the connection-target PFM - Manager:

1. Stop all Performance Management programs and services.

Before you start the setup procedure, you must terminate all Performance Management programs and services that are running on the local host. For details about stopping services, see the chapter that describes starting and stopping services in the *Job Management Partner 1/Performance Management User's Guide*.

If a Performance Management program or service remains active during execution of the `jpccconf mgrhost define (jpcnshostname)` command, a message is displayed that asks you to terminate the program.

2. Execute the `jpccconf mgrhost define (jpcnshostname)` command with the host name of the connection-target PFM - Manager specified.

For example, if the connection-target PFM - Manager is on host `host01`, specify the command as follows:

```
jpccconf mgrhost define -host host01 (jpcnshostname -s  
host01)
```

(h) Specifying the settings for outputting action log data Option

You can log information into the action log when, for example, PFM services start and stop, or when the status of the connection to PFM - Manager changes. The action log stores historical information that is output in conjunction with the alarms for thresholds related to system load and other conditions.

For details about how to set up the action log, see *J. Outputting Action Log Data*.

4.3.2 In SAP NetWeaver 7.0 or later (in UNIX)

(1) Before installation

This subsection describes the prerequisites and required information for starting installation and setup.

(a) Prerequisites

To use PFM - Agent for Enterprise Applications in a cluster system, the following prerequisites must be satisfied.

■ Cluster system

Make sure that the following condition is satisfied:

- The cluster system is controlled by cluster software.

■ **Physical host names**

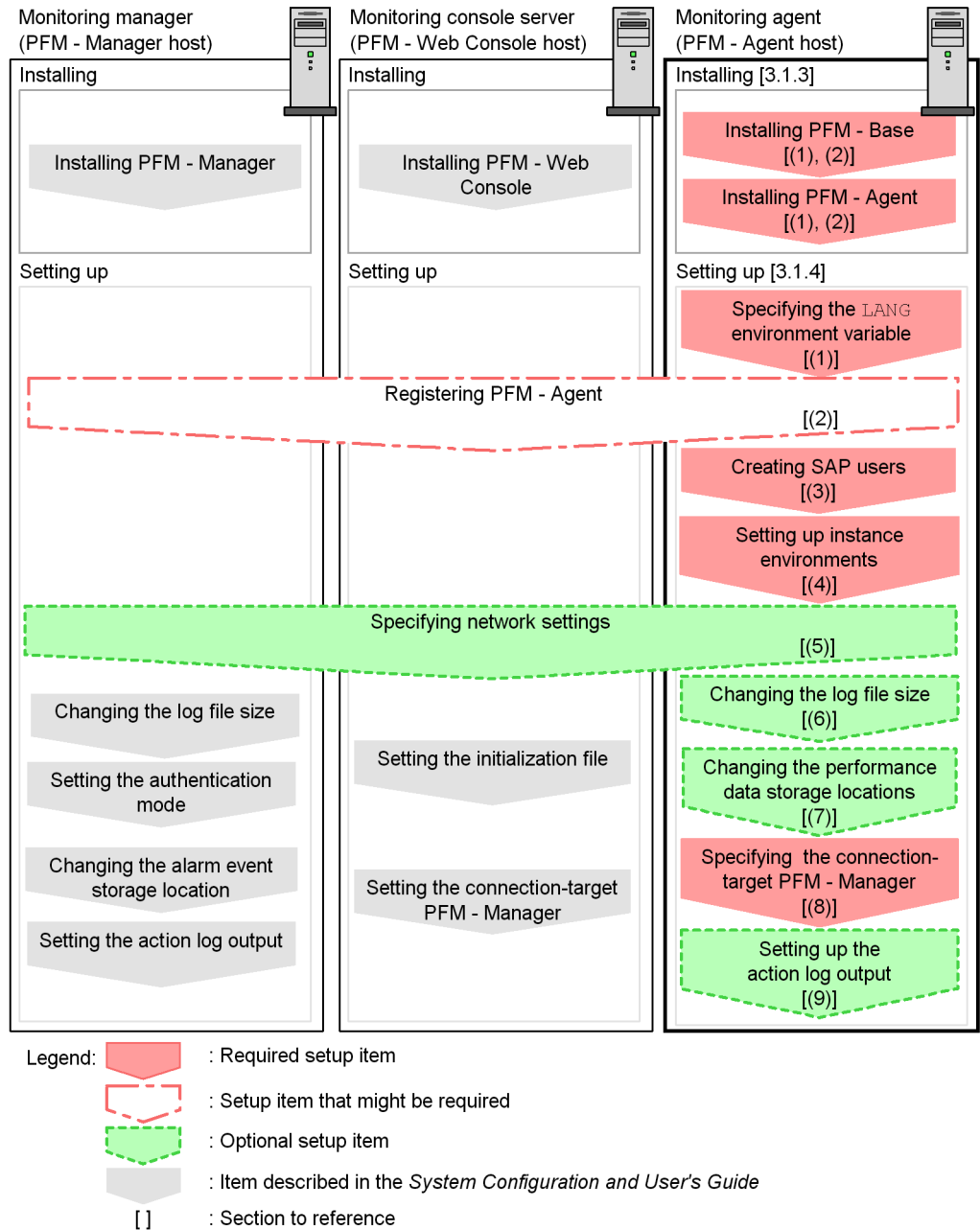
Make sure that the following condition is satisfied:

- Each physical host name must be unique in the system.

(2) Flow of tasks from installation to starting operation

The following figure shows the flow of tasks for installing and setting up PFM - Agent for Enterprise Applications.

Figure 4-7: Flow of tasks for installation and setup



For details about how to install and set up PFM - Manager and PFM - Web Console,

see the chapter that describes installation and setup in the *Job Management Partner 1/ Performance Management Planning and Configuration Guide*.

(3) Installation

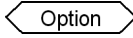
Install PFM - Agent for Enterprise Applications on both executing and standby nodes.

The installation target is the local disk. Do not install PFM - Agent for Enterprise Applications on a shared disk.

The installation procedure is the same as for a non-cluster system. For details about the installation procedure, see *2.1.3 Installation procedure*.

(4) Setup

This subsection describes the setup required in order to operate PFM - Agent for Enterprise Applications.

 indicates a setup item that is required depending on the environment or an optional setup item for changing default settings.

(a) Specifying the LANG environment variable

The table below shows the LANG environment variable value supported by PFM - Agent for Enterprise Applications.

Before you specify the LANG environment variable, make sure that the correct language environment has been installed and constructed. If the language environment is incorrect, encoding errors might occur or definition data might be replaced with invalid data.

Note

The LANG environment variable specified at the time of service startup or command execution determines the language used for the common message log.

Table 4-7: LANG environment variable value supported by PFM - Agent for Enterprise Applications

OS	Language	LANG environment variable value
HP-UX	English	c
Solaris	English	c
AIX	English	c

(b) Registering PFM - Agent for Enterprise Applications

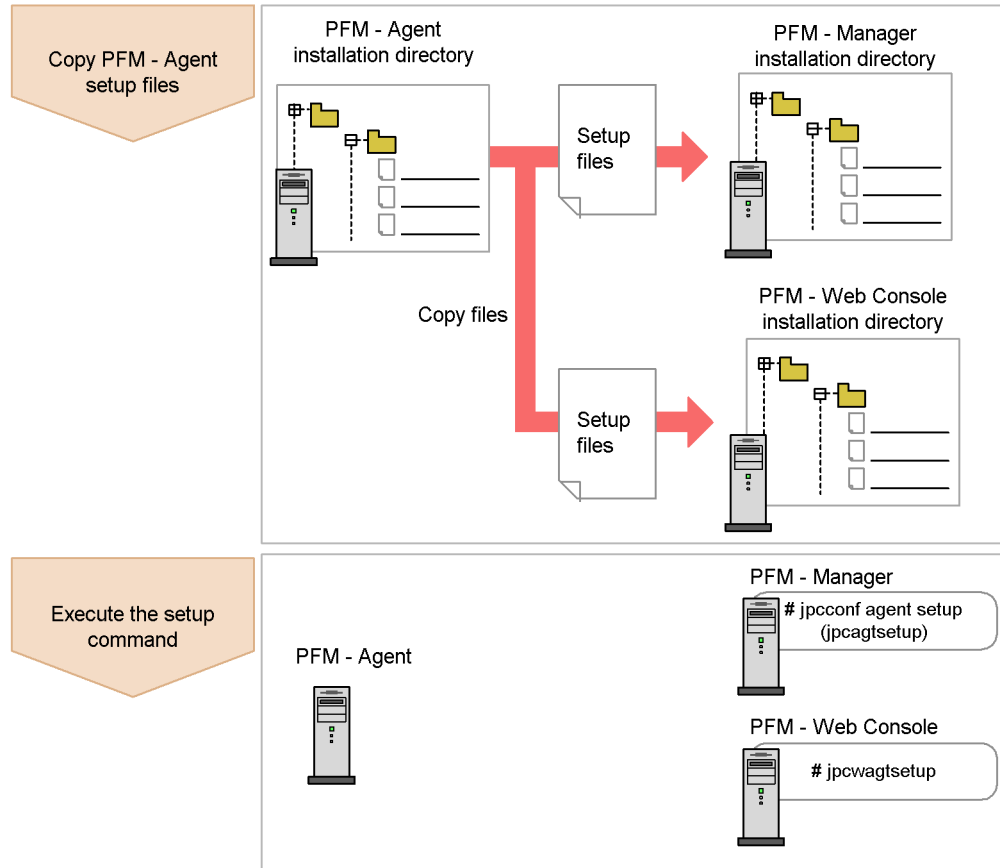
To achieve central management of PFM - Agent using PFM - Manager and PFM - Web Console, you must register PFM - Agent for Enterprise Applications into PFM -

Manager and PFM - Web Console.

If the version of PFM - Manager is 09-00 or later, PFM - Agent is registered automatically, in which case there is no need to perform the procedure described here. However, any data model version of PFM - Agent that is not included in the Release Notes for PFM - Manager must be registered manually. For details about the data model version of PFM - Agent for Enterprise Applications, see *I. Version Compatibility*.

The following shows the procedure for registering a PFM - Agent.

Figure 4-8: Procedure for registering a PFM - Agent



Notes

- Register PFM - Agent before you set up instance environments.
- If you are adding the same version of PFM - Agent for Enterprise

Applications to a Performance Management system in which information about PFM - Agent for Enterprise Applications has already been registered, there is no need to register the PFM - Agents.

- If you install a different version of PFM - Agent for Enterprise Applications on a separate host, set up the old version first and then the new version.
- If you have installed PFM - Agent on the same host as PFM - Manager, the `jpccconf agent setup (jpcagtsetup)` command executes automatically and the message `KAVE05908-I New agent setup (Pfm-Agent-service-key) ended successfully. (version=version)` is output to the common message log. Check the result; if the command did not execute correctly, re-execute it. For details about executing commands, see the chapter that describes commands in the manual *Job Management Partner 1/Performance Management Reference*.

■ Copying the setup files for PFM - Agent for Enterprise Applications

Copy the setup files from the host where PFM - Agent for Enterprise Applications was installed to the host where PFM - Manager and PFM - Web Console were installed.

To copy the setup files:

1. Stop PFM - Web Console if it is running.
2. Copy the PFM - Agent setup files in the binary mode.

The table below shows the source and target locations of the files to be copied.

Table 4-8: Setup files to be copied

Setup files for PFM - Agent	Target		
	PFM program name	OS	Target folder or directory
/opt/jp1pc/setup/jpcagtmw.EXE	PFM - Manager	Windows	<i>PFM-Manager-installation-folder</i> \setup
/opt/jp1pc/setup/jpcagtmu.Z		UNIX	/opt/jp1pc/setup/
/opt/jp1pc/setup/jpcagtmw.EXE	PFM - Web Console	Windows	<i>PFM-Web-Console-installation-folder</i> \setup
/opt/jp1pc/setup/jpcagtmu.Z		UNIX	/opt/jp1pcwebcon/setup/

■ Executing the setup command at the PFM - Manager host

To use PFM - Manager to set up PFM - Agent for Enterprise Applications, execute the following command:

```
jpccconf agent setup -key EAP (jpcagtsetup agtm)
```

Note

An error might occur if the `jpccconf agent setup (jpcagtsetup)` command is executed at a local host where Performance Management programs and services have not stopped completely. If an error occurs, check that all Performance Management programs and services have stopped completely and then re-execute the `jpccconf agent setup (jpcagtsetup)` command.

After completing this step, you can delete the PFM - Agent setup files from the PFM - Manager host.

■ **Executing the setup command at the PFM - Web Console host**

To use PFM - Web Console to set up PFM - Agent for Enterprise Applications, execute the following command:

```
jpcwagtsetup
```

After completing this step, you can delete the PFM - Agent setup files from the PFM - Web Console host.

(c) Creating the SAP users that are to be used by PFM - Agent for Enterprise Applications

To collect performance information, PFM - Agent for Enterprise Applications uses RFC (communication protocol of SAP AG) to execute the external management interfaces defined in the SAP system. Therefore, you must prepare in advance the SAP system users who are to be used by PFM - Agent for Enterprise Applications.

This subsection describes the user types, passwords, and authorizations for the SAP users who are created in the SAP system.

■ **User types**

The following types of SAP users can be used by PFM - Agent for Enterprise Applications:

- Dialog
- System
- Communication
- Service

■ **Characters permitted for passwords**

Define passwords for the SAP users. A password can consist of single-byte numeric

characters (from 0 to 9), single-byte alphabetic characters (from a to z, A to Z), and the following single-byte symbols:

!, @, \$, %, &, /, (,), =, ?, ', ^, *, +, ~, #, -, _ , ., :, {, [,], }, <, >, |

■ Required authorizations

You must set the following authorizations (authorization objects) for the users:

- Authorizations required for a user to establish RFC connection with function modules (S_RFC)
- Authorizations required in order to use external management interfaces (S_XMI_PROD)

For the value of each authorization, assign a value shown in the tables below or use the built-in configurations (S_RFC_ALL and S_XMI_ADMIN) that specify an asterisk (*) for all items.

Table 4-9: Authorizations required for a user to establish RFC connection with function modules (S_RFC)

Authorization	Description	Value
RFC_TYPE	Type of RFC object to be protected	FUGR (function group)
RFC_NAME	RFC name to be protected	*
ACTVT	Activity	16 (execution)

Table 4-10: Authorizations required in order to use external management interfaces (S_XMI_PROD)

Authorization	Description	Value
EXTCOMPANY	Company name of the external management tool	HITACHI
EXTPRODUCT	Program name of the external management tool	JP1
INTERFACE	Interface ID	*

(d) Setting up instance environments

You must set instance information for each SAP system that is to be monitored by PFM - Agent for Enterprise Applications. You perform the instance information setting at the PFM - Agent host.

The table below lists and describes the instance information items that are to be specified. Check this information before you start the setup procedure. For details about the instance information for an SAP system, see the SAP system documentation.

Table 4-11: Instance information for PFM - Agent for Enterprise Applications

Item	Description	Permitted value	Default value
SID	ID of the SAP system that is to be monitored	Character string (up to 8 bytes)	--
SERVER	SAP instance name that is to be monitored (the SAP instance name that has a dialog service, and which can be verified by transaction code SM51)	Character string (up to 20 bytes)	Instance name specified in <code>-inst</code> in the <code>jpconf inst setup (jpcinssetup)</code> command
ASHOST	Host name of the connection-target application server (the SAP local host, which can be verified by transaction code SM51)	Character string (up to 100 bytes)	Local host name
SYSNR	System number of the SAP system	Numeric characters (up to 2 bytes)	00
CLIENT	Name of client to which the SAP user belongs (system number assigned to the connection-target dialog instance)	Numeric characters (up to 3 bytes)	000
USER	SAP user name	Character string (up to 12 bytes)	--
EXTPWD	Whether to use an extended password to connect to the SAP system	Y or N <ul style="list-style-type: none"> Y: Use an extended password. N: Do not use an extended password. 	N
PASSWD	Password of the SAP user	<ul style="list-style-type: none"> When an extended password is used: 1 to 40 single-byte characters When an extended password is not used: 1 to 8 single-byte characters 	--

Item	Description	Permitted value	Default value
DELAYCONNECT	Timing of the connection to the SAP system	Y or N <ul style="list-style-type: none"> Y: Connect to the SAP system only when performance data is collected. The Agent Collector service is started regardless of the operating status of the SAP system at the time of connection establishment. N: Connect to the SAP system when the Agent Collector service starts. The Agent Collector service is not started if the SAP system is not active at the time of connection establishment. 	N
Store Version [#]	Store version to be used. For details about the Store version, see <i>2.4.2 Updating the Store version to 2.0</i> .	{1.0 2.0}	2.0

Legend:

--: None

#

This setting is required when the version of PFM - Agent for Enterprise Applications is 09-00 or later, and the version of PFM - Base or PFM - Manager on the same host is 08-11 or later, and you are setting up an instance environment for the first time.

Note

- If no instance environment has been set up, the PFM - Agent for Enterprise Applications service cannot be started.

You use the `jpccconf inst setup (jpcinssetup)` command to construct an instance environment.

To construct an instance environment:

1. Execute the `jpccconf inst setup (jpcinssetup)` command with the service key and instance name specified.

For example, to construct an instance environment for the instance named `o246bci_SD5_00` for PFM - Agent for Enterprise Applications, execute the following command:

4. Operation in a Cluster System

```
jpcconf inst setup -key EAP -inst o246bci_SD5_00
(jpcinssetup agtm -inst o246bci_SD5_00)
```

Although you can use any instance name in PFM - Agent for Enterprise Applications, to simplify management we recommend that you use an instance name that identifies the SAP system that is to be monitored. Normally, a name in the format *host-name_SAP-system-ID_system-number* is assigned to an instance for an SAP system.

2. Specify instance information for the SAP system.

Enter the information shown in Table 4-11 *Instance information for PFM - Agent for Enterprise Applications*, in accordance with the command's instructions. You cannot omit any requested items. To use a displayed value (which is the default) press the **Enter** key.

Once you have entered all items, the instance environment is constructed. The following describes constructed instance environments:

- Organization of directories for instance environments

Instance environments are constructed in the following directory:

- When running a physical host: /opt/jp1pc/agtm

The following table shows the organization of the directories for instance environments.

Table 4-12: Organization of directories for instance environments

Directory and file names		Description	
agent	<i>instance-name</i>	jpcagt.ini	Agent Collector service startup initialization file
		jpcagt.ini.model#	Model file for the Agent Collector service startup initialization file
		j3alget.ini	Environment parameters file for CCMS Alert Monitor Command (PD_ALMX) records
		j3slget.ini	Environment parameters file for System Log Monitor Command (PD_SLMX) records
		log	Storage directory for log files
store	<i>instance-name</i>	jpcsto.ini	Agent Store service startup initialization file
		jpcsto.ini.model#	Model file for the Agent Store service startup initialization file
		*.DAT	Data model definition file

Directory and file names		Description
	dump	Export directory
	backup	Backup directory
	import	Import directory (for Store version 2.0)
	log	Storage directory for log files
	partial	Partial backup directory (for Store version 2.0)
	STPD	Performance data storage directory for the PD record type (for Store version 2.0)
	STPI	Performance data storage directory for the PI record type (for Store version 2.0)
	STPL	Performance data storage directory for the PL record type (for Store version 2.0)

#

You can use this file to restore the settings that were in effect before the instance environment was constructed.

■ **Service ID for an instance environment**

The service ID for an instance environment is a character string that consists of a product ID, function ID, instance number, instance name, and host name. For example, service ID MA1o246bci_SD5_00 [host01] represents the following instance environment:

- Product ID: M
- Function ID: A
- Instance number: 1
- Instance name: o246bci_SD5_00
- Host name: host1

For details about the service ID, see the appendix in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

(e) Specifying network settings Option

You must specify network settings only when you change the network configuration where Performance Management is used.

You can set the following two network settings items:

- IP addresses

Set this information to use Performance Management in a network that is connected to multiple LANs. To set multiple IP addresses, define the host names and IP addresses in the `jpchosts` file. Make sure that the settings in the `jpchosts` file are consistent throughout the entire Performance Management system.

For details, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

- Port numbers

You can set the port numbers used by Performance Management. To avoid confusion during operation, make sure that the specified port numbers and service names are consistent throughout the entire Performance Management system.

For details about setting port numbers, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

(f) Changing the log file size Option

Performance Management's operating status is output to a log file unique to Performance Management. This log is called the *common message log*, which consists of two files with a default size of 2,048 kilobytes each. This setting is required only when you wish to change this file size.

For details, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

(g) Changing the performance data storage locations Option

These settings are required only when you wish to change the storage location, backup directory, export directory, partial backup directory, or import directory for the database that stores the performance data managed by PFM - Agent for Enterprise Applications.

The default storage locations for the performance data are as follows:

Storage location	Directory name
Database storage location	<code>/opt/jp1pc/agt/store/instance-name/</code>
Backup location	<code>/opt/jp1pc/agt/store/instance-name/backup/</code>
Export location	<code>/opt/jp1pc/agt/store/instance-name/dump/</code>
Partial backup location (for Store version 2.0)	<code>/opt/jp1pc/agt/store/instance-name/partial/</code>

Storage location	Directory name
Import location (for Store version 2.0)	/opt/jp1pc/agtm/store/ <i>instance-name</i> /import/

For details, see 3.4.1 *Changing the performance data storage location*.

(h) Specifying the connection-target PFM - Manager for PFM - Agent for Enterprise Applications

On the host where a PFM - Agent is installed, you must specify the PFM - Manager that manages that PFM - Agent. You use the `jpccconf mgrhost define (jpcnshostname)` command to set the connection-target PFM - Manager.

Notes

- There can be only one PFM - Manager as the connection destination even when multiple PFM - Agents are installed on the same host. Different PFM - Managers cannot be specified for the various PFM - Agents.
- If a PFM - Agent and PFM - Manager are installed on the same host, that PFM - Manager on the local host is automatically the connection-target PFM - Manager; you cannot change the connection-target PFM - Manager to some other PFM - Manager.

To specify the connection-target PFM - Manager:

1. Stop all Performance Management programs and services.

Before you start the setup procedure, you must terminate all Performance Management programs and services that are running on the local host. For details about stopping services, see the chapter that describes starting and stopping services in the *Job Management Partner 1/Performance Management User's Guide*.

If a Performance Management program or service remains active during execution of the `jpccconf mgrhost define (jpcnshostname)` command, a message is displayed that asks you to terminate the program.

2. Execute the `jpccconf mgrhost define (jpcnshostname)` command with the host name of the connection-target PFM - Manager specified.

For example, if the connection-target PFM - Manager is on host `host01`, specify the command as follows:

```
jpccconf mgrhost -host host01 (jpcnshostname -s host01)
```

(i) Specifying the action log output settings Option

You can log information into the action log when, for example, PFM services start and stop, or when the status of the connection to PFM - Manager changes. The action log

stores historical information that is output in conjunction with the alarms for thresholds related to system load and other conditions.

For details about how to set up the action log, see *J. Outputting Action Log Data*.

4.3.3 In SAP NetWeaver 2004 or earlier (in Windows)

(1) Before installation

This subsection describes the prerequisites and required information for starting installation and setup.

(a) Prerequisites

To use PFM - Agent for Enterprise Applications in a cluster system, the following prerequisites must be satisfied.

■ Cluster system

Make sure that the following conditions are satisfied:

- The cluster system is controlled by cluster software.
- The cluster software is set up in such a manner that it controls startup and termination of the PFM - Agent for Enterprise Applications that is operating on the logical host. PFM - Agent for Enterprise Applications is set to fail over when the monitored SAP system fails over.

Notes

- If a message box is displayed for an application error in Dr. Watson log, failover might fail. In such a case, you must suppress the error notification that is made with this message box. For details about the suppression procedure, see the OS documentation. Note that suppression of error notification might have adverse effects on information acquisition in the event of application errors.
- In Windows Server 2003, a dialog box for reporting an error to Microsoft is displayed when an application error occurs. This dialog box might cause failover to fail; therefore, reporting of the error must be suppressed. For details about the suppression procedure, see the OS documentation.

■ Shared disk

Make sure that the following conditions are satisfied:

- A shared disk is available to each logical host and information can be inherited from the executing node to the standby node.
- The shared disk is connected physically to each node by means of a Fibre Channel or SCSI.

Performance Management does not support a configuration in which a disk

replicated by a network drive or via a network is used as a shared disk.

- In the event of a failover, the shared disk can be forced offline (for example, by the cluster software) to achieve failover even if some processing using the shared disk continues due to a problem.
- If multiple PFM - Managers and PFM - Agents operate on a single logical host, all must use the same directory name for the shared disk.

In the case of the Store database, its storage location can be changed to another directory on the shared disk.

■ Logical host names and IP addresses

Make sure that the following conditions are satisfied:

- Each logical host has a logical host name and a corresponding logical IP address, and this information can be inherited from the executing node to the standby node.
- The logical host names and logical IP addresses are set in the `hosts` file and name server.
- If DNS operation is used, the host name without the domain name is used as the logical host name, not the FQDN name.
- All physical and logical host names are unique throughout the system.

Notes

- Do not specify a physical host name (host name displayed by the `hostname` command) as a logical host name. If specified, normal communication processing might not be achieved.
- A logical host name must consist of 1 to 32 single-byte alphanumeric characters. None of the following symbols or the space character can be used:
`/, \, :, ;, *, ?, ', ", <, >, |, &, =, ,`
- A logical host name cannot begin with `localhost`, an IP address, or a hyphen (-).

(b) Information required to set up PFM - Agent for Enterprise Applications for logical host use

To set up PFM - Agent for Enterprise Applications for logical host use, you must provide the information listed in the table below, in addition to the environment information that is needed to set up a normal PFM - Agent for Enterprise Applications.

Table 4-13: Information required to set up PFM - Agent for Enterprise Applications for logical host use

Item	Example
Logical host name	jp1-halr3
Logical IP address	172.16.92.100
Shared disk	S:\jp1

If there are multiple Performance Management programs for logical host use on a single logical host, they must all use directories on the same shared disk.

For details about the capacity required on the shared disk, see *A. System Estimates*.

(c) Making the logical host subject to failover in the event of a PFM - Agent for Enterprise Applications failure

If you employ a system configuration in which PFM - Agent for Enterprise Applications operates on a logical host, you should evaluate whether the entire logical host should be subject to failover in the event of a PFM - Agent for Enterprise Applications failure.

If a PFM - Agent for Enterprise Applications failure results in failover of the entire logical host, a job application that is running on the same logical host and which is being monitored by PFM - Agent for Enterprise Applications will also result in failover, which will affect the job.

It is recommended that you use one of the following cluster software settings so that errors on PFM - Agent for Enterprise Applications do not affect SAP system operation:

- Do not monitor operation of PFM - Agent for Enterprise Applications
- Do not allow detection of errors in PFM - Agent for Enterprise Applications to result in failover

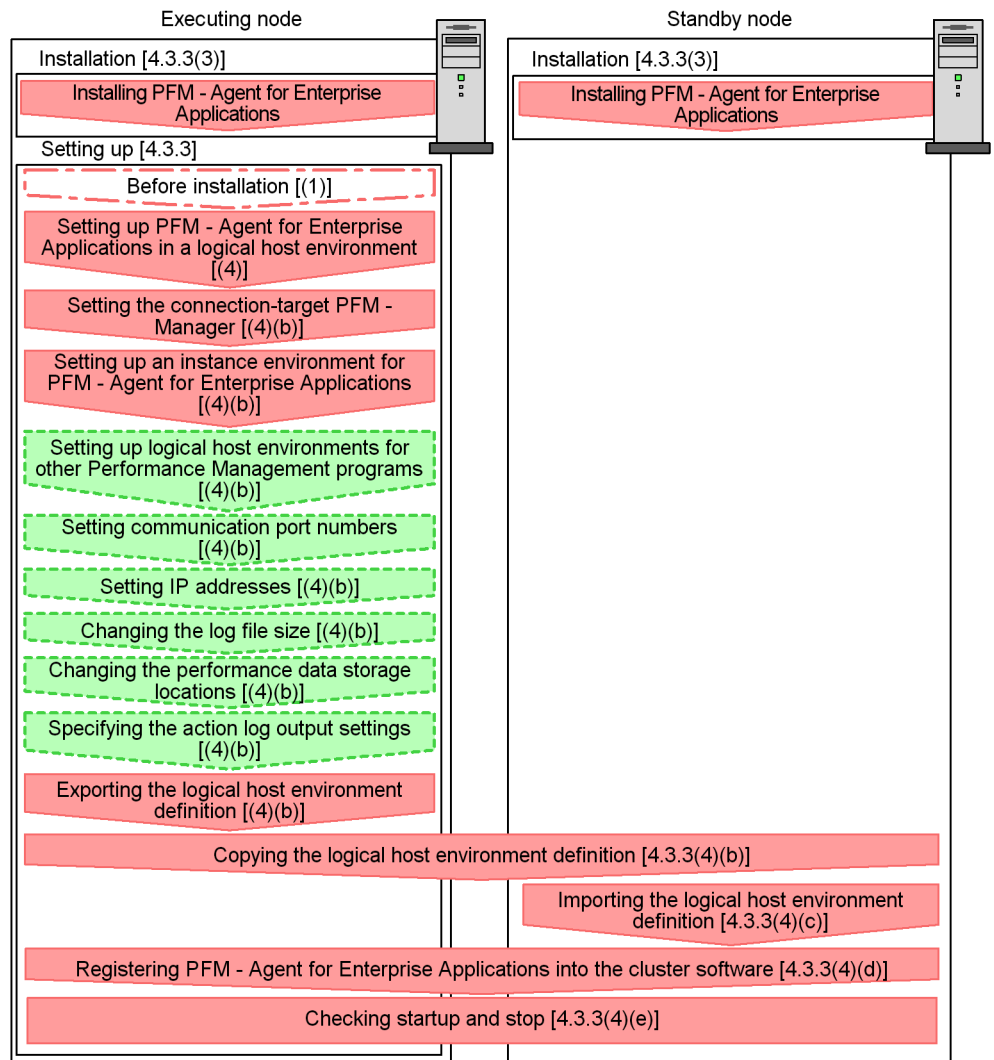
(d) Notes about upgrading when logical host operation is used

To upgrade a PFM - Agent for Enterprise Applications that is running on a logical host, you must place the shared disk online at either the executing node or the standby node.

(2) Flow of tasks from installation to starting operation

The following figure shows the flow of tasks for installing and setting up PFM - Agent for Enterprise Applications for logical host use in a cluster system.

Figure 4-9: Flow of tasks for installing and setting up PFM - Agent for Enterprise Applications for logical host use in a cluster system (in Windows)



- Legend:
- : Required setup item
 - : Setup item that might be required
 - : Optional setup item
 - [] : Section to reference

#: Executed at the node where PFM - Manager and PFM - Web Console are running

Note

When a PFM - Agent is set up in a logical host environment, the PFM - Agent definitions in the physical host environment are not inherited. New logical and physical host environments are created when an instance environment is set up.

(3) Installation

Install PFM - Agent for Enterprise Applications on both executing and standby nodes.

The installation target is the local disk. Do not install PFM - Agent for Enterprise Applications on a shared disk.

The installation procedure is the same as for a non-cluster system. For details about the installation procedure, see *2.1.3 Installation procedure*.

(4) Setup

This subsection describes the setup required in order to operate Performance Management in a cluster system.

(a) Registering PFM - Agent for Enterprise Applications

To add PFM - Agent for Enterprise Applications to an existing Performance Management system, you must perform setup in order to register PFM - Agent for Enterprise Applications.

If the version of PFM - Manager is 09-00 or later, PFM - Agent is registered automatically, in which case there is no need to perform the procedure described here. However, any data model version of PFM - Agent that is not included in the Release Notes for PFM - Manager must be registered manually. For details about the data model version of PFM - Agent for Enterprise Applications, see *1. Version Compatibility*.

You use PFM - Manager and PFM - Web Console to register PFM - Agent for Enterprise Applications. The procedure for registering PFM - Agent for Enterprise Applications is the same as for a non-cluster system. For details about the procedure, see *2.1.4(1) Registering PFM - Agent for Enterprise Applications*.

(b) Setting up a logical host environment at the executing node

You must set up a logical host environment for PFM - Agent for Enterprise Applications at the executing node.

Note

Before starting this setup, stop all services of Performance Management programs in the entire Performance Management system. For details about how to stop services, see the chapter that describes startup and termination of Performance Management in the *Job Management Partner 1/Performance Management User's Guide*.

■ Placing the shared disk online

Make sure that the shared disk is in online status. If it is not online, use a program such as the cluster software or a volume manager to place it online.

■ Setting up a logical host environment for PFM - Agent for Enterprise Applications

Execute the `jpccconf ha setup (jpchasetup create)` command to create a logical host environment. This command creates a logical host environment by copying necessary data to the shared disk and setting definitions for a logical host.

To set up a logical host environment for PFM - Agent for Enterprise Applications:

1. Execute the `jpccconf ha setup (jpchasetup create)` command to create a logical host environment.

Execute the following command:

```
jpccconf ha setup -key EAP -lhost jp1-halr3 -d S:\jp1
(jpchasetup create agtm -lhost jp1-halr3 -d S:\jp1)
```

To specify the logical host name, use `-lhost`. This example specifies `jp1-halr3` as the logical host name. If you use DNS operation, specify the logical host name without the domain name.

Specify the name of a directory on the shared disk for the environment directory name in `-d`. For example, if `-d S:\jp1` is specified, `S:\jp1\jp1pc` is created and then files for the logical host environment are created.

2. Execute the `jpccconf ha list (jpchasetup list)` command to check the logical host settings.

Execute the following command:

```
jpccconf ha list -key all (jpchasetup list all)
```

Make sure that the created logical host environment is valid.

■ Setting the connection-target PFM - Manager

Execute the `jpccconf mgrhost define (jpcnshostname)` command to set the PFM - Manager that manages PFM - Agent for Enterprise Applications.

To set the connection-target PFM - Manager:

1. Execute the `jpccconf mgrhost define (jpcnshostname)` command to set the connection-target PFM - Manager.

Execute the following command:

```
jpccconf mgrhost define -host jp1-hal -lhost jp1-halr3  
(jpcnshostname -s jp1-hal -lhost jp1-halr3)
```

Specify the host name of the connection-target PFM - Manager in the `-host` option. If the connection-target PFM - Manager runs on a logical host, specify the logical host name of the connection-target PFM - Manager in the `-host` option. This example specifies `jp1-hal` as the PFM - Manager's logical host name.

To specify the logical host name of PFM - Agent for Enterprise Applications, use `-lhost`. This example specifies `jp1-halr3` as the logical host name of PFM - Agent for Enterprise Applications.

■ Setting up an instance environment

Execute the `jpccconf inst setup (jpcinssetup)` command to set up an instance environment for PFM - Agent for Enterprise Applications.

To set up an instance environment:

1. Execute the `jpccconf inst setup (jpcinssetup)` command.

Execute the following command:

```
jpccconf inst setup -key EAP -lhost jp1-halr3 -inst  
o246bci_SD5_00 (jpcinssetup agtm -lhost jp1-halr3 -inst  
o246bci_SD5_00)
```

To specify the logical host name, use `-lhost`. This example specifies `jp1-halr3` as the logical host name of PFM - Agent for Enterprise Applications.

2. Set up an instance environment for the SAP system.

The instance environment setup is the same as for a non-cluster system. For details about the instance information to be set, see *2.1.4(3) Setting up instance environments*.

■ Setting up logical host environments for other Performance Management programs

If you have other PFM - Manager or PFM - Agent programs to be set up on the same logical host in addition to PFM - Agent for Enterprise Applications, set them up at this stage.

For details about the setup procedure, see the chapter that describes construction and operations in a cluster system in the *Job Management Partner 1/Performance Management User's Guide* or the chapter that describes operations in a cluster system in the applicable PFM - Agent manual.

■ Setting port numbers

These settings are required only when the Performance Management programs run in a network environment that uses a firewall. If you establish communication between Performance Management programs via a firewall, use the `jpccconf port` (`jpconsconfig port`) command to set the port numbers.

For details about how to set port numbers, see the chapter that describes installation and setup and the chapter that describes construction and operations in a cluster system in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

■ Setting IP addresses

Set the IP addresses if you will be specifying IP addresses in operating Performance Management in a network environment connected to multiple LANs. To do this, directly edit the contents of the `jpchosts` file.

For details about how to set IP addresses, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

Note

Once you have edited the `jpchosts` file, copy it from the executing node to the standby node.

■ Changing the log file size

Performance Management's operating status is output to a log file unique to Performance Management. This log is called the *common message log*, which it consists of two files with a default size of 2,048 kilobytes each. This setting is required only when you wish to change this file size.

For details, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

■ Changing the performance data storage locations

These settings are required only when you wish to change the storage location, backup folder, export folder, or import folder for the database that stores the performance data managed by PFM - Agent for Enterprise Applications.

For details about how to specify the settings, see *2.4.1 Changing the performance data storage location*.

■ Specifying the action log output settings

These settings are required in order to output action logs in the event of an alarm. An action log consists of logged information about threshold values that have been exceeded for a reason such as system loading when output to the log is linked with the alarm function.

For details about how to specify the settings, see *J. Outputting Action Log Data*.

■ Exporting the logical host environment definition

After you have created a logical host environment for PFM - Agent for Enterprise Applications, you must export the environment definition to a file. This export processing involves output of the definition information for the Performance Management program that has been set up on the logical host to a file in batch mode. If you are setting up other Performance Management programs on the same logical host, export the environment definitions after all setup processes have been completed.

To export the logical host environment definition:

1. Execute the `jpccconf ha export (jpcasetup export)` command to export the logical host environment definition.

Output to an export file the definition information for the logical host environment that has been created so far. You can assign any name to the export file.

For example, to export the logical host environment definition to the `lhostexp.txt` file, execute the following command:

```
jpccconf ha export -f lhostexp.txt (jpcasetup export -f lhostexp.txt)
```

■ Copying the logical host environment definition file to the standby node

Copy from the executing node to the standby node the logical host environment definition file exported as described in *Exporting the logical host environment definition* in 4.3.3(4)(b) *Setting up a logical host environment at the executing node*.

■ Placing the shared disk offline

Place the shared disk in offline status by using a program such as cluster software or a volume manager, and then finish the procedure. If you will be using the shared disk after the procedure, there is no need to place it offline.

(c) Setting up a logical host environment for the standby system

At the standby node, set up a logical host environment for PFM - Agent for Enterprise Applications.

■ Importing the logical host environment definition

Import the export file that was copied from the executing node to the standby node.

To specify settings for executing at the standby node the Performance Management program on the logical host that was created at the executing node, use the `jpccconf ha import (jpcasetup import)` command. If multiple Performance Management programs have been set up on a single logical host, the settings for all the programs are imported in batch mode.

When executing this command, there is no need to keep the shared disk in online status.

To import the logical host environment definition:

1. Execute the `jpccconf ha import (jpchasetup import)` command to import the logical host environment definition.

Execute the following command:

```
jpccconf ha import -f lhostexp.txt (jpchasetup import -f
lhostexp.txt)
```

This command changes settings in such a manner that the environment for the standby node becomes the same as in the export file. As a result, setup is performed for starting PFM - Agent for Enterprise Applications on the logical host.

If fixed port numbers were set by the `jpccconf port (jpcnsconfig port)` command during setup, they are also set in the same manner.

2. Execute the `jpccconf ha list (jpchasetup)` command to check the logical host settings.

Execute the following command:

```
jpccconf ha list -key all (jpchasetup list all)
```

Make sure that the displayed information is the same as when `jpccconf ha list (jpchasetup list)` is executed at the executing node.

(d) Registering into the cluster software

To run a Performance Management program in a logical host environment, you must register the program into the cluster software and set up the environment in such a manner that the Performance Management program starts and terminates from the cluster software.

This subsection describes the settings for registering PFM - Agent for Enterprise Applications into the cluster software.

■ Registering PFM - Agent for Enterprise Applications into the cluster software

This subsection describes the settings for registering PFM - Agent for Enterprise Applications into the cluster software, using the registration items for MSCS as an example.

For PFM - Agent for Enterprise Applications, you register into the cluster software the services listed in the table below.

Table 4-14: PFM - Agent for Enterprise Applications services to be registered into the cluster software

No.	Name	Service Name	Dependency
1	PFM - Agent Store for SAP R/3 <i>instance-name</i> [LHOST]	JP1PCAGT_MS_ <i>instance-name</i> [LHOST]	IP address resource Physical disk resource SAP system resource
2	PFM - Agent for SAP R/3 <i>instance-name</i> [LHOST]	JP1PCAGT_MA_ <i>instance-name</i> [LHOST]	Cluster resources listed in row 1 above
3	PFM - Action Handler [LHOST]	JP1PCMGR_PH [LHOST]	IP address resource Physical disk resource

Replace [LHOST] with the logical host name. For example, if the instance name is o246bci_SD5_00 and the logical host name is jp1-halr3, then the name of the service is PFM - Agent Store for SAP R/3 o246bci_SD5_00 [jp1-halr3] and the service name is JP1PCAGT_MS_o246bci_SD5_00 [jp1-halr3].

In the case of MSCS, you must register these services as MSCS resources. Set each resource as follows, where bold type indicates an MSCS setting:

- In **Resource Type**, register as **General-Purpose Service**.
- Set **Name**, **Dependency**, and **Service Name** as shown in Table 4-14.
Name is the name of the service that is displayed, and **Service Name** is the name used to specify a service that is controlled from MSCS.
- Do not set **Startup Parameter** or **Duplicate Registry**.
- On the **Details** page for properties, specify the settings as appropriate to the operating method in terms of whether failover is to occur in the event of a Performance Management program failure.

For example, the following settings result in failover in the event of a PFM - Agent for Enterprise Applications failure:

Restart: Selected

Apply to Group: Selected

Threshold for the restart retry count: 3[#]

#

As a guideline, set 3 in **Threshold** for the restart retry count.

Note

A service registered in the cluster is started and stopped from the cluster. Set **startup type** to **Manual** so that the service will not be started automatically during OS startup. Immediately after setup is performed by the `jpccconf ha setup (jpchasetup create)` command, the service is set to **Manual**.

(e) Checking startup and stop

Make sure that the Performance Management programs function normally by starting and terminating the programs from the cluster software at each node.

(f) Setting up an environment in the cluster system

When you have finished setting up the Performance Management programs, set up an environment for them so that PFM - Web Console can be used to display monitored program operating status reports as appropriate to the operations and so that it can send notifications to the user in the event of a problem on a monitored program.

For details about how to set up an environment for the Performance Management programs, see the chapter that describes construction and operation in a cluster system in the *Job Management Partner 1/Performance Management User's Guide*.

4.3.4 In SAP NetWeaver 2004 or earlier (in UNIX)**(1) Before installation**

This subsection describes the prerequisites and required information for starting installation and setup.

(a) Prerequisites

To use PFM - Agent for Enterprise Applications in a cluster system, the following prerequisites must be satisfied.

■ Cluster system

Make sure that the following conditions are satisfied:

- The cluster system is controlled by cluster software.
- The cluster software is set up in such a manner that it controls startup and termination of the PFM - Agent for Enterprise Applications that is operating on the logical host. PFM - Agent for Enterprise Applications is set to fail over when the monitored SAP system fails over.

■ Shared disk

Make sure that the following conditions are satisfied:

- A shared disk is available to each logical host and information can be inherited from the executing node to the standby node.

- The shared disk is connected physically to each node by means of a Fibre Channel or SCSI.

Performance Management does not support a configuration in which a disk replicated by a network drive or via a network is used as a shared disk.

- In the event of a failover, the shared disk can be forcibly unmounted (for example, by the cluster software) to achieve failover even if some processing using the shared disk continues due to a problem.
- If multiple PFM - Managers and PFM - Agents operate on a single logical host, all must use the same directory name for the shared disk.

In the case of the Store database, its storage location can be changed to another directory on the shared disk.

■ Logical host names and logical IP addresses

Make sure that the following conditions are satisfied:

- Each logical host has a logical host name and a corresponding logical IP address, and this information can be inherited from the executing node to the standby node.
- The logical host names and logical IP addresses are set in the `hosts` file and name server.
- If DNS operation is used, the host name without the domain name is used as the logical host name, not the FQDN name.
- All physical and logical host names are unique throughout the system.

Notes

- Do not specify a physical host name (host name displayed by the `uname -n` command) as a logical host name. If specified, normal communication processing might not be achieved.
- A logical host name must consist of 1 to 32 single-byte alphanumeric characters. None of the following symbols or the space character can be used:
`/, \, :, ;, *, ?, ', ", <, >, |, &, =, ,`
- A logical host name cannot begin with `localhost`, an IP address, or a hyphen (-).

(b) Information required to set up PFM - Agent for Enterprise Applications for logical host use

To set up PFM - Agent for Enterprise Applications for logical host use, you must provide the information listed in the table below, in addition to the environment information that is needed to set up a normal PFM - Agent for Enterprise Applications.

Table 4-15: Information required to set up PFM - Agent for Enterprise Applications for logical host use

Item	Example
Logical host name	jp1-halr3
Logical IP address	172.16.92.100
Shared disk	/jp1

If there are multiple Performance Management programs for logical host use on a single logical host, they must all use directories on the same shared disk.

For details about the capacity required on the shared disk, see *A. System Estimates*.

(c) Making the logical host subject to failover in the event of a PFM - Agent for Enterprise Applications failure

If you employ a system configuration in which PFM - Agent for Enterprise Applications operates on a logical host, you should evaluate whether the entire logical host should be subject to failover in the event of a PFM - Agent for Enterprise Applications failure.

If a PFM - Agent for Enterprise Applications failure results in failover of the entire logical host, a job application that is running on the same logical host and which is being monitored by PFM - Agent for Enterprise Applications will also result in failover, which will affect the job.

It is recommended that you use one of the following cluster software settings so that errors on PFM - Agent for Enterprise Applications do not affect SAP system operation:

- Do not monitor operation of PFM - Agent for Enterprise Applications
- Do not allow detection of errors in PFM - Agent for Enterprise Applications to result in failover

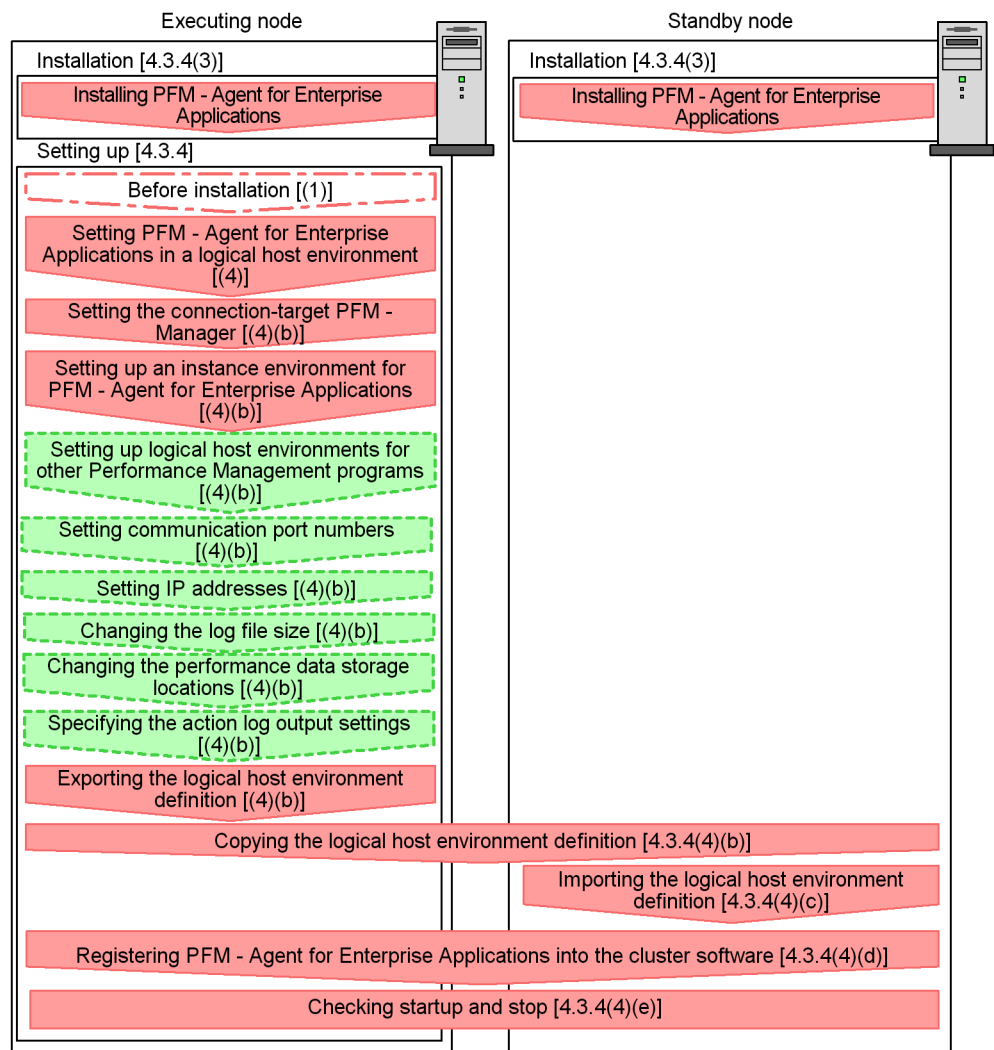
(d) Notes about upgrading when logical host operation is used




To upgrade a PFM - Agent for Enterprise Applications instance that is run on a logical host, you must place the shared disk online at either the executing node or the standby node.

(2) Flow of tasks from installation to starting operation

The following figure shows the flow of tasks for installing and setting up PFM - Agent for Enterprise Applications for logical host use in a cluster system.

Figure 4-10: Flow of tasks for installing and setting up PFM - Agent for Enterprise Applications for logical host use in a cluster system (in UNIX)



- Legend:
-  : Required setup item
 -  : Setup item that might be required
 -  : Optional setup item
 - [] : Section to reference

#: Executed at the node where PFM - Manager and PFM - Web Console are running

Note

When a PFM - Agent is set up in a logical host environment, the PFM - Agent definitions in the physical host environment are not inherited. New logical and physical host environments are created when an instance environment is set up.

(3) Installation

Install PFM - Agent for Enterprise Applications on both executing and standby nodes.

The installation target is the local disk. Do not install PFM - Agent for Enterprise Applications on a shared disk.

For details about the installation procedure, see *3.1.3 Installation procedure*.

(4) Setup

This subsection describes the setup required in order to operate Performance Management in a cluster system.

(a) Registering PFM - Agent for Enterprise Applications

To add PFM - Agent for Enterprise Applications to an existing Performance Management system, you must perform setup in order to register PFM - Agent for Enterprise Applications.

If the version of PFM - Manager is 09-00 or later, PFM - Agent is registered automatically, in which case there is no need to perform the procedure described here. However, any data model version of PFM - Agent that is not included in the Release Notes for PFM - Manager must be registered manually. For details about the data model version of PFM - Agent for Enterprise Applications, see *1. Version Compatibility*.

You use PFM - Manager and PFM - Web Console to register PFM - Agent for Enterprise Applications. The procedure for registering PFM - Agent for Enterprise Applications is the same as for a non-cluster system. For details about the procedure, see *3.1.4(2) Registering PFM - Agent for Enterprise Applications*.

(b) Setting up a logical host environment at the executing node

You must set up a logical host environment for PFM - Agent for Enterprise Applications at the executing node.

Note

Before starting this setup, stop all services of Performance Management programs in the entire Performance Management system. For details about how to stop services, see the chapter that describes startup and termination of Performance Management in the *Job Management Partner 1/Performance Management User's Guide*.

■ Mounting the shared disk

Make sure that the shared disk is mounted. If it is not mounted, mount it.

■ Setting up a logical host environment for PFM - Agent for Enterprise Applications

Execute the `jpccconf ha setup (jpchasetup create)` command to create a logical host environment. This command creates a logical host environment by copying necessary data to the shared disk and setting definitions for a logical host.

To set up a logical host environment for PFM - Agent for Enterprise Applications:

1. Execute the `jpccconf ha setup (jpchasetup create)` command to create a logical host environment.

Execute the following command:

```
jpccconf ha setup -key EAP -lhost jp1-halr3 -d /jp1  
(jpchasetup create agtm -lhost jp1-halr3 -d /jp1)
```

To specify the logical host name, use `-lhost`. This example specifies `jp1-halr3` as the logical host name. If you use DNS operation, specify the logical host name without the domain name.

Specify the name of a directory on the shared disk for the environment directory name in `-d`. For example, if `-d /jp1` is specified, `/jp1/jp1pc` is created and then files for the logical host environment are created.

2. Execute the `jpccconf ha list (jpchasetup list)` command to check the logical host settings.

Execute the following command:

```
jpccconf ha list -key all (jpchasetup list)
```

Make sure that the created logical host environment is valid.

■ Setting the connection-target PFM - Manager

Execute the `jpccconf mgrhost define (jpcnshostname)` command to set the PFM - Manager that manages PFM - Agent for Enterprise Applications.

To set the connection-target PFM - Manager:

1. Execute the `jpccconf mgrhost define (jpcnshostname)` command to set the connection-target PFM - Manager.

Execute the following command:

```
jpccconf mgrhost define -host jp1-hal -lhost jp1-halr3  
(jpcnshostname -s jp1-hal -lhost jp1-halr3)
```

Specify the host name of the connection-target PFM - Manager in the `-host` option. If the connection-target PFM - Manager runs on a logical host, specify the logical host name of the connection-target PFM - Manager in the `-host` option. This example specifies `jp1-hal` as the PFM - Manager's logical host name.

To specify the logical host name of PFM - Agent for Enterprise Applications, use `-lhost`. This example specifies `jp1-halr3` as the logical host name of PFM - Agent for Enterprise Applications.

■ Setting up an instance environment

Execute the `jpccconf inst setup (jpcinssetup)` command to set up an instance environment for PFM - Agent for Enterprise Applications.

To set up an instance environment:

1. Execute the `jpccconf inst setup (jpcinssetup)` command.

Execute the following command:

```
jpccconf inst setup -key EAP -lhost jp1-halr3 -inst
o246bci_SD5_00 (jpcinssetup agtm -lhost jp1-halr3 -inst
o246bci_SD5_00)
```

To specify the logical host name, use `-lhost`. This example specifies `jp1-halr3` as the logical host name of PFM - Agent for Enterprise Applications.

2. Set up an instance environment for the SAP system.

The instance environment setup is the same as for a non-cluster system. For details about the instance information to be set, see *3.1.4(4) Setting up instance environments*.

■ Setting up logical host environments for other Performance Management programs

If you have other PFM - Manager or PFM - Agent programs to be set up on the same logical host in addition to PFM - Agent for Enterprise Applications, set them up at this stage.

For details about the setup procedure, see the chapter that describes construction and operations in a cluster system in the *Job Management Partner 1/Performance Management User's Guide* or the chapter that describes operations in a cluster system in the applicable PFM - Agent manual.

■ Setting port numbers

These settings are required only when the Performance Management programs run in a network environment that uses a firewall. If you establish communication between Performance Management programs via a firewall, use the `jpccconf port (jpcnsconfig port)` command to set the port numbers.

For details about how to set port numbers, see the chapter that describes installation and setup and the chapter that describes construction and operations in a cluster system in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

■ **Setting IP addresses**

Set the IP addresses if you will be specifying IP addresses in operating Performance Management in a network environment connected to multiple LANs. To do this, directly edit the contents of the `jpchosts` file.

For details about how to set IP addresses, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

Note

Once you have edited the `jpchosts` file, copy it from the executing node to the standby node.

■ **Changing the log file size**

Performance Management's operating status is output to a log file unique to Performance Management. This log is called the *common message log*, which consists of two files with a default size of 2,048 kilobytes each. This setting is required only when you wish to change this file size.

For details, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

■ **Changing the performance data storage locations**

These settings are required only when you wish to change the storage location, backup directory, export directory, or import directory for the database that stores the performance data managed by PFM - Agent for Enterprise Applications.

For details about how to specify the settings, see *3.4.1 Changing the performance data storage location*.

■ **Specifying the action log output settings**

These settings are required in order to output action logs in the event of an alarm. An action log consists of logged information about threshold values that have been exceeded for a reason such as system loading when output to the log is linked with the alarm function.

For details about how to specify the settings, see *J. Outputting Action Log Data*.

■ **Exporting the logical host environment definition**

After you have created a logical host environment for PFM - Agent for Enterprise Applications, you must export the environment definition to a file. This export

processing involves output of the definition information for the Performance Management program that has been set up on the logical host to a file in batch mode. If you are setting up other Performance Management programs on the same logical host, export the environment definitions after all setup processes have been completed.

To export the logical host environment definition:

1. Execute the `jpccconf ha export (jpchasetup export)` command to export the logical host environment definition.

Output to an export file the definition information for the logical host environment that has been created so far. You can assign any name to the export file.

For example, to export the logical host environment definition to the `lhostexp.txt` file, execute the following command:

```
jpccconf ha export -f lhostexp.txt (jpchasetup export -f lhostexp.txt)
```

■ Copying the logical host environment definition file to the standby node

Copy from the executing node to the standby node the logical host environment definition file exported as described in *Exporting the logical host environment definition* in 4.3.4(4)(b) *Setting up a logical host environment at the executing node*.

■ Unmounting the shared disk

Unmount the file system and finish the procedure. If you will be using the shared disk after the procedure, there is no need to unmount the file system.

Notes

If the shared disk is unmounted but the specified environment directory contains the `jp1pc` directory as well as the files under the `jp1pc` directory, the shared disk has been set up without being mounted. If this is the case, follow the procedure below:

1. Use the `tar` command to archive the `jp1pc` directory in the specified environment directory on the local disk.
2. Mount the shared disk.
3. If the shared disk does not contain the specified environment directory, create it.
4. Expand the `tar` file in the environment directory on the shared disk.
5. Unmount the shared disk.
6. Delete the `jp1pc` directory and all its subdirectories from the specified environment directory on the local disk.

(c) Setting up a logical host environment for the standby system

At the standby node, set up a logical host environment for PFM - Agent for Enterprise Applications.

■ Importing the logical host environment definition

Import the export file that was copied from the executing node to the standby node.

To specify settings for executing at the standby node the Performance Management program on the logical host that was created at the executing node, use the `jpchasetup import` command. If multiple Performance Management programs have been set up on a single logical host, the settings for all the programs are imported in batch mode.

When executing this command, there is no need to keep the shared disk mounted.

To import the logical host environment definition:

1. Execute the `jpccconf ha import (jpchasetup import)` command to import the logical host environment definition.

Execute the following command:

```
jpccconf ha import -f lhostexp.txt (jpchasetup import -f lhostexp.txt)
```

This command changes settings in such a manner that the environment for the standby node becomes the same as in the export file. As a result, setup is performed for starting PFM - Agent for Enterprise Applications on the logical host.

If fixed port numbers were set by the `jpccconf port (jpcnsconfig port)` command during setup, they are also set in the same manner.

2. Execute the `jpccconf port (jpcnsconfig port)` command to check the logical host settings.

Execute the following command:

```
jpccconf ha list -key all (jpchasetup list all)
```

Make sure that the displayed information is the same as when `jpccconf ha list (jpchasetup list)` is executed at the executing node.

(d) Registering into the cluster software

To run a Performance Management program in a logical host environment, you must register the program into the cluster software and set up the environment in such a manner that the Performance Management program starts and terminates from the cluster software.

This subsection describes the settings for registering PFM - Agent for Enterprise Applications into the cluster software.

■ Registering PFM - Agent for Enterprise Applications into the cluster software

In general, the four items that are required for registering an application into UNIX cluster software are *start*, *stop*, *monitoring of action*, and *forced stop*.

The following table describes how to perform various actions with PFM - Agent for Enterprise Applications.

Table 4-16: PFM - Agent for Enterprise Applications control methods to be registered into the cluster software

Item	Description
Start	<p>To start PFM - Agent for Enterprise Applications, execute the following commands, in the order shown:</p> <pre>/opt/jp1pc/tools/jpcspm start (jpcstart) -key AH -lhost=<i>logical-host-name</i> /opt/jp1pc/tools/jpcspm start -key EAP -lhost <i>logical-host-name</i> inst <i>instance-name</i> (jpcstart agtm lhost=<i>logical-host-name</i> inst=<i>instance-name</i>)</pre> <p>Startup occurs as soon as the shared disk and logical IP address are enabled.</p>
Stop	<p>To stop PFM - Agent for Enterprise Applications, execute the following commands, in the order shown:</p> <pre>/opt/jp1pc/tools/jpcspm stop -key EAP -lhost <i>logical-host-name</i> inst <i>instance-name</i> (jpcstop agtm lhost=<i>logical-host-name</i> inst=<i>instance-name</i>) /opt/jp1pc/tools/jpcspm stop (jpcstop) -key AH -lhost=<i>logical-host-name</i></pre> <p>Stop occurs before the shared disk and logical IP address are disabled. If the service has already stopped for a reason such as a failure, the <code>jpcspm stop (jpcstop)</code> command's return value is 3. In such a case, the result is treated as a normal termination because the service is stopped. If the cluster software uses the return value to determine the execution result, take appropriate action, such as setting the return value to 0.</p>

Item	Description
Monitoring of action	<p>Use the <code>ps</code> command to check that the following process is running:</p> <pre>ps -ef grep "process-name logical-host-name" grep -v "grep monitored-process"</pre> <p>The monitored process is as follows: <code>jpcagtm, agtm/jpcsto, jpcsh</code></p> <p>For the process names, see <i>D. List of Processes</i> or the manual <i>Job Management Partner 1/Performance Management Reference</i>. For the possibility that maintenance that has to be performed during operation will require temporary shutdown of Performance Management, you should provide a method for suppressing operation monitoring (for example, suppressing operation monitoring when a maintenance file is detected).</p>
Forced stop	<p>When forced termination is needed, execute the following command:</p> <pre>/opt/jplpc/tools/jpcspm stop (jpcstop) -key all -lhost=logical-host-name -kill=immediate</pre> <p>Only <code>all</code> can be specified in the service key of the first argument.</p> <p>Note</p> <p>This command terminates forcibly all Performance Management processes in the specified logical host environment. This forced termination applies to each logical unit of Performance Management, not to each service.</p> <p>Use forced stop only when normal termination does not work.</p>

Notes

- Because a Performance Management program registered in the cluster is started and stopped from the cluster, do not specify the settings for automatic startup during OS startup.
- If the cluster software uses the command's return value to determine the execution result, specify the settings in such a manner that the Performance Management command's return value is converted to a value that is expected by the cluster software. For details about the return values of Performance Management commands, see the explanation of each command.
- The number of characters displayed by the `ps` command depends on the OS. Set the length to be no greater than 47 characters, including both the logical host name and the instance name. If you use the `ps` command to monitor operations, make sure in advance that all logical hosts will be displayed by the `ps` command. If the display is truncated, change the settings so that monitoring applies to the displayed characters only.
- If you use the `ps` command to monitor operations, execute this command in advance to check that the entire character string consisting of the logical host

name and instance name is displayed. If any part of the character string is missing, shorten the instance name.

(e) Checking startup and stop

Make sure that the Performance Management programs function normally by starting and terminating the programs from the cluster software at each node.

(f) Setting up an environment in the cluster system

When you have finished setting up the Performance Management programs, set up an environment for them so that PFM - Web Console can be used to display monitored program operating status reports as appropriate to the operations and so that it can send notifications to the user in the event of a problem on a monitored program.

For details about how to set up an environment for the Performance Management programs, see the chapter that describes construction and operation in a cluster system in the *Job Management Partner 1/Performance Management User's Guide*.

4.4 Uninstallation and Unsetup

This section describes the procedures for uninstalling and canceling the setup of a PFM - Agent for Enterprise Applications that is running in a cluster system.

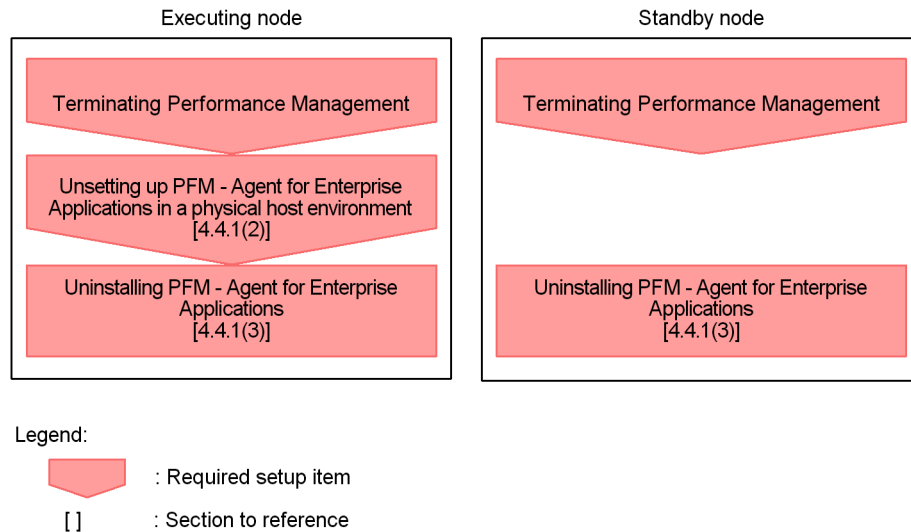
For details about uninstalling and canceling the setup of PFM - Manager, see the chapter that describes construction and operation in a cluster system in the *Job Management Partner 1/Performance Management User's Guide*.

4.4.1 In SAP NetWeaver 7.0 or later (in Windows)

(1) Flow of tasks for uninstallation and unsetup of PFM - Agent for Enterprise Applications

The following figure shows the flow of tasks for uninstalling and canceling the setup of a PFM - Agent for Enterprise Applications that is running in a cluster system.

Figure 4-11: Flow of tasks for uninstalling and canceling the setup of a PFM - Agent for Enterprise Applications that is running on a physical host in a cluster system (in Windows)



(2) Unsetting up PFM - Agent for Enterprise Applications

This subsection describes how to cancel the setup of PFM - Agent for Enterprise Applications.

(a) Canceling the setup of an instance environment

To cancel the setup of an instance environment, first verify the instance name and then delete the instance environment. You cancel an instance environment at the PFM - Agent host.

Use the `jpccconf inst list (jpcinslist)` command to verify the instance name, and then use the `jpccconf inst unsetup (jpcinsunsetup)` command to delete the existing instance environment.

To cancel setup of an instance environment:

1. Find the instance name.

Execute the `jpccconf inst list (jpcinslist)` command with the service key of PFM - Agent for Enterprise Applications specified.

```
jpccconf inst list -key EAP (jpcinslist agtm)
```

If the current instance name is `o246bci_SD5_00`, the command displays `o246bci_SD5_00`.

2. If a PFM - Agent service is running in the instance environment, stop the service.

For details about stopping services, see the chapter that describes starting and stopping services in the *Job Management Partner 1/Performance Management User's Guide*.

3. Delete the instance environment.

Execute the `jpccconf inst unsetup (jpcinsunsetup)` command with the service key and instance name of PFM - Agent for Enterprise Applications specified.

If the existing instance name is `o246bci_SD5_00`, enter the following command:

```
jpccconf inst unsetup -key EAP -inst o246bci_SD5_00
(jpcinsunsetup agtm -inst o246bci_SD5_00)
```

If the `jpccconf inst unsetup (jpcinsunsetup)` command is successful, the folders, service IDs, and Windows services created as the instance environment are deleted.

Note

Canceling the setup of an instance environment does not delete the service information that is displayed by the `jpctool service list (jpcctrl list)` command. For details about how to delete service information, see the section that

describes deleting services in the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

(3) Uninstalling

Uninstall PFM - Agent for Enterprise Applications.

The uninstallation procedure is the same as for non-cluster systems. For details, see *2.2.3 Uninstallation procedure*.

Note

- When you uninstall PFM - Agent for Enterprise Applications, stop all services of the Performance Management programs at the node where PFM - Agent for Enterprise Applications is to be uninstalled.

4.4.2 In SAP NetWeaver 7.0 or later (in UNIX)

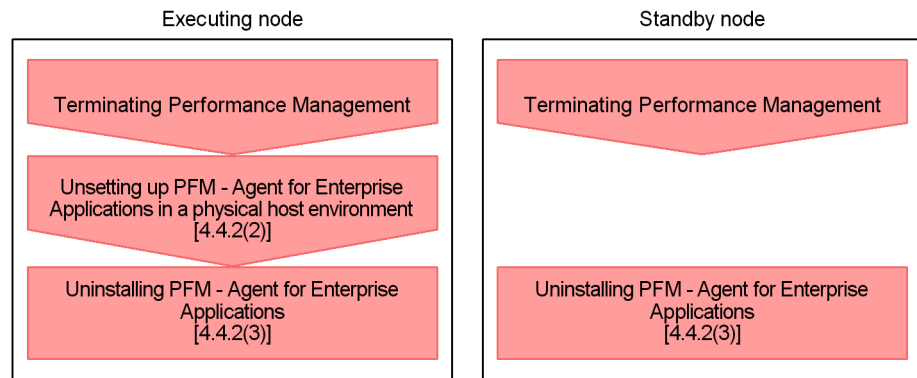
This section describes the procedures for uninstalling and canceling the setup of a PFM - Agent for Enterprise Applications that is running in a cluster system.

For details about how to uninstall and cancel the setup of PFM - Manager, see the chapter that describes configuration and operation in a cluster system in the *Job Management Partner 1/Performance Management User's Guide*.


(1) Flow of tasks for uninstallation and unsetup of PFM - Agent for Enterprise Applications

The following figure shows the flow of tasks for uninstalling and canceling the setup of a PFM - Agent for Enterprise Applications that is running in a cluster system.

Figure 4-12: Flow of tasks for uninstalling and canceling the setup of a PFM - Agent for Enterprise Applications that is running on a physical host in a cluster system (in UNIX)



Legend:

-  : Required setup item
- [] : Section to reference

(2) Unsetting up PFM - Agent for Enterprise Applications

This subsection describes how to cancel the setup of PFM - Agent for Enterprise Applications.

(a) Canceling the setup of an instance environment

To cancel the setup of an instance environment, first verify the instance name and then delete the instance environment. You cancel an instance environment at the PFM - Agent host.

Use the `jpccconf inst list (jpcinslist)` command to verify the instance name, and then use the `jpccconf inst unsetup (jpcinsunsetup)` command to delete the existing instance environment.

To cancel setup of an instance environment:

1. Find the instance name.

Execute the `jpccconf inst list (jpcinslist)` command with the service key of PFM - Agent for Enterprise Applications specified.

```
jpccconf inst list -key EAP (jpcinslist agtm)
```

If the current instance name is `o246bci_SD5_00`, the command displays

o246bci_SD5_00.

2. If a PFM - Agent service is running in the instance environment, stop the service.

For details about stopping services, see the chapter that describes starting and stopping services in the *Job Management Partner 1/Performance Management User's Guide*.

3. Delete the instance environment.

Execute the `jpccconf inst unsetup (jpcinsunsetup)` command with the service key and instance name of PFM - Agent for Enterprise Applications specified.

If the existing instance name is `o246bci_SD5_00`, enter the following command:

```
jpccconf inst unsetup -key EAP -inst o246bci_SD5_00
(jpcinsunsetup agtm -inst o246bci_SD5_00)
```

If the `jpccconf inst unsetup (jpcinsunsetup)` command is successful, the directories and service IDs created as the instance environment are deleted.

Note

Canceling the setup of an instance environment does not delete the service information that is displayed by the `jpctool service list (jpcctrl list)` command. For details about how to delete service information, see the section that describes deleting services in the chapter on installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

(3) Uninstalling

Uninstall PFM - Agent for Enterprise Applications.

The uninstallation procedure is the same as for non-cluster systems. For details, see *3.2.3 Uninstallation procedure*.

Note

- When you uninstall PFM - Agent for Enterprise Applications, stop all services of the Performance Management programs at the node where PFM - Agent for Enterprise Applications is to be uninstalled.

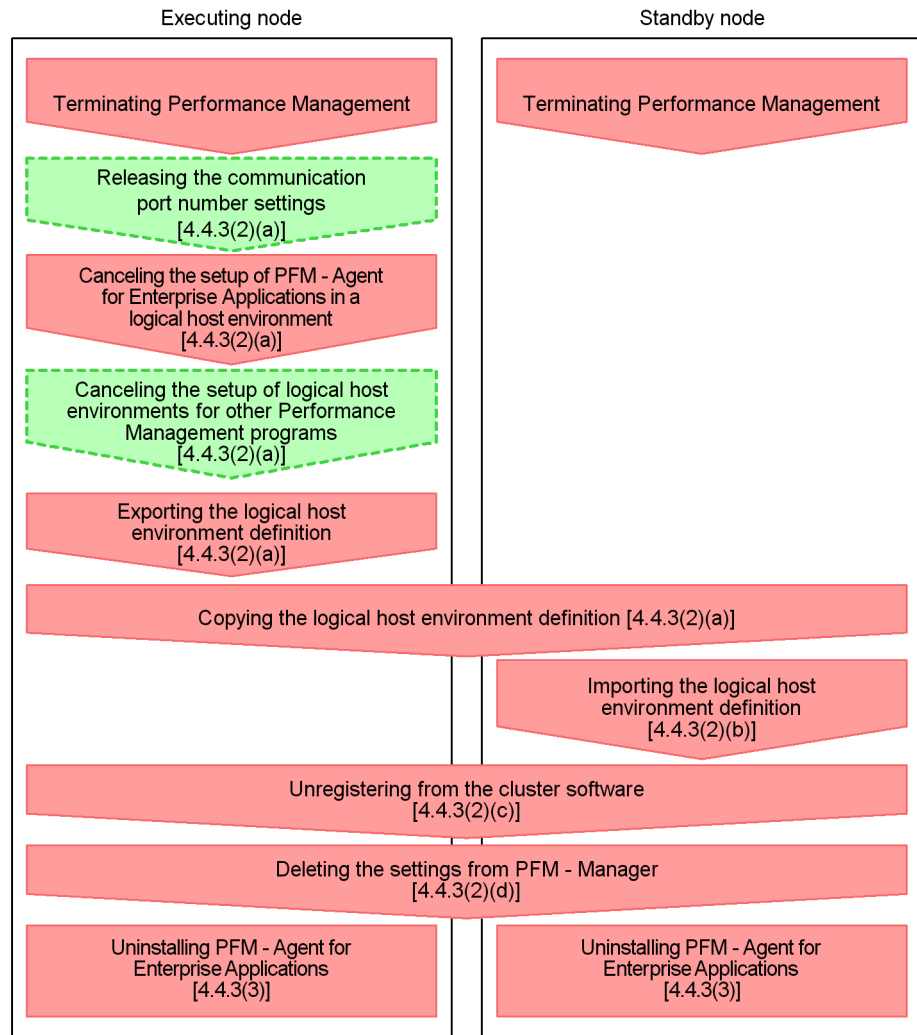
4.4.3 In SAP NetWeaver 2004 or earlier (in Windows)

(1) Flow of tasks for uninstallation and unsetup of PFM - Agent for Enterprise Applications



The following figure shows the flow of tasks for uninstalling and canceling the setup

of a PFM - Agent for Enterprise Applications that is running in a cluster system.

Figure 4-13: Flow of tasks for uninstalling and canceling the setup of a PFM - Agent for Enterprise Applications that is running on a logical host in a cluster system (in Windows)



Legend:

-  : Required setup item
-  : Optional setup item
- [] : Section to reference

(2) Canceling the setup of PFM - Agent for Enterprise Applications

This subsection explains how to cancel the setup of a logical host environment. There are separate setup cancellation procedures for the executing node and the standby node. First perform the procedure for the executing node, and then perform the procedure for the standby node.

The following describes the procedures for canceling the setup of PFM - Agent for Enterprise Applications.

Note

You must stop all services of the Performance Management programs running at the executing and standby nodes where setup is to be canceled. For details about how to stop services, see the chapter that describes configuration and operation in a cluster system in the *Job Management Partner 1/Performance Management User's Guide*.

(a) Canceling the setup of the logical host environment at the executing node

You must first cancel the setup of the logical host environment for PFM - Agent for Enterprise Applications at the executing node.

■ Placing the shared disk online

Make sure that the shared disk is in online status. If it is not online, use a program such as the cluster software or a volume manager to place it online.

■ Releasing the port number settings

This procedure is required only when the `jpccconf port (jpcnsconfig port)` command was used to set port numbers during setup in an environment that uses a firewall.

For details about how to release port numbers, see the chapter that describes installation and setup and the chapter that describes configuration and operations in a cluster system in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

■ Canceling the setup of PFM - Agent for Enterprise Applications in a logical host environment

Note

If a logical host environment is deleted while the shared disk is offline, the logical host settings are deleted from the physical host, but the directories and files are not deleted from the shared disk. In such a case, you must place the shared disk online and manually delete the `jp1pc` directory under the environment directory.

To cancel the setup of PFM - Agent for Enterprise Applications in a logical host environment:

1. Execute the `jpccconf ha list -key all (jpchasetup list)` command to check the logical host settings.

Execute the following command:

```
jpccconf ha list -key all -lhost jpl-halr3 (jpchasetup list
-lhost jpl-halr3)
```

You must check the current settings before you cancel the setup of the logical host environment. Check such information as the name of the logical host and the shared disk path.

2. Delete the instance environment for PFM - Agent for Enterprise Applications.

Execute the following command:

```
jpccconf inst unsetup -key EAP -lhost jpl-halr3 -inst
o246bci_SD5_00 (jpcinsunsetup agtm -lhost jpl-halr3 -inst
o246bci_SD5_00)
```

The `jpccconf inst unsetup (jpcinsunsetup)` command deletes the settings needed to start an instance at the logical host. It also deletes the files associated with the instance from the shared disk.

3. Execute the `jpccconf ha unsetup (jpchasetup delete)` command to delete the logical host environment for PFM - Agent for Enterprise Applications.

Execute the following command:

```
jpccconf ha unsetup -key EAP -lhost jpl-halr3 (jpchasetup
delete agtm -lhost jpl-halr3)
```

The `jpccconf ha unsetup (jpchasetup delete)` command deletes the settings needed to start PFM - Agent for Enterprise Applications on the logical host. It also deletes the files associated with the logical host from the shared disk.

4. Execute the `jpccconf ha list -key all (jpchasetup list)` command to check the logical host settings.

Execute the following command:

```
jpccconf ha list -key all (jpchasetup list)
```

Make sure that PFM - Agent for Enterprise Applications has been deleted from the logical host environment.

■ Canceling the setup of logical host environments for other Performance Management programs

If you are canceling the setup of PFM - Agents other than PFM - Agent for Enterprise

Applications from the same logical host, do so at this stage.

For details about the procedure for canceling such a setup, see the chapter that describes configuration and operations in a cluster system in the *Job Management Partner 1/Performance Management User's Guide* or the chapter that describes operations in a cluster system in the applicable PFM - Agent manual.

■ Exporting the logical host environment definition

Once you have deleted PFM - Agent for Enterprise Applications from the logical host, you must export the environment definition to a file.

Performance Management achieves a matching environment in both the executing system and the standby system by importing and exporting environment definitions.

When the environment definition exported from the executing node (definition from which the Performance Management definition has been deleted) is imported to the standby node, the system compares it with the environment definition existing in the standby node (definition that still contains the Performance Management definition) to determine the differences (the parts deleted at the executing node) and then deletes the Performance Management environment definition.

To export the logical host environment definition:

1. Execute the `jpccconf ha export (jpchasetup export)` command to export the logical host environment definition.

Output the logical host environment definition information for Performance Management to an export file. You can assign any name to the export file.

For example, to export the logical host environment definition to the `lhostexp.txt` file, execute the following command:

```
jpccconf ha export -f lhostexp.txt (jpchasetup export -f lhostexp.txt)
```

■ Copying the logical host environment definition file to the standby node

Copy from the executing node to the standby node the logical host environment definition file exported as described in *Exporting the logical host environment definition* in 4.4.3(2)(a) *Canceling the setup of the logical host environment at the executing node*.

■ Placing the shared disk offline

Use a program such as the cluster software or a volume manager to place the shared disk in offline status and then finish the procedure. If you will be using the shared disk after the procedure, there is no need to place it offline.

(b) Canceling the setup of the logical host environment at the standby node

Copy the file exported from the executing node to the standby node and then cancel

the setup of the logical host environment at the standby node. At the standby node, there is no need to place the shared disk in online status during the setup cancellation procedure.

To cancel the setup of the logical host environment at the standby node:

1. Execute the `jpccconf ha import (jpchasetup import)` command to import the logical host environment definition.

Execute the following command:

```
jpccconf ha import -f lhostexp.txt (jpchasetup import -f
lhostexp.txt)
```

This command changes settings in such a manner that the environment for the standby node becomes the same as in the export file. As a result, the settings for starting PFM - Agent for Enterprise Applications on the logical host are deleted. If you have canceled the setup of other Performance Management programs on the logical host, their settings are also deleted.

If fixed port numbers were set by the `jpccconf port (jpcnsconfig port)` command during setup, they are also released.

2. Execute the `jpccconf ha list -key all (jpchasetup list)` command to check the logical host settings.

Execute the following command:

```
jpccconf ha list -key all (jpchasetup list)
```

Make sure that the displayed information is the same as when `jpccconf ha list -key all (jpchasetup list)` is executed at the executing node.

(c) Unregistering PFM - Agent for Enterprise Applications from the cluster software

Delete the settings related to PFM - Agent for Enterprise Applications from the cluster software on the logical host.

For details about how to delete the settings, see the cluster software documentation.

(d) Deleting the settings from PFM - Manager

Use PFM - Web Console to log on to PFM - Manager and delete the definitions related to the PFM - Agent for Enterprise Applications whose setup is being canceled.

To delete the settings from PFM - Manager:

1. From PFM - Web Console, delete the agent.
2. Delete the agent information from PFM - Manager.

4. Operation in a Cluster System

For example, if PFM - Manager is running on logical host `jp1-hal` and PFM - Agent for Enterprise Applications is running on logical host `jp1-halr3`, execute the following command:

```
jpctool service delete -id service-ID -host jp1-halr3 -lhost  
jp1-hal (jpcctrl delete service-ID host=jp1-halr3  
lhost=jp1-hal)
```

For *service-ID*, specify the service ID of the agent that is to be deleted.

3. Restart the PFM - Manager service.

For details about how to start services, see the chapter that describes startup and termination of Performance Management in the *Job Management Partner 1/ Performance Management User's Guide*.

4. Restart PFM - Web Console.

To apply the deletion of service information to PFM - Web Console, you must restart PFM - Web Console after restarting the PFM - Manager service.

(3) Uninstalling

Uninstall PFM - Agent for Enterprise Applications.

The uninstallation procedure is the same as for non-cluster systems. For details, see *2.2.3 Uninstallation procedure*.

Notes

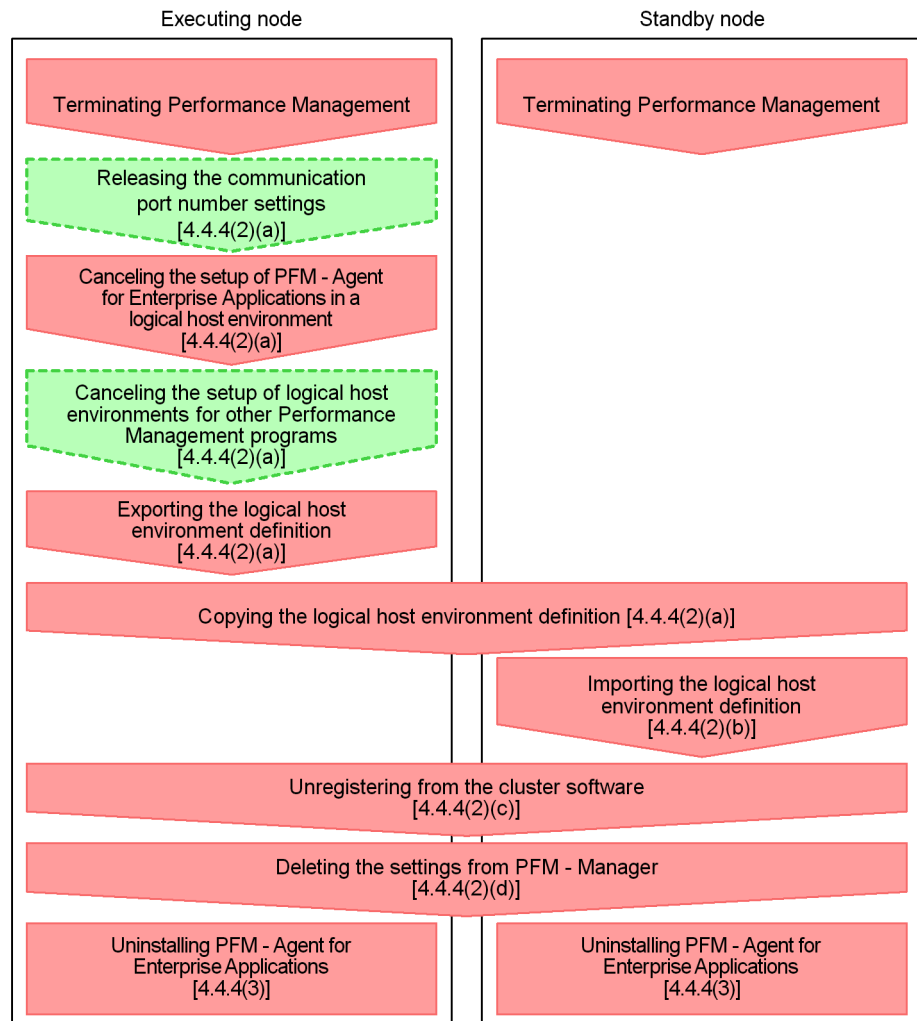
- When you uninstall PFM - Agent for Enterprise Applications, stop all services of the Performance Management programs at the node where PFM - Agent for Enterprise Applications is to be uninstalled.
- If you uninstall PFM - Agent for Enterprise Applications without deleting the logical host environment, the environment directories might remain. In such a case, delete the environment directories.

4.4.4 In SAP NetWeaver 2004 or earlier (in UNIX)



(1) Flow of tasks for uninstallation and unsetup of PFM - Agent for Enterprise Applications

The following figure shows the flow of tasks for uninstalling and canceling the setup of a PFM - Agent for Enterprise Applications that is running in a cluster system.

Figure 4-14: Flow of tasks for uninstalling and canceling the setup of a PFM - Agent for Enterprise Applications that is running on a logical host in a cluster system (in UNIX)



Legend:

-  : Required setup item
-  : Optional setup item
- [] : Section to reference

(2) Canceling the setup of PFM - Agent for Enterprise Applications

This subsection explains how to cancel the setup of a logical host environment. There are separate setup cancellation procedures for the executing node and the standby node. First perform the procedure for the executing node, and then perform the procedure for the standby node.

The following describes the procedures for canceling the setup of PFM - Agent for Enterprise Applications.

Note

You must stop all services of the Performance Management programs running at the executing and standby nodes where setup is to be canceled. For details about how to stop services, see the chapter that describes configuration and operation in a cluster system in the *Job Management Partner 1/Performance Management User's Guide*.

(a) Canceling the setup of the logical host environment at the executing node

You must first cancel the setup of the logical host environment for PFM - Agent for Enterprise Applications at the executing node.

■ Mounting the shared disk

Make sure that the shared disk is mounted. If it is not mounted, mount it.

Notes

If the shared disk is unmounted but the environment directory of the logical host whose setup is to be canceled contains the `jp1pc` directory as well as files under the `jp1pc` directory, the shared disk has been set up without being mounted. If this is the case, do the following:

1. Use the `tar` command to archive the `jp1pc` directory into the environment directory on a local disk of the logical host whose setup is to be canceled.
2. Mount the shared disk.
3. If the shared disk does not contain the environment directory of the logical host whose setup is to be canceled, create one.
4. On the shared disk, expand the `tar` file in the environment directory of the logical host whose setup is to be canceled.
5. Unmount the shared disk.
6. Delete the `jp1pc` directory and all its subdirectories from the environment directory on the local disk of the logical host whose setup is to be canceled.

■ Releasing the port number settings

This procedure is required only when the `jpccconf port (jpcnsconfig port)` command was used to set port numbers during setup in an environment that uses a firewall.

For details about how to release port numbers, see the chapter that describes installation and setup and the chapter that describes configuration and operations in a cluster system in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

■ Canceling the setup of PFM - Agent for Enterprise Applications in a logical host environment

Note

If a logical host environment is deleted while the shared disk is not mounted, the logical host settings are deleted from the physical host, but the directories and files are not deleted from the shared disk. In such a case, you must mount the shared disk and manually delete the `jp1pc` directory under the environment directory.

To cancel the setup of PFM - Agent for Enterprise Applications in a logical host environment:

1. Execute the `jpccconf ha list -key all (jpchasetup list)` command to check the logical host settings.

Execute the following command:

```
jpccconf ha list -key all -lhost jp1-halr3 (jpchasetup list
-lhost jp1-halr3)
```

You must check the current settings before you cancel the setup of the logical host environment. Check such information as the name of the logical host and the shared disk path.

2. Delete the instance environment for PFM - Agent for Enterprise Applications.

Execute the following command:

```
jpccconf inst unsetup -key EAP -lhost jp1-halr3 -inst
o246bci_SD5_00 (jpcinsunsetup agtm -lhost jp1-halr3 -inst
o246bci_SD5_00)
```

The `jpccconf inst unsetup (jpcinsunsetup)` command deletes the settings needed to start an instance at the logical host. It also deletes the files associated with the instance from the shared disk.

3. Execute the `jpccconf ha unsetup (jpchasetup delete)` command to delete the logical host environment for PFM - Agent for Enterprise Applications.

Execute the following command:

```
jpccconf ha unsetup -key EAP (jpchasetup delete agtm) -lhost  
jp1-halr3
```

The `jpccconf ha unsetup (jpchasetup delete)` command deletes the settings needed to start PFM - Agent for Enterprise Applications on the logical host. It also deletes the files associated with the logical host from the shared disk.

4. Execute the `jpccconf ha list -key all (jpchasetup list)` command to check the logical host settings.

Execute the following command:

```
jpccconf ha list -key all (jpchasetup list)
```

Make sure that PFM - Agent for Enterprise Applications has been deleted from the logical host environment.

■ **Canceling the setup of logical host environments for other Performance Management programs**

If you are canceling the setup of PFM - Agents other than PFM - Agent for Enterprise Applications from the same logical host, do so at this stage.

For details about the procedure for canceling such a setup, see the chapter that describes configuration and operations in a cluster system in the *Job Management Partner I/Performance Management User's Guide* or the chapter that describes operations in a cluster system in the applicable PFM - Agent manual.

■ **Exporting the logical host environment definition**

Once you have deleted PFM - Agent for Enterprise Applications from the logical host, you must export the environment definition to a file.

Performance Management achieves a matching environment in both the executing system and the standby system by importing and exporting environment definitions.

When the environment definition exported from the executing node (definition from which the Performance Management definition has been deleted) is imported to the standby node, the system compares it with the environment definition existing in the standby node (definition that still contains the Performance Management definition) to determine the differences (the parts deleted at the executing node) and then deletes the Performance Management environment definition.

To export the logical host environment definition:

1. Execute the `jpccconf ha export (jpchasetup export)` command to export the logical host environment definition.

Output the logical host environment definition information for Performance

Management to an export file. You can assign any name to the export file.

For example, to export the logical host environment definition to the `lhostexp.txt` file, execute the following command:

```
jpccconf ha export -f lhostexp.txt (jpchasetup export -f
lhostexp.txt)
```

■ Copying the logical host environment definition file to the standby node

Copy from the executing node to the standby node the logical host environment definition file exported as described in *Exporting the logical host environment definition in 4.4.4(2)(a) Canceling the setup of the logical host environment at the executing node.*

■ Unmounting the shared disk

Unmount the file system and then finish the procedure. If you will be using the shared disk after the procedure, there is no need to unmount the file system.

(b) Canceling the setup of the logical host environment at the standby node

Copy the file exported from the executing node to the standby node and cancel setup of the logical host environment at the standby node. There is no need at the standby node to unmount the shared disk during the setup cancellation procedure.

To cancel the setup of the logical host environment at the standby node:

1. Execute the `jpccconf ha import (jpchasetup import)` command to import the logical host environment definition.

Execute the following command:

```
jpccconf ha import -f lhostexp.txt (jpchasetup import -f
lhostexp.txt)
```

This command changes settings in such a manner that the environment for the standby node becomes the same as in the export file. As a result, the settings for starting PFM - Agent for Enterprise Applications on the logical host are deleted. If you have canceled the setup of other Performance Management programs on the logical host, their settings are also deleted.

If fixed port numbers were set by the `jpccconf port (jpcnsconfig port)` command during setup, they are also released.

2. Execute the `jpccconf ha list -key all (jpchasetup list)` command to check the logical host settings.

Execute the following command:

```
jpccconf ha list -key all (jpchasetup list)
```

Make sure that the displayed information is the same as when `jpccconf ha list -key all (jpchasetup list)` is executed at the executing node.

(c) Unregistering PFM - Agent for Enterprise Applications from the cluster software

Delete the settings related to PFM - Agent for Enterprise Applications from the cluster software on the logical host.

For details about how to delete the settings, see the cluster software documentation.

(d) Deleting the settings from PFM - Manager

Use PFM - Web Console to log on to PFM - Manager and delete the definitions related to the PFM - Agent for Enterprise Applications whose setup is being canceled.

To delete the settings from PFM - Manager:

1. From PFM - Web Console, delete the agent.
2. Delete the agent information from PFM - Manager.

For example, if PFM - Manager is running on logical host `jp1-hal` and PFM - Agent for Enterprise Applications is running on logical host `jp1-halr3`, execute the following command:

```
jpctool service delete -id service-ID -host jp1-halr3 -lhost  
jp1-hal (jpcctrl delete service-ID host=jp1-halr3  
lhost=jp1-hal)
```

In *service-ID*, specify the service ID of the agent that is to be deleted.

3. Restart the PFM - Manager service.

For details about how to start services, see the chapter that describes startup and termination of Performance Management in the *Job Management Partner 1/ Performance Management User's Guide*.

(3) Uninstalling

Uninstall PFM - Agent for Enterprise Applications.

The uninstallation procedure is the same as for non-cluster systems. For details, see *3.2.3 Uninstallation procedure*.

Notes

- When you uninstall PFM - Agent for Enterprise Applications, stop all services of the Performance Management programs at the node where PFM - Agent for Enterprise Applications is to be uninstalled.
- If you uninstall PFM - Agent for Enterprise Applications without deleting the logical host environment, the environment directories might remain. In such a case, delete the environment directories.

4.5 Changing the system configuration of PFM - Agent for Enterprise Applications

You must change the system configuration for PFM - Agent for Enterprise Applications whenever a change occurs in the system, such as a change in a monitored system's network configuration or a change in host names. This section describes how to change the system configuration for PFM - Agent for Enterprise Applications.

If you change a host name, the host name of the SAP system on that host must also be changed. The setting to be changed is as follows:

- ASHOST

For details about how to change the setting, see *4.6.1 Settings for updating an instance environment*. If any other settings are changed in the connection-target SAP system, you must also update the instance environment.

When you change the system configuration for PFM - Agent for Enterprise Applications, you must also change the settings for PFM - Manager and PFM - Web Console. For details about how to change the system configuration for Performance Management, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

4.6 Changing the PFM - Agent for Enterprise Applications operation method

This section describes how to change the PFM - Agent for Enterprise Applications operation method in a cluster system. If you use SAP NetWeaver version 7.0 or later, see *2.4 Changing the PFM - Agent for Enterprise Applications operation method* (in Windows) or *3.4 Changing the PFM - Agent for Enterprise Applications operation method* (in UNIX). For details about how to change the operating method for the entire Performance Management, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

4.6.1 Settings for updating an instance environment

If you wish to update an instance environment in the cluster system, find the correct host name and instance name, and then update the instance information. Specify the instance information on the PFM - Agent host at the executing node.

To check in advance the information to be updated, see *2.4.3 Settings for updating an instance environment* (in Windows) or *3.4.3 Settings for updating an instance environment* (in UNIX). For details about the instance information for an SAP system, see the SAP system documentation.

Use the `jpccconf ha list -key all (jpchasetup list)` command to find the logical host name and instance name, and use the `jpccconf inst setup (jpcinssetup)` command to update the instance environment.

This subsection describes how to update an instance environment. You must repeat this procedure for each instance environment you wish to update.

To update an instance environment:

1. Find the logical host name and instance name.

Execute the `jpccconf ha list (jpchasetup list)` command, specifying the service key that indicates the PFM - Agent for Enterprise Applications running in the instance environment to be updated.

For example, to check the logical host name and instance name of PFM - Agent for Enterprise Applications, execute the following command:
`jpccconf ha list -key EAP (jpchasetup list agtm)`

If the specified logical host name is `jp1_EAP` and instance name is `EAP1`, the command displays the following information:

Logical Host Name	Key	Environment Directory	Instance Name
jp1_EAP	agtm	<i>logical-host-path</i>	EAP1

- If the PFM - Agent for Enterprise Applications service is running for the instance environment that is to be updated, stop the service from the cluster software.
- If the shared disk is unmounted in step 2, mount the shared disk using the cluster software or volume manager.
- Execute the `jpccconf inst setup (jpcinssetup)` command, specifying the service key and instance name of the PFM - Agent for Enterprise Applications for the instance environment that you wish to update.

For example, if you are updating the instance environment for the PFM - Agent for Enterprise Applications whose logical host name is `jp1_EAP` and instance name is `EAP1`, execute the command as follows:

```
jpccconf inst setup -key EAP -lhost jp1_EAP -inst EAP1
(jpcinssetup agtm -lhost jp1_EAP -inst EAP1)
```

- Update the instance information for the SAP system.

Enter the instance information for PFM - Agent for Enterprise Applications according to the command's instructions. For details about the instance information for PFM - Agent for Enterprise Applications, see *2.4.3 Settings for updating an instance environment* (in Windows) or *3.4.3 Settings for updating an instance environment* (in UNIX). The current settings are displayed (except for the value of `PASSWORD`). To use a displayed value, press the **Enter** key. When all entries are completed, the instance environment is updated.

- Restart the services in the updated instance environment from the cluster software.

For details about how to start and stop services, see the chapter that describes starting and stopping Performance Management in the *Job Management Partner I/Performance Management User's Guide*.

Note

To change the value of an item that cannot be updated, delete the instance environment and then re-create it.

For details about the commands, see the chapter that describes commands in the manual *Job Management Partner I/Performance Management Reference*.

Chapter

5. Extracting System Log Information

This chapter describes the procedure for extracting system log information with PFM - Agent for Enterprise Applications.

- 5.1 Overview of the system log information extraction function
- 5.2 Extracting system log information
- 5.3 Environment parameters file
- 5.4 Using a command to extract system log information

5.1 Overview of the system log information extraction function

You can use PFM - Agent for Enterprise Applications to output periodically to text files the system log information that constitutes a record of the events and errors that occur in the SAP system. The system log information extraction function provided by PFM - Agent for Enterprise Applications can output the following system log information to a text file:

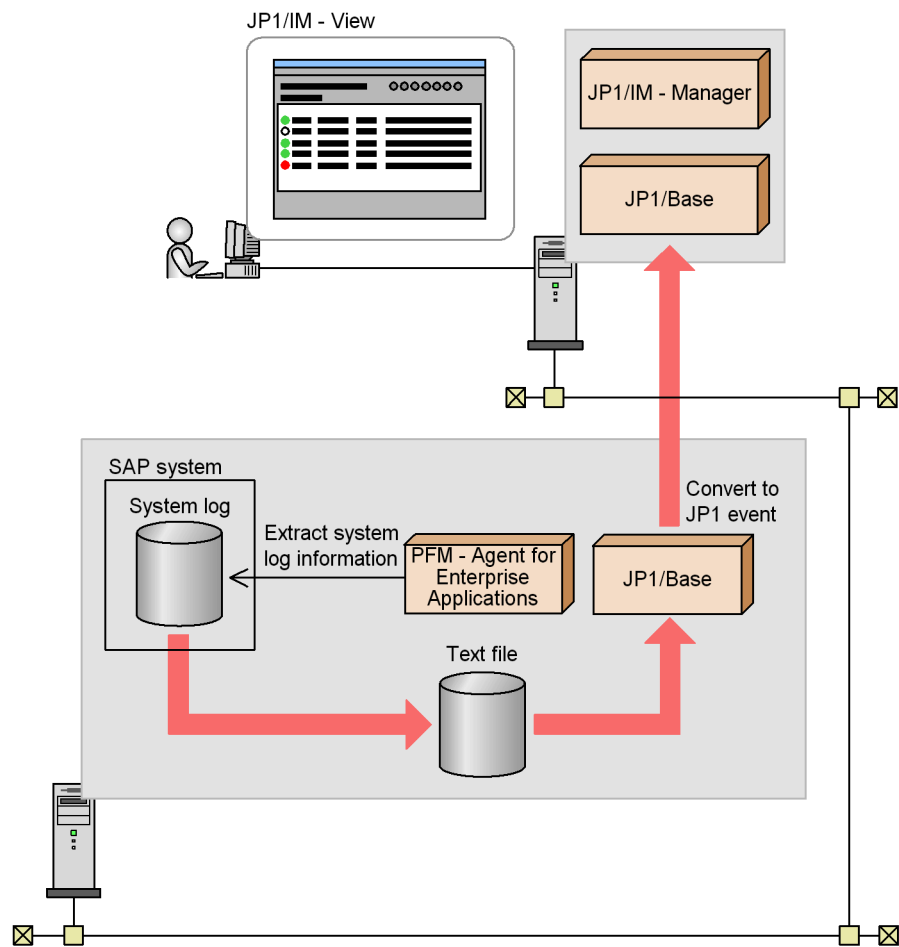
- Message recording time
- Server that recorded the message
- User who recorded the message
- Program that recorded the message
- Message number
- Message

By linking other programs, you can use the system log information in a text file to monitor the status of the SAP system. This section presents an example of status monitoring by linking to JP1/Base and JP1/IM - View.


The log file trapping function of JP1/Base enables you to convert system log information to JP1 events. By monitoring these JP1 events from JP1/IM - View, you can monitor the status of the SAP system from JP1/IM - View.

The following figure shows an example of monitoring the status of an SAP system by linking PFM - Agent for Enterprise Applications with JP1/Base and JP1/IM - View.

Figure 5-1: Example of monitoring the status of an SAP system by linking with JP1/Base and JP1/IM - View



Legend:

 : Flow of system log information

Note

The text file to which PFM - Agent for Enterprise Applications outputs system log information is in wraparound format, which means that data is overwritten when the capacity reaches a specified value. There is a header line of management information at the beginning of the file. If you use JP1/Base's log file trapping function to monitor this file, specify the following parameters in the log file trap definition file:

```
FILETYPE=WRAP1  
HEADLINE=1
```

- To monitor the SAP system log in SAP NetWeaver PI 7.1, you must change the SAP profile. This is because the default SAP local system log collection method is set to HTTP in the SAP central log function, so you must change HTTP to RFC. Specifically, add the following parameter to the SAP profile:

```
rslg/central/log/new = 0
```

Once you make this setting, the SAP central log function that requires HTTP will be disabled in a Windows version. This is not a problem if you use a JP1 product to collect SAP local system logs to achieve central management, because the SAP central log function is not used. There are no other limitations to the SAP NetWeaver functions.

5.2 Extracting system log information

This section describes the procedure for extracting the system log information of an SAP system and provides an example of the output.

To extract system log information, you must set up your PFM - Agent for Enterprise Applications to store performance data in the Store database in System Log Monitor Command (PD_SLMX) records. Each time performance data is collected in a System Log Monitor Command (PD_SLMX) record, the system information is then extracted automatically. The previous record collection time is recorded in the timestamp file, and only the system log information that occurs after that time is extracted. The default is for the system log information of the SAP system to be output to the following text file:

Operating environment	System log information storage file
Windows	<i>installation-folder</i> \agtm\agent\ <i>instance-name</i> \log\SYSLOG
Windows (for logical host operation)	<i>environment-directory</i> \jplpc\agtm\agent\ <i>instance-name</i> \log\SYSLOG
UNIX	/opt/jplpc/agtm/agent/ <i>instance-name</i> /log/SYSLOG
UNIX (for logical host operation)	<i>environment-directory</i> [#] /jplpc/agtm/agent/ <i>instance-name</i> /log/SYSLOG

#

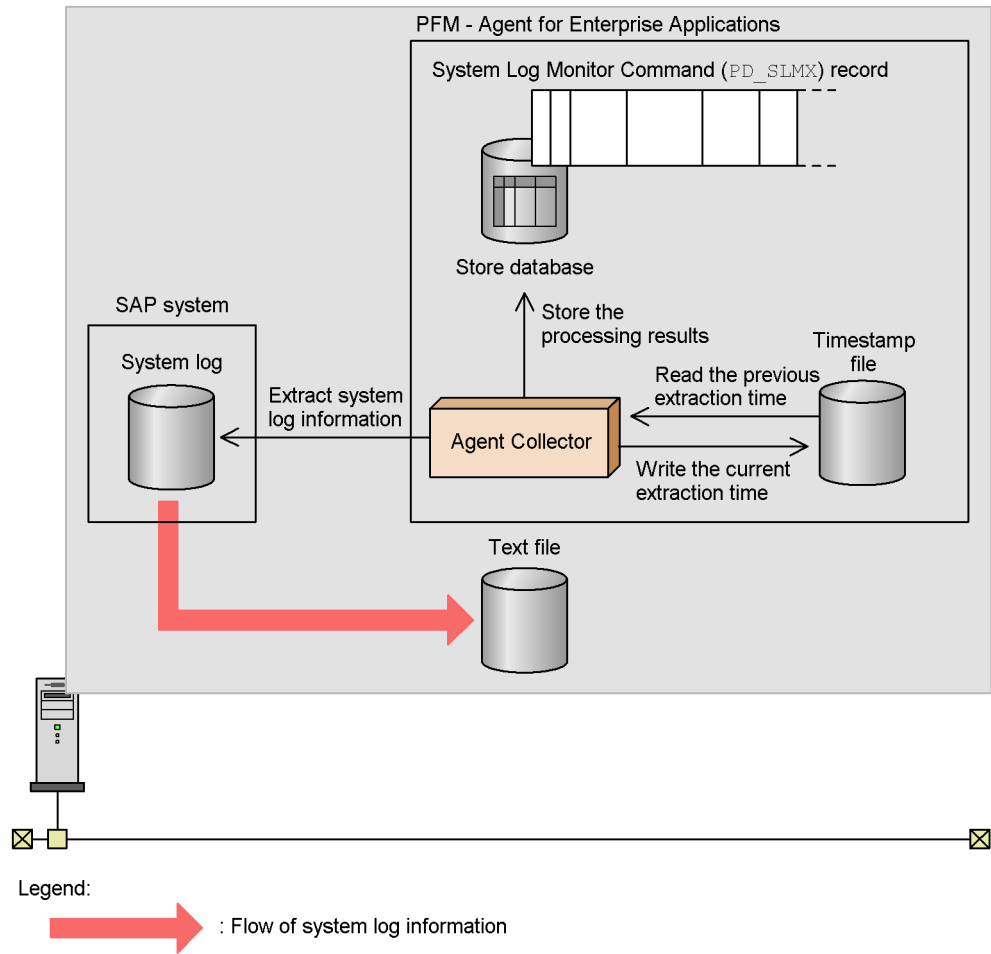
The environment directory is on the shared disk that was specified when the logical host was created.

The processing result is stored in a System Log Monitor Command (PD_SLMX) record.

For details about the System Log Monitor Command (PD_SLMX) record, see [9. Records](#).

The following figure shows the procedure for extracting the system log information of an SAP system.

Figure 5-2: Procedure for extracting system log information



5.2.1 Setup

This section describes the setup procedure for extracting the system log information of an SAP system.

Note

You can change default settings (such as the target file name for system log information) by editing the environment parameters file and then executing this setup. For details about the environment parameters file, see 5.3 *Environment parameters file*.

To set up:

1. Use PFM - View to set up your PFM - Agent for Enterprise Applications so that performance data is stored in System Log Monitor Command (PD_SLMX) records in the Store database.

For details about the setup procedure, see the chapter that describes management of operation monitoring data in the *Job Management Partner 1/Performance Management User's Guide*.

5.2.2 Output example

The following is an example of the system log information output of an SAP system:

```
13:58:04o246bci_SD5_00 SAPSYS SAPMSSY8R49Communicatin error, CPIC retrun code 027,  
SAP return code 456  
13:58:04o246bci_SD5_00 SAPSYS SAPMSSY8R64> CPI-C function: CMINIT(SAP)
```

5.3 Environment parameters file

This section describes the environment parameters file.

The environment parameters file is used to specify such information as the file name of the output destination for the system log information. PFM - Agent for Enterprise Applications extracts system log information from the SAP system on the basis of the settings you have specified in the environment parameters file.

This is a text file created by the user.

5.3.1 Setup procedure

To set up the environment parameters file:

1. Open the environment parameters file.

The environment parameters file is as follows:

Operating environment	Environment parameters file
Windows	<i>installation-folder</i> \agtm\agent\ <i>instance-name</i> \jr3slget.ini
Windows (for logical host operation)	<i>environment-directory</i> #\jplpc\agtm\agent\ <i>instance-name</i> \jr3slget.ini
UNIX	/opt/jplpc/agtm/agent/ <i>instance-name</i> /jr3slget.ini
UNIX (for logical host operation)	<i>environment-directory</i> #/jplpc/agtm/agent/ <i>instance-name</i> /jr3slget.ini

#

The environment directory is on the shared disk that was specified when the logical host was created.

2. Edit the settings.

The settings that are specified in the environment parameters file are as follows. You can modify the shaded section (for details about the settings, see 5.3.2 *Settings*):


```

[EXTRACTFILE]
SIZE=1024
X2PATH=log\SYSLOG#

[FORMAT]
COLUMN=<TIME>
COLUMN=<INSTANCE>
COLUMN=<USER>
COLUMN=<PROGRAM>
COLUMN=<MSGNO>
COLUMN=<MSGTEXT>

[TRACE]
MSGLOG_LEVEL=2
MSGLOG_SIZE=512
MSGLOG_DIR=log
DATALOG_LEVEL=2
DATALOG_SIZE=512
DATALOG_DIR=log

;[CONNECT]
;LANG=EN
;CODEPAGE=1100

```

A line beginning with a semicolon (;) is a comment line. The setting on such a line is not enabled. To enable the setting, remove the semicolon.

This is the setting in Windows. In UNIX, it is `log/SYSLOG`.

3. Save the environment parameters file.

5.3.2 Settings

Specify the settings in the environment parameters file in the following format:

```

[section]
label=value
label=value
...
...
[section]
label=value
label=value

```

Notes

- Do not specify any unneeded characters, such as spaces at the beginning of a line or before and after an equals sign (=).

- The values specified in *section* and *label* are not case-sensitive.
- A line beginning with a semicolon (;) is treated as a comment.

The following tables describe the contents of each section in the environment parameters file.

(1) EXTRACTFILE section

The EXTRACTFILE section specifies information about the file to which system log information is to be output.

Table 5-1: Values permitted in the EXTRACTFILE section

Label	Description	Permitted values	Default value
SIZE	Size of the output file: <ul style="list-style-type: none"> • 0: Maximum value for the system^{#1} • 1-65535: Wraparound within the specified size (in kilobytes) 	0-65535	1024
X2PATH	Path to the output file ^{#2, #3}	1-255 single-byte alphanumeric characters. If a relative path is specified, it is treated as the path relative to the instance environment directory.	<ul style="list-style-type: none"> • In Windows: log\SYSLOG • In UNIX: log/SYSLOG

#1

This is 0x7FFFFFFF (about 2 gigabytes), which can be expressed as a 32-bit signed integer.

#2

A management file named *output-file-name*.ofs is created in the same directory as the specified output file (e.g., if SYSLOG is specified as the output file name, SYSLOG.ofs is created as a management file in addition to the SYSLOG file). If you delete this output file, make sure that you also delete the management file.

#3

If the default storage location is changed, the jpcras command cannot collect the information in the event of a problem.

(2) FORMAT section

The FORMAT section specifies the output format of the system log information.

Table 5-2: Values permitted in the FORMAT section

Label	Description	Permitted values	Default values
COLUMN	Output format of system log information	Field ID. For details about the field ID, see <i>10. Commands</i> .	Column 1: <TIME> Column 2: <INSTANCE> Column 3: <USER> Column 4: <PROGRAM> Column 5: <MSGNO> Column 6: <MSGTEXT>

(3) TRACE section

The TRACE section specifies information about the message log and data log that store the history of system log information extraction.

Table 5-3: Values permitted in the TRACE section

Label	Description	Permitted values	Default value
MSGLOG_LEVEL	Message log collection level for saving application trace information: <ul style="list-style-type: none"> • 0: Do not collect • 1: Collect only errors • 2: Standard • 3: Details • 4: Debug 	0-4	2
MSGLOG_SIZE	File size for collecting the message log: <ul style="list-style-type: none"> • 0: Maximum value for the system[#] • 1-65535: Wraparound within the specified size (in kilobytes) 	0-65535	512
MSGLOG_DIR	Message log file (jr3slget.log) collection-target directory	(Cannot be changed)	log
DATALOG_LEVEL	Data log collection level for saving various types of data information for applications: <ul style="list-style-type: none"> • 0: Do not collect • 1: Collect only errors • 2: Standard • 3: Details • 4: Debug 	0-4	2

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Label	Description	Permitted values	Default value
DATALOG_SIZE	File size for collecting the data log: <ul style="list-style-type: none"> 0: Maximum value for the system[#] 1-65535: Wraparound within the specified size (in kilobytes) 	0-65535	512
DATALOG_DIR	Data log file (jr3slget.dat) collection-target directory	(Cannot be changed)	log

#

This is 0x7FFFFFFF (about 2 gigabytes), which can be expressed as a 32-bit signed integer.

(4) CONNECT section

The CONNECT section specifies information needed to establish RFC connection with the SAP system.

Table 5-4: Values permitted in the CONNECT section

Label	Description	Permitted value	Default value
LANG	User language used for connection	2-byte ISO ID or 1-byte language key that is used in the SAP system: <ul style="list-style-type: none"> EN or E 	None
CODEPAGE	Code page used to convert character codes in the Unicode version of the SAP system at the destination	Value combined with the language in the LANG label [#]	None

#

Set the LANG and CODEPAGE labels in the applicable combination shown below. If any other combination of language and code page is specified, an encoding error might occur in the information acquired from the SAP system.

Table 5-5: Combination of language and code page specifications

Connection-target SAP system	Connection language	Language (LANG)	Code page (CODEPAGE)
Unicode version	English	EN	No need to specify. If you specify a code page, specify 1100.

Connection-target SAP system	Connection language	Language (LANG)	Code page (CODEPAGE)
Non-Unicode version	English	EN	No need to specify. If you specify a code page, specify 1100.

If you omit specification of the `LANG` label, the user language defined in the connection-target system is assumed.

If you omit specification of the `CODEPAGE` label, the default code page in the connection-target system is assumed.

5.4 Using a command to extract system log information

You can also extract the system log information of an SAP system by executing the `jr3slget` command manually or by having another program execute it automatically. This section describes the use of the `jr3slget` command to extract system log information.

5.4.1 Before executing the command

You should check the following items before you execute the `jr3slget` command to extract the system log information of an SAP system:

- Settings in the environment parameters file

This is not the same environment parameters file that is used to extract system log information using System Log Monitor Command (PD_SLMX) records. For details about this environment parameters file, which is used in conjunction with extracting system log information by command execution, see *5.4.3 Environment parameters file for extracting system log information by command execution*.

- Command execution environment

Check that:

- There are no errors in the network settings
- The SAP system is running
- The SAP system is ready to accept RFC requests

5.4.2 Using the command to extract system log information

When you execute the `jr3slget` command (either manually or automatically from another program), you can select the system log information to be extracted from the SAP system as follows:

- Extract all system log information that has been output so far on the day the command is executed.
- Extract only the system log information that has been output since the last time the command was executed.

For details about the `jr3slget` command, see *10. Commands*.

Note

If you specify values for the same parameter in both the environment parameters file and the `jr3slget` command, the value in the command takes effect.

The two extraction methods are explained below.

(1) Extracting all system log information that has been output so far on the day the command is executed

The following command specification extracts all system log information that has been output so far on the day the command is executed (this example assumes that values have been defined for the `CONNECT` and `TARGET` sections in the environment parameters file):

```
jr3slget
```

(2) Extracting only the system log information that has been output since the last time the command was executed

To extract only the system log information that has been output since the last time the command was executed, execute the command with the timestamp file specified in the `-lasttime` option. The timestamp file contains a history of the execution dates and times for the `jr3slget` command. When you execute the command repeatedly specifying the same timestamp file, you extract consecutive system log information without any duplication.

Note

If the timestamp file specified in the `-lasttime` option does not exist when the command is executed for the first time, the command creates a new timestamp file, in which case no system log information is reported.

The following command specification extracts only the system log information that has been output since the last time the command was executed (this example assumes that values have been defined for the `CONNECT` and `TARGET` sections in the environment parameters file):

```
jr3slget -lasttime sltimestamp.txt
```

5.4.3 Environment parameters file for extracting system log information by command execution

If you specify an environment parameters file as an argument in the `jr3slget` command, the command extracts the system log information of the SAP system based on the settings in the file.

This is a text file created by the user.

(1) Setup procedure

To set up the environment parameters file:

1. Copy the sample environment parameters file under the name `jr3slget.ini`.

This `jr3slget.ini` becomes the default environment parameters file. The sample environment parameters file is as follows:

In Windows:

installation-folder\agtm\evtrap\jr3slget.ini.sample

In UNIX:

/opt/jp1pc/agtm/evtrap/jr3slget.ini.sample

2. Open the *jr3slget.ini* file.
3. Edit the settings.

The settings in the default environment parameters file are as follows; for details about the settings, see (2) below:

```
[CONNECT]
ASHOST=localhost
SYSNR=00
CLIENT=000
USER=CPIC
PASSWD=ADMIN
;LANG=EN
;CODEPAGE=1100

[COMMAND]
;WORKDIR=

[TRACE]
MSGLOG_LEVEL=2
MSGLOG_SIZE=512
MSGLOG_DIR=.
DATALOG_LEVEL=2
DATALOG_SIZE=512
DATALOG_DIR=.

[TARGET]
;SERVER=

[FORMAT]
;COLUMN=<TIME>
;COLUMN=<INSTANCE>
;COLUMN=<USER>
;COLUMN=<PROGRAM>
;COLUMN=<MSGNO>
;COLUMN=<MSGTEXT>

[EXTRACTFILE]
SIZE=1024
X2PATH=SYSLOG
```

In the case of an item that begins with a semicolon (;), the setting is disabled by default, because the semicolon indicates that it is a comment line. To enable the setting, remove the semicolon.

4. Save the environment parameters file.

By specifying the `-cnf` option in the `jr3slget` command, you can extract the system log information of the SAP system based on the settings in the environment parameters file.

(2) Settings

Specify the settings in the environment parameters file in the following format:

```
[section]
label=value
label=value
...
...
[section]
label=value
label=value
```

Notes

- Do not specify any unneeded characters, such as spaces at the beginning of a line or before and after an equals sign (=).
- The values specified in *section* and *label* are not case-sensitive.
- A line beginning with a semicolon (;) is treated as a comment.

The following tables describe the contents of each section in the environment parameters file. In a table, the *Argument* column indicates the argument that is specified in the `jr3slget` command, if applicable. N/A means that the item cannot be specified with the command.

(a) CONNECT section

The `CONNECT` section specifies information needed to establish RFC connection with the SAP system at the time of command execution.

Table 5-6: Values permitted in the CONNECT section

Label	Description	Permitted values	Default value	Argument
ASHOST	Host name of the connection-target application server (which can be verified by transaction code <code>SM51</code>)	1-100 single-byte alphanumeric characters in one of the following formats: <ul style="list-style-type: none"> • Host name specified in the <code>hosts</code> file • IP address • SAP router address 	localhost	-h

5. Extracting System Log Information

Label	Description	Permitted values	Default value	Argument
SYSNR	System number that can be identified by the connection-target application server host	0-99	00	-s
CLIENT	User's client name used for establishing connection	0-999	000	-c
USER	User name used for establishing connection ^{#1}	1-12 single-byte alphanumeric characters	CPIC	-u
PASSWD	User's password used for establishing connection ^{#2}	1-8 single-byte characters ^{#3}	ADMIN	-p
PASSWD2	User's extended password used for establishing connection ^{#2}	1-40 single-byte characters ^{#3}	ADMIN	-p2
LANG	User language used for connection	2-byte ISO ID or 1-byte language key that is used in the SAP system: • EN OR E	None	-l
CODEPAGE	Code page used to convert character codes in the Unicode version of the SAP system at the destination	Value combined with the language in the LANG label ^{#4}	None	-codepage

#1

The user specified in this label must have already been granted the following authorizations:

Table 5-7: Authorizations required by the user to establish RFC connection with function modules (S_RFC)

Authorization	Description	Value
RFC_TYPE	Type of RFC object to be protected	FUGR (function group)
RFC_NAME	RFC name to be protected	*
ACTVT	Activity	16 (execution)

Table 5-8: Authorizations required for use of external management interfaces (S_XMI_PROD)

Authorization	Description	Value
EXTCOMPANY	Company name of the external management tool	HITACHI
EXTPRODUCT	Program name of the external management tool	JP1
INTERFACE	Interface ID	XAL

You can use the following user types for the user specified in this label:

- Dialog
- System
- Communication
- Service

#2

The `PASSWD` and `PASSWD2` labels are mutually exclusive.

#3

A user's password or extended password that is used for establishing connection must consist of single-byte numeric characters (from 0 to 9), single-byte alphabetic characters (from a to z, A to Z), and the following single-byte symbols:

!, @, \$, %, &, /, (,), =, ?, ', ^, *, +, ~, #, -, _, ., :, {, [,], }, <, >, |

#4

Set the `LANG` and `CODEPAGE` labels in the applicable combination shown below. If any other combination of language and code page is specified, an encoding error might occur in the information acquired from the SAP system.

Table 5-9: Combination of language and code page specifications

Connection-target SAP system	Connection language	Language (LANG)	Code page (CODEPAGE)
Unicode version	English	EN	No need to specify. If you specify a code page, specify 1100.
Non-Unicode version	English	EN	No need to specify. If you specify a code page, specify 1100.

If you omit specification of the `LANG` label, the user language defined in the

connection-target system is assumed.

If you omit specification of the CODEPAGE label, the default code page in the connection-target system is assumed.

(b) COMMAND section

The COMMAND section specifies information about the work directory for the jr3slget command.

Table 5-10: Values permitted in the COMMAND section

Label	Description	Permitted values	Default value	Argument
WORKDIR	Work directory for the command	1-255 single-byte alphanumeric characters. If a relative path is specified, it is treated as the path relative to the current directory.	Current directory	N/A

(c) TRACE section

The TRACE section specifies information about the message log and data log that store the history of system log information extraction.

Table 5-11: Values permitted in the TRACE section

Label	Description	Permitted values	Default value	Argument
MSGLOG_LEVEL	Message log collection level for saving application trace information: <ul style="list-style-type: none"> 0: Do not collect 1: Collect only errors 2: Standard 3: Details 4: Debug 	0-4	2	N/A
MSGLOG_SIZE	File size for collecting the message log: <ul style="list-style-type: none"> 0: Maximum value for the system[#] 1-65535: Wraparound within the specified size (in kilobytes) 	0-65535	512	N/A

Label	Description	Permitted values	Default value	Argument
MSGLOG_ DIR	Message log file (jr3slget.log) collection-target directory	1-255 single-byte alphanumeric characters. The total length, including file name jr3slget.log, must not exceed 255 bytes. If a relative path is specified, it is treated as the path relative to the work directory for the command.	Work directory for the command (or the current directory if it has not been changed by the WORKDIR label in the COMMAND section)	N/A
DATALOG _LEVEL	Data log collection level for saving various types of data information for applications: <ul style="list-style-type: none"> • 0: Do not collect • 1: Collect only errors • 2: Standard • 3: Details • 4: Debug 	0-4	2	N/A
DATALOG _SIZE	File size for collecting the data log: <ul style="list-style-type: none"> • 0: Maximum value for the system[#] • 1-65535: Wraparound within the specified size (in kilobytes) 	0-65535	512	N/A
DATALOG _DIR	Data log file (jr3slget.dat) collection-target directory	1-255 single-byte alphanumeric characters. The total length, including file name jr3slget.dat, must not exceed 255 bytes. If a relative path is specified, it is treated as the path relative to the work directory for the command.	Work directory for the command (or the current directory if it has not been changed by the WORKDIR label in the COMMAND section)	N/A

#

This is 0x7FFFFFFF (about 2 gigabytes), which can be expressed as a 32-bit signed integer.

(d) TARGET section

The TARGET section specifies information that identifies the system log information to be extracted.

Table 5-12: Values permitted in the TARGET section

Label	Description	Permitted values	Default value	Argument
SERVER	SAP instance name (the SAP instance name that has a dialog service, and which can be verified by transaction code SM51)	1-20 single-byte alphanumeric characters	(None)	-server

(e) FORMAT section

The FORMAT section specifies the output format of the system log information.

Table 5-13: Values permitted in the FORMAT section

Label	Description	Permitted values	Default values	Argument
COLUMN	Output format of system log information	Field ID. For details about the field ID, see 10. <i>Commands</i> .	Column 1: <TIME> Column 2: <INSTANCE> Column 3: <USER> Column 4: <PROGRAM> Column 5: <MSGNO> Column 6: <MSGTEXT>	N/A

(f) EXTRACTFILE section

The EXTRACTFILE section specifies information about the output file for the system log information.

Table 5-14: Values permitted in the EXTRACTFILE section

Label	Description	Permitted values	Default value	Argument
SIZE	Size of output file: <ul style="list-style-type: none"> 0: Maximum value for the system^{#1} 1-65535: Wraparound within the specified size (in kilobytes) 	0-65535	1024	N/A

Label	Description	Permitted values	Default value	Argument
X2PATH	Log file path that is used when log file output is specified with the <code>-x2</code> option of the <code>jr3slget</code> command ^{#2}	1-255 single-byte alphanumeric characters. If a relative path is specified, it is treated as the path relative to the work directory for the command (or the current directory if it has not been changed by the <code>WORKDIR</code> label in the <code>COMMAND</code> section)	SYSLOG	N/A

#1

This is 0x7FFFFFFF (about 2 gigabytes), which can be expressed as a 32-bit signed integer.

#2

A management file named *output-file-name*.`ofs` is created in the same directory as the specified output file (e.g., if `SYSLOG` is specified as the output file name, `SYSLOG.ofs` is created as a management file in addition to the `SYSLOG` file). If you delete this output file, make sure that you also delete the management file.

Chapter

6. Extracting CCMS Alert Information

This chapter describes the procedure for extracting CCMS alert information with PFM - Agent for Enterprise Applications.

- 6.1 Overview of the CCMS alert information extraction function
- 6.2 Extracting CCMS alert information
- 6.3 Environment parameters file
- 6.4 Using a command to extract CCMS alert information

6.1 Overview of the CCMS alert information extraction function

You can use PFM - Agent for Enterprise Applications to output periodically to text files the warning (alert information) that occurs on Alert Monitor in the computer center management system (CCMS). The CCMS alert information extraction function provided by PFM - Agent for Enterprise Applications can output the following CCMS alert information to a text file:

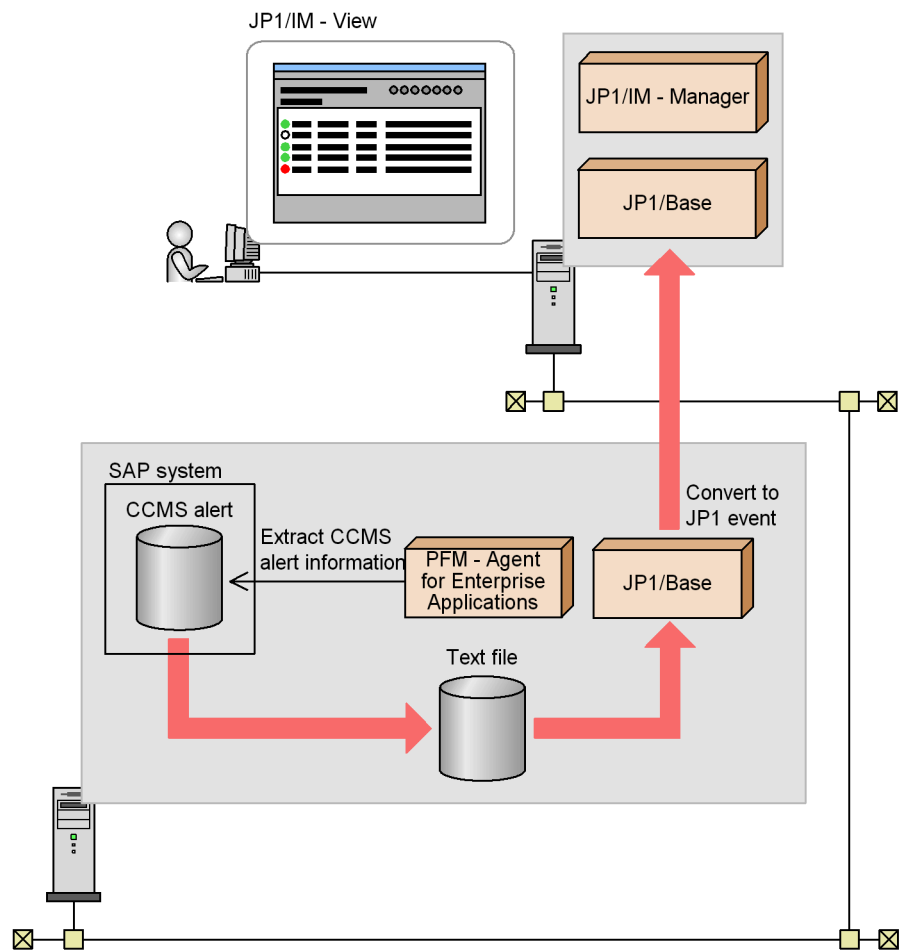
- Alert ID
- ID of MTE associated with the alert
- Severity level of the alert
- General properties
- Message

By linking other programs, you can use the CCMS alert information in a text file to monitor for error information in the SAP system. This section presents an example of error monitoring by linking to JP1/Base and JP1/IM - View.


The log file trapping function of JP1/Base enables you to convert CCMS alert information to JP1 events. By monitoring these JP1 events from JP1/IM - View, you can monitor error information in the SAP system from JP1/IM - View.

The following figure shows an example of monitoring an SAP system for errors by linking PFM - Agent for Enterprise Applications with JP1/Base and JP1/IM - View.

Figure 6-1: Example of monitoring an SAP system for errors by linking with JP1/Base and JP1/IM - View



Legend:

 : Flow of CCMS alert information

Note

The text file to which PFM - Agent for Enterprise Applications outputs CCMS alert information is in wraparound format. This means that data is overwritten when the capacity reaches a specified value. There is a header line of management information at the beginning of the file. If you use JP1/Base's log file trapping function to monitor this file, specify the following parameters in the log file trap definition file:

```
FILETYPE=WRAP1  
HEADLINE=1
```

6.2 Extracting CCMS alert information

This section describes the procedure for extracting the CCMS alert information of an SAP system and provides an example of the output.

To extract CCMS alert information, you must set up your PFM - Agent for Enterprise Applications to store performance data in the Store database in CCMS Alert Monitor Command (PD_ALMX) records. Each time performance data is collected in CCMS Alert Monitor Command (PD_ALMX) record, the CCMS alert information is then extracted automatically. The previous record collection time is recorded in the timestamp file and only the CCMS alert information that occurs after that time is extracted. The default is for the CCMS alert information of the SAP system to be output to the following text file:

Operating environment	CCMS alert information storage file
Windows	<i>installation-folder</i> \agtm\agent\ <i>instance-name</i> \log\ALERT
Windows (for logical host operation)	<i>environment-directory</i> #\jplpc\agtm\agent\ <i>instance-name</i> \log\ALERT
UNIX	/opt/jplpc/agtm/agent/ <i>instance-name</i> /log/ALERT
UNIX (for logical host operation)	<i>environment-directory</i> #/jplpc/agtm/agent/ <i>instance-name</i> /log/ALERT

#

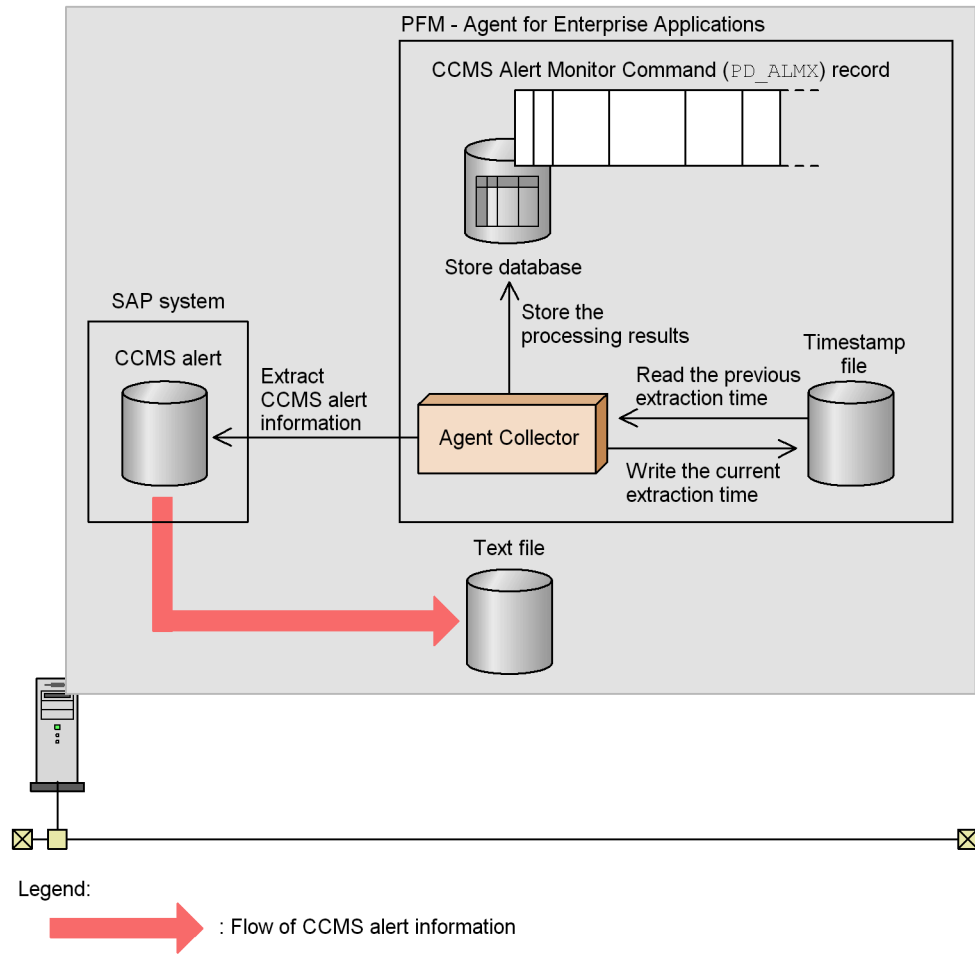
The environment directory is on the shared disk that was specified when the logical host was created.

The processing result is stored in a CCMS Alert Monitor Command (PD_ALMX) record.

For details about the CCMS Alert Monitor Command (PD_ALMX) record, see *9. Records*.

The following figure shows the procedure for extracting the CCMS alert information of an SAP system:

Figure 6-2: Procedure for extracting CCMS alert information



6.2.1 Setup

This section describes the setup procedure for extracting the CCMS alert information of an SAP system.

Note

You can change default settings (such as the target file name for CCMS alert information) by editing the environment parameters file and then executing this setup. For details about the environment parameters file, see 6.3 *Environment parameters file*.

To set up:

1. Use PFM - View to set up your PFM - Agent for Enterprise Applications so that performance data is stored in CCMS Alert Monitor Command (PD_ALMX) records in the Store database.

For details about the setup procedure, see the chapter that describes management of operation monitoring data in the *Job Management Partner 1/Performance Management User's Guide*.

6.2.2 Output example

The following is an example of the CCMS alert information output of an SAP system:

```
20030321171911SD5 o246bci_SD5_00 Background AbortedJobs Job  
DBA:CHECKOPT_____@021500/6007 (ID number 02153101) terminated20030321171911SD5  
o246bci_SD5_00 GenericKey SpaceUsed 95 % > 90 % 15 min. avg. value over threshold  
value
```

6.3 Environment parameters file

This section describes the environment parameters file.

The environment parameters file is used to specify such information as the file name of the output destination for the CCMS alert information. PFM - Agent for Enterprise Applications extracts CCMS alert information from the SAP system on the basis of the settings you have specified in the environment parameters file.

This is a text file created by the user.

6.3.1 Setup procedure

To set up an environment parameters file:

1. Open the environment parameters file.

The environment parameters file is as follows:

Operating environment	Environment parameters file
Windows	<i>installation-folder</i> \agtm\agent\ <i>instance-name</i> \jr3alget.ini
Windows (for logical host operation)	<i>environment-directory</i> #\jplpc\agtm\agent\ <i>instance-name</i> \jr3alget.ini
UNIX	/opt/jplpc/agtm/agent/ <i>instance-name</i> /jr3alget.ini
UNIX (for logical host operation)	<i>environment-directory</i> #/jplpc/agtm/agent/ <i>instance-name</i> /jr3alget.ini

#

The environment directory is on the shared disk that was specified when the logical host was created.

2. Edit the settings.

The settings that are specified in the environment parameters file are as follows. You can modify the shaded section (for details about the settings, see [6.3.2 Settings](#)).


```
[TARGET]
MONITOR_SET=SAP CCMS Monitor Templates
MONITOR=Entire System
```

```
[EXTRACTFILE]
SIZE=1024
X2PATH=log\ALERT#
```

```
[FORMAT]
COLUMN=<ALERTDATE>
COLUMN=<ALERTTIME>
COLUMN=<MTSYSID>
COLUMN=<MTMCNAME>
COLUMN=<OBJECTNAME>
COLUMN=<FIELDNAME>
COLUMN=<VALUE>
COLUMN=<SEVERITY>
COLUMN=<MSG>
```

```
[TRACE]
MSGLOG_LEVEL=2
MSGLOG_SIZE=512
MSGLOG_DIR=log
DATALOG_LEVEL=2
DATALOG_SIZE=512
DATALOG_DIR=log
```

```
:[CONNECT]
;LANG=EN
;CODEPAGE=1100
```

A line beginning with a semicolon (;) is a comment line. The setting on such a line is not enabled. To enable the setting, remove the semicolon.

This is the setting in Windows. In UNIX, it is `log/ALERT`.

3. Save the environment parameters file.

6.3.2 Settings

Specify the settings in the environment parameters file in the following format:

```
[section]
label=value
label=value
...
...
[section]
label=value
```

label=value

Notes

- Do not specify any unneeded characters, such as spaces at the beginning of a line or before and after an equals sign (=).
- The values specified in *section* and *label* are not case-sensitive.
- A line beginning with a semicolon (;) is treated as a comment.

The following tables describe the contents of each section in the environment parameters file.

(1) **TARGET section**

The TARGET section specifies information that identifies the CCMS alert information to be extracted.

Table 6-1: Values permitted in the TARGET section

Label	Description	Permitted values	Default value
MONITOR_SET#	Monitor set name (name displayed as CCMS monitor set on the SAP system Alert Monitor (transaction code RZ20))	1-60 single-byte alphanumeric characters	SAP CCMS Monitor Templates
MONITOR#	Monitor name (name displayed in the tree of the CCMS monitor set on the SAP system Alert Monitor (transaction code RZ20))	1-60 single-byte alphanumeric characters	Entire System

#

Specifying multiple targets is not permitted. To monitor multiple monitors, use the CCMS function of the SAP system to combine all the targets to be monitored into a single monitor, and then monitor this monitor from PFM - Agent for Enterprise Applications.

(2) **EXTRACTFILE section**

The EXTRACTFILE section specifies information about the file to which CCMS alert information is to be output.

Table 6-2: Values permitted in the EXTRACTFILE section

Label	Description	Permitted values	Default value
SIZE	Size of output file: <ul style="list-style-type: none"> 0: Maximum value for the system^{#1} 1-65535: Wraparound within the specified size (in kilobytes) 	0-65535	1024
X2PATH	Path to the output file ^{#2, #3}	1-255 single-byte alphanumeric characters. If a relative path is specified, it is treated as the path relative to the instance environment directory.	<ul style="list-style-type: none"> In Windows: log\ALERT In UNIX: log/ALERT

#1

This is 0x7FFFFFFF (about 2 gigabytes), which can be expressed as a 32-bit signed integer.

#2

A management file named *output-file-name.ofs* is created in the same directory as the specified output file (for example, if ALERT is specified as the output file name, ALERT.ofs is created as a management file in addition to the ALERT file). If you delete this output file, make sure that you also delete the management file.

#3

If the default storage location is changed, the jpcras command cannot collect the information in the event of a problem.

(3) FORMAT section

The FORMAT section specifies the output format of the CCMS alert information.

Table 6-3: Values permitted in the FORMAT section

Label	Description	Permitted values	Default values
COLUMN	Output format of CCMS alert information	Field ID. For details about the field ID, see 10. <i>Commands</i> .	Column 1: <ALERTDATE> Column 2: <ALERTTIME> Column 3: <MTSYSID> Column 4: <MTMCNAME> Column 5: <OBJECTNAME> Column 6: <FIELDNAME> Column 7: <VALUE> Column 8: <SEVERITY> Column 9: <MSG>

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Label	Description	Permitted values	Default values
TIMEZONE	<p>Time zone specification for the time information of the following field IDs</p> <ul style="list-style-type: none"> • <ALERTDATE> • <ALERTTIME> • <STATCHGDAT> • <STATCHGTIM> 	<ul style="list-style-type: none"> • UTC The command will output time information in UTC (Coordinated Universal Time). • LOCAL The command will output time information in the local time of the user who executes the command. 	UTC

(4) TRACE section

The TRACE section specifies information about the message log and data log that store the history of CCMS alert information extraction.

Table 6-4: Values permitted in the TRACE section

Label	Description	Permitted values	Default value
MSGLOG_LEVEL	<p>Message log collection level for saving application trace information:</p> <ul style="list-style-type: none"> • 0: Do not collect • 1: Collect only errors • 2: Standard • 3: Details • 4: Debug 	0-4	2
MSGLOG_SIZE	<p>File size for collecting the message log:</p> <ul style="list-style-type: none"> • 0: Maximum value for the system[#] • 1-65535: Wraparound within the specified size (in kilobytes) 	0-65535	512
MSGLOG_DIR	<p>Message log file (jx3alget.log) collection-target directory</p>	(Cannot be changed)	log

Label	Description	Permitted values	Default value
DATALOG_LEVEL	Data log collection level for saving various types of data information for applications: <ul style="list-style-type: none"> 0: Do not collect 1: Collect only errors 2: Standard 3: Details 4: Debug 	0-4	2
DATALOG_SIZE	File size for collecting the data log: <ul style="list-style-type: none"> 0: Maximum value for the system[#] 1-65535: Wraparound within the specified size (in kilobytes) 	0-65535	512
DATALOG_DIR	Data log file (jr3alget.dat) collection-target directory	(Cannot be changed)	log

#

This is 0x7FFFFFFF (about 2 gigabytes), which can be expressed as a 32-bit signed integer.

(5) **CONNECT** section

The **CONNECT** section specifies information needed to establish RFC connection with the SAP system.

*Table 6-5: Values permitted in the **CONNECT** section*

Label	Description	Permitted values	Default value
LANG	User language used for connection	2-byte ISO ID or 1-byte language key that is used in the SAP system: <ul style="list-style-type: none"> EN or E 	None
CODEPAGE	Code page used to convert character codes in the Unicode version of the SAP system at the destination	Value combined with the language code in the LANG label [#]	None

#

Set the LANG and CODEPAGE labels in the applicable combination shown below. If any other combination of language and code page is specified, an encoding error might occur in the information acquired from the SAP system.

Table 6-6: Combination of language and code page specifications

Connection-target SAP system	Connection language	Language (LANG)	Code page (CODEPAGE)
Unicode version	English	EN	No need to specify. If you specify a code page, specify 1100.
Non-Unicode version	English	EN	No need to specify. If you specify a code page, specify 1100.

If you omit specification of the LANG label, the user language defined in the connection-target system is assumed.

If you omit specification of the CODEPAGE label, the default code page in the connection-target system is assumed.

6.4 Using a command to extract CCMS alert information

You can also extract the CCMS alert information of an SAP system by executing the `jr3alget` command manually or by having another program execute it automatically. This section describes use of the `jr3alget` command to extract CCMS alert information.

6.4.1 Before executing the command

You should check the following items before you execute the `jr3alget` command to extract the CCMS alert information of an SAP system:

- Settings in the environment parameters file

This is not the same environment parameters file that is used to extract CCMS alert information using CCMS Alert Monitor Command (PD_ALMX) records. For details about this environment parameters file, which is used in conjunction with extracting CCMS alert information by command execution, see 6.4.3 *Environment parameters file for extracting CCMS alert information by command execution*.

- Command execution environment

Check that:

- There are no errors in the network settings
- The SAP system is running
- The SAP system is ready to accept RFC requests

6.4.2 Using the command to extract CCMS alert information

When executing the `jr3alget` command (either manually or automatically from another program), you can select the CCMS alert information to be extracted from the SAP system as follows:

- Extract all CCMS alert information that has been output so far on the day the command is executed.
- Extract only the CCMS alert information that has been output since the last time the command was executed.

For details about the `jr3alget` command, see 10. *Commands*.

Notes

- The CCMS alert information is treated as a single resource in the SAP system and can be referenced from any application servers; therefore, the target can be any application server. Execute only one command per SAP

system.

- If you specify values for the same parameter in both the environment parameters file and the `jr3alget` command, the value in the command takes effect.

The two extraction methods are explained below.

(1) Extracting all CCMS alert information that has been output so far on the day the command is executed

The following command specification extracts all CCMS alert information that has been output so far on the day the command is executed (this example assumes that values have been defined for the `CONNECT` and `TARGET` sections in the environment parameters file):

```
jr3alget
```

(2) Extracting only the CCMS alert information that has been output since the last time the command was executed

To extract only the CCMS alert information that has been output since the last time the command was executed, execute the command with the timestamp file specified in the `-lasttime` option. The timestamp file contains a history of the execution dates and times for `jr3alget` command. When you execute the command repeatedly specifying the same timestamp file, you extract consecutive CCMS alert information without any duplication.

Note

If the timestamp file specified in the `-lasttime` option does not exist when the command is executed for the first time, the command creates a new timestamp file, in which case no CCMS alert information is reported.

The following command specification extracts only the CCMS alert information that has been output since the last time the command was executed (this example assumes that values have been defined for the `CONNECT` and `TARGET` sections in the environment parameters file):

```
jr3alget -lasttime altimestamp.txt
```

6.4.3 Environment parameters file for extracting CCMS alert information by command execution

If you specify an environment parameters file as an argument in the `jr3alget` command, the command extracts the CCMS alert information of the SAP system based on the settings in the file.

This is a text file created by the user.

(1) Setup procedure

To set up the environment parameters file:

1. Copy the sample environment parameters file under the name `jr3alget.ini`.

This `jr3alget.ini` becomes the default environment parameters file. The sample environment parameters file is as follows:

In Windows:

```
installation-folder\agtm\evtrap\jr3alget.ini.sample
```

In UNIX:

```
/opt/jp1pc/agtm/evtrap/jr3alget.ini.sample
```

2. Open the `jr3alget.ini` file.
3. Edit the settings.

The settings in the default environment parameters file are as follows; for details about the settings, see (2) below.

```

[CONNECT]
ASHOST=localhost
SYSNR=00
CLIENT=000
USER=CPIC
PASSWD=ADMIN
;LANG=EN
;CODEPAGE=1100

[COMMAND]
;WORKDIR=

[TRACE]
MSGLOG_LEVEL=2
MSGLOG_SIZE=512
MSGLOG_DIR=.
DATALOG_LEVEL=2
DATALOG_SIZE=512
DATALOG_DIR=.

[TARGET]
;MONITOR_SET=SAP CCMS Technical Expert Monitors
;MONITOR=All Monitoring Contexts

[FORMAT]
;COLUMN=<ALERTDATE>
;COLUMN=<ALERTTIME>
;COLUMN=<MTSYSID>
;COLUMN=<MTMCNAME>
;COLUMN=<OBJECTNAME>
;COLUMN=<FIELDNAME>
;COLUMN=<VALUE>
;COLUMN=<SEVERITY>
;COLUMN=<MSG>

[EXTRACTFILE]
SIZE=1024
X2PATH=ALERT

```

In the case of an item that begins with a semicolon (;), the setting is disabled by default, because the semicolon indicates that it is a comment line. To enable the setting, remove the semicolon.

4. Save the environment parameters file.

By specifying the `-cnf` option in the `jr3alget` command, you can extract the CCMS alert information of the SAP system based on the settings in the environment parameters file.

(2) Settings

Specify the settings in the environment parameters file in the following format:

```
[section]
label=value
label=value
...
...
[section]
label=value
label=value
```

Notes

- Do not specify any unneeded characters, such as spaces at the beginning of a line or before and after an equals sign (=).
- The values specified in *section* and *label* are not case-sensitive.
- A line beginning with a semicolon (;) is treated as a comment.

The following tables describe the contents of each section in the environment parameters file. In a table, the *Argument* column indicates the argument that is specified in the `jr3alget` command, if applicable. N/A means that the item cannot be specified with the command.

(a) CONNECT section

The **CONNECT** section specifies information needed to establish RFC connection with the SAP system at the time of command execution.

Table 6-7: Values permitted in the CONNECT section

Label	Description	Permitted values	Default value	Argument
ASHOST	Host name of the connection-target application server (which can be verified by transaction code <code>SM51</code>)	1-100 single-byte alphanumeric characters in one of the following formats: <ul style="list-style-type: none"> • Host name specified in the <code>hosts</code> file • IP address • SAP router address 	localhost	-h
SYSNR	System number that can be identified by the connection-target application server host	0-99	00	-s
CLIENT	User's client name used for establishing connection	0-999	000	-c

6. Extracting CCMS Alert Information

Label	Description	Permitted values	Default value	Argument
USER	User name used for establishing connection ^{#1}	1-12 single-byte alphanumeric characters	CPIC	-u
PASSWD	User's password used for establishing connection ^{#2}	1-8 single-byte characters ^{#3}	ADMIN	-p
PASSWD2	User's extended password used for establishing connection ^{#2}	1-40 single-byte characters ^{#3}	ADMIN	-p2
LANG	User language used for connection	2-byte ISO ID or 1-byte language key that is used in the SAP system: <ul style="list-style-type: none"> • EN or E 	None	-l
CODEPAGE	Code page used to convert character codes in the Unicode version of the SAP system at the destination	Value combined with the language in the LANG label ^{#4}	None	-codepage

#1

The user specified in this label must have already been granted the following authorizations:

Table 6-8: Authorizations required by the user to establish RFC connection with function modules (S_RFC)

Authorization	Description	Value
RFC_TYPE	Type of RFC object to be protected	FUGR (function group)
RFC_NAME	RFC name to be protected	*
ACTVT	Activity	16 (execution)

Table 6-9: Authorizations required for use of external management interfaces (S_XMI_PROD)

Authorization	Description	Value
EXTCOMPANY	Company name of the external management tool	HITACHI
EXTPRODUCT	Program name of the external management tool	JP1
INTERFACE	Interface ID	XAL

You can use the following user types for the user specified in this label:

- Dialog
- System
- Communication
- Service

#2

The `PASSWD` and `PASSWD2` labels are mutually exclusive.

#3

A user's password or extended password that is used for establishing connection must consist of single-byte numeric characters (from 0 to 9), single-byte alphabetic characters (from a to z, A to Z), and the following single-byte symbols:

!, @, \$, %, &, /, (,), =, ?, ', `*, +, ~, #, -, _, ., :, {, [,], }, <, >, |

#4

Set the `LANG` and `CODEPAGE` labels in the applicable combination shown below. If any other combination of language and code page is specified, an encoding error might occur in the information acquired from the SAP system.

Table 6-10: Combination of language and code page specifications

Connection-target SAP system	Connection language	Language (LANG)	Code page (CODEPAGE)
Unicode version	English	EN	No need to specify. If you specify a code page, specify 1100.
Non-Unicode version	English	EN	No need to specify. If you specify a code page, specify 1100.

If you omit specification of the `LANG` label, the user language defined in the connection-target system is assumed.

If you omit specification of the `CODEPAGE` label, the default code page in the connection-target system is assumed.

(b) **COMMAND section**

The `COMMAND` section specifies information about the work directory for the `jr3alget` command.

Table 6-11: Values permitted in the COMMAND section

Label	Description	Permitted values	Default value	Argument
WORKDIR	Work directory for the command	1-255 single-byte alphanumeric characters. If a relative path is specified, it is treated as the path relative to the current directory.	Current directory	N/A

(c) TRACE section

The TRACE section specifies information about the message log and data log that store the history of CCMS alert information extraction.

Table 6-12: Values permitted in the TRACE section

Label	Description	Permitted values	Default value	Argument
MSGLOG_LEVEL	Message log collection level for saving application trace information: <ul style="list-style-type: none"> 0: Do not collect 1: Collect only errors 2: Standard 3: Details 4: Debug 	0-4	2	N/A
MSGLOG_SIZE	File size for collecting the message log: <ul style="list-style-type: none"> 0: Maximum value for the system[#] 1-65535: Wraparound within the specified size (in kilobytes) 	0-65535	512	N/A
MSGLOG_DIR	Message log file (jr3alget.log) collection-target directory	1-255 single-byte alphanumeric characters. The total length, including file name jr3alget.log, must not exceed 255 bytes. If a relative path is specified, it is treated as the path relative to the work directory for the command.	Work directory for the command (or the current directory if it has not been changed by the WORKDIR label in the COMMAND section)	N/A

Label	Description	Permitted values	Default value	Argument
DATALOG _LEVEL	Data log collection level for saving various types of data information for applications: <ul style="list-style-type: none"> 0: Do not collect 1: Collect only errors 2: Standard 3: Details 4: Debug 	0-4	2	N/A
DATALOG _SIZE	File size for collecting data log: <ul style="list-style-type: none"> 0: Maximum value for the system[#] 1-65535: Wraparound within the specified size (in kilobytes) 	0-65535	512	N/A
DATALOG _DIR	Data log file (jr3alget.dat) collection-target directory	1-255 single-byte alphanumeric characters. The total length, including file name jr3alget.log, must not exceed 255 bytes. If a relative path is specified, it is treated as the path relative to the work directory for the command.	Work directory for the command (or the current directory if it has not been changed by the WORKDIR label in the COMMAND section)	N/A

#

This is 0x7FFFFFFF (about 2 gigabytes), which can be expressed as a 32-bit signed integer.

(d) TARGET section

The TARGET section specifies information that identifies the CCMS alert information to be extracted.

Table 6-13: Values permitted in the TARGET section

Label	Description	Permitted values	Default values	Argument
MONITOR _SET	Monitor set name (for details, see the -ms option)	1-60 single-byte alphanumeric characters	SAP CCMS Technical Expert Monitors	-ms

Label	Description	Permitted values	Default values	Argument
MONITOR	Monitor name (for details, see the <code>-mn</code> option)	1-60 single-byte alphanumeric characters	All Monitoring Contexts	<code>-mn</code>

(e) FORMAT section

The `FORMAT` section specifies the output format of the CCMS alert information.

Table 6-14: Values permitted in the `FORMAT` section

Label	Description	Permitted values	Default values	Argument
COLUMN	Output format of CCMS alert information	Field ID. For details about the field ID, see <i>10. Commands</i> .	Column 1: <code><ALERTDATE></code> Column 2: <code><ALERTTIME></code> Column 3: <code><MTSYSID></code> Column 4: <code><MTMCNAME></code> Column 5: <code><OBJECTNAME></code> Column 6: <code><FIELDNAME></code> Column 7: <code><VALUE></code> Column 8: <code><SEVERITY></code> Column 9: <code><MSG></code>	N/A
TIMEZONE	Time zone for time information specified in field IDs <code><ALERTDATE></code> , <code><ALERTTIME></code> , <code><STATCHGDAT></code> , and <code><STATCHGTIM></code>	<ul style="list-style-type: none"> UTC Output in UTC (international time standard). LOCAL Output in the local time at the location of the user who executed the command. 	UTC	TIMEZONE

(f) EXTRACTFILE section

The `EXTRACTFILE` section specifies information about the output file for the CCMS alert information.

Table 6-15: Values permitted in the `EXTRACTFILE` section

Label	Description	Permitted values	Default value	Argument
SIZE	Size of output file: <ul style="list-style-type: none"> 0: Maximum value for the system^{#1} 1-65535: Wraparound within the specified size (in kilobytes) 	0-65535	1024	N/A

Label	Description	Permitted values	Default value	Argument
X2PATH	Log file path that is used when log file output is specified with the <code>-x2</code> option of the <code>jr3alget</code> command ^{#2}	1-255 single-byte alphanumeric characters. If a relative path is specified, it is treated as the path relative to the work directory for the command (or the current directory if it has not been changed by the <code>WORKDIR</code> label in the <code>COMMAND</code> section)	ALERT	N/A

#1

This is `0x7FFFFFFF` (about 2 gigabytes), which can be expressed as a 32-bit signed integer.

#2

A management file named *output-file-name*.`ofs` is created in the same directory as the specified output file (e.g., if `ALERT` is specified as the output file name, `ALERT.ofs` is created as a management file in addition to the `ALERT` file.) If you delete this output file, make sure that you also delete the management file.

Chapter

7. Collecting Monitor Information

This chapter describes how to use PFM - Agent for Enterprise Applications to collect an SAP system's monitor information.

- 7.1 Overview of collecting monitor information
- 7.2 Settings for collecting monitor information

7.1 Overview of collecting monitor information

PFM - Agent for Enterprise Applications enables you to collect an SAP system's monitor information on the basis of user definitions.

SAP system monitor information means the information about an SAP system's performance that is managed by the CCMS monitoring architecture. A collection of individual performance information items is called a *monitor set*, and it is managed hierarchically in a tree structure called a *monitor*.

Of the various types of performance information defined in a monitor set and monitor, the items with the performance attribute, together with their values, can be collected as performance data, mapped to a record type and fields provided by PFM - Agent for Enterprise Applications, and then stored as user-defined records in PFM - Agent for Enterprise Applications.

PFM - Agent for Enterprise Applications manages such user-defined records as User defined Monitor (Perf.) (PI_UMP) records. When there are multiple performance data items, for each data item, a field is added in the user record one row at a time. As a result, each user record becomes a multi-row record. A multi-row record is a multi-instance record.

For details about records, see 9. *Records*.

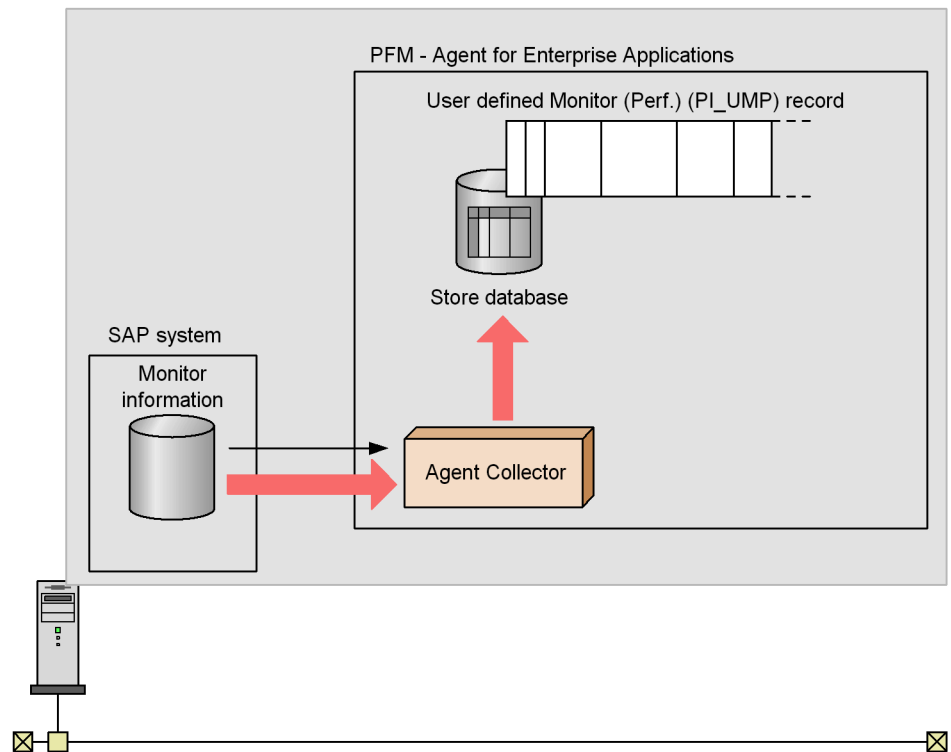
7.2 Settings for collecting monitor information

You must set the following items in order to collect SAP system monitor information:


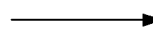
- Monitor set name and monitor name
- Performance data collection settings

The following figure shows the flow of tasks for collecting SAP system monitor information.

Figure 7-1: Flow of tasks for collecting SAP system monitor information



Legend:

-  : Flow of performance data
-  : Setting monitor set name and monitor name

7.2.1 Setting a monitor set name and a monitor name

This subsection describes how to set a monitor set name and a monitor name from PFM - Web Console.

A Performance Management user with the administrator user permission must execute this procedure.

To set a monitor set name and monitor name:

1. Log on to PFM - Web Console.
For details about logging on to PFM - Web Console, see the chapter that describes startup and termination of Performance Management in the *Job Management Partner 1/Performance Management User's Guide*.
2. In the Main window, from the navigation frame, choose the **Agents** tab.
3. In the Agents window, from the navigation frame, select the agent that you wish to use to collect SAP system monitor information.
A check mark appears next to the selected agent.
4. In the method frame, choose the **Properties** method.
The Properties window appears.
5. In **Agent**, click the `PI_UMP` folder.
Settings for the monitor set name and monitor name are displayed.
6. Under **MONITOR_SET** and **MONITOR**, set **Value**.
Set a monitor set name and a monitor name for the SAP system monitor information that you wish to collect. Each value must consist of 1 to 60 single-byte alphanumeric characters.
You can check the monitor set name and monitor name with transaction code `RZ20`. Note that these settings are case sensitive.
7. Click the **OK** button.
The settings take effect.

7.2.2 Settings for performance data collection

This subsection describes how to store in the Store database performance data obtained from SAP system monitor information.

A Performance Management user with the administrator user permission must execute this procedure.

To store performance data in the Store database:

1. Use PFM - Web Console to specify settings so that performance data in User

defined Monitor (Perf.) (PI_UMP) records is stored in the Store database.

For details about the setting method, see the chapter that describes management of operation monitoring data in the *Job Management Partner 1/Performance Management User's Guide*.

Note

A maximum of 4,096 records can be acquired during each performance data collection. If the number of records exceeds this value, the excess records are discarded.

Chapter

8. Monitoring Template

This chapter describes the monitoring template for PFM - Agent for Enterprise Applications.

- Overview of the monitoring template
- Format of alarm explanations
- List of alarms
- Format of report explanations
- Organization of report folders
- List of reports

Overview of the monitoring template

The Performance Management products provide the following methods for defining alarms and reports:

- Using the alarms and reports defined by PFM - Agent
- Copying and customizing the alarms and reports defined by PFM - Agent
- Using a wizard to define new information

A set of alarms and reports provided by PFM - Agent is called a *monitoring template*. Because the necessary information is predefined for the reports and alarms in the monitoring template, you can copy them in order to use the solution set as is or you can customize them as appropriate for your environment. This eliminates the need to use the wizard to create new definitions, thus simplifying the preparations for monitoring the operating status of desired programs.

This chapter describes the alarm and report settings in the monitoring template that have been defined by PFM - Agent for Enterprise Applications.

For details about how to use the monitoring template, see the chapter that describes operation monitoring by alarms and report creation for operation analysis in the *Job Management Partner 1/Performance Management User's Guide*.

Format of alarm explanations

This section describes the format used to explain alarms. Alarms are presented in alphabetical order.

Alarm name

Indicates the name of an alarm in the monitoring template.

Overview

Provides an overview of the programs that can be monitored by the alarm.

Main settings

Explains the main settings for this alarm in tabular format. This table lists the correspondence between alarm settings and the Properties window, which is displayed in PFM - Web Console when the alarm icon is clicked on the **Alarms** page and then the **Properties** method is clicked. For details about the settings for each alarm, check the Properties window for the alarm in PFM - Web Console.


In the *Setting* column, a cell with three dashes (--) means that the setting is always ignored.

If the abnormal condition is the same as the warning condition in a conditional expression, the system issues only the abnormal alarm event.

Alarm table

Indicates the alarm table that contains this alarm.

Related reports

Indicates the reports in the monitoring template that are associated with this alarm. You can display these reports by clicking the  icon in the Display Alarm Status method, which is displayed in PFM - Web Console when the agent icon on the **Agents** page is clicked.

When you check the reports tree in the PFM - Web Console window, replace the path beginning with `Reports/` with `System Reports/`.

List of alarms

A table containing alarms is called an *alarm table*. The alarms defined in the monitoring template for PFM - Agent for Enterprise Applications are in alarm table format and are stored in the `SAP\System` folder that is displayed on the **Alarms** page of PFM - Web Console.

The alarm tables are identified as follows:

- PFM SAP System Template Alarms 09.00
- PFM SAP System Template Alarms [Background Processing] 09.00
- PFM SAP System Template Alarms [Background Service] 09.00
- PFM SAP System Template Alarms [Dialog Utilization] 09.00

Information in square brackets in an alarm table name

Square brackets enclose the name of that alarm table's monitoring item. An alarm table without square brackets consists of basic alarms

09.00 at the end of an alarm table name

Indicates the version of the alarm table.

For PFM - Agent for Enterprise Applications, alarm tables for a version that is not supported by the Performance Management system being used might be displayed among the alarms. When you use alarms defined in a monitoring template, check the version of the alarm table used in the Performance Management system for version compatibility. For details about the alarm table version and version compatibility, see *I. Version Compatibility*.

The following table lists and describes the alarms defined in the monitoring template of PFM - Agent for Enterprise Applications.

Table 8-1: List of alarms

Alarm table name	Alarm name	Monitoring target
PFM SAP System Template Alarms 09.00	Buffer - CUA	SAP buffer (CUA buffer) hit rate
	Buffer - FieldDescri	SAP buffer (field description buffer) hit rate
	Buffer - GenericKey	SAP buffer (generic key buffer) hit rate
	Buffer - InitialReco	SAP buffer (initial records buffer) hit rate

Alarm table name	Alarm name	Monitoring target
	Buffer - Program	SAP buffer (program buffer) hit rate
	Buffer - Screen	SAP buffer (screen buffer) hit rate
	Buffer - ShortNameTA	SAP buffer (short nametab buffer) hit rate
	Buffer - SingleRecor	SAP buffer (single record buffer) hit rate
	Buffer - TableDefini	SAP buffer (table definition buffer) hit rate
	Dialog ResponseTime	Dialog task's response time
	Extended Memory	Usage of extended memory
	Heap Memory	Usage of heap memory
	Paging Area	Usage of the paging area
	Roll Area	Usage of the roll area
PFM SAP System Template Alarms [Background Processing] 09.00	SystemWideQueue	Number of jobs waiting to be executed (average in the entire system)
PFM SAP System Template Alarms [Background Service] 09.00	ServerSpecificQueue	Number of released jobs waiting to be executed
	Utilization %	Average usage of the server's background work processes
PFM SAP System Template Alarms [Dialog Utilization] 09.00	QueueLength %	Average usage of the dispatcher queue for dialog work processes
	Utilization %	Average usage of the application server's dialog processes

Buffer - CUA

Overview

The Buffer - CUA alarm monitors the SAP buffer (CUA buffer) hit rate.

Main settings

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Report alarm when the following damping condition is reached	Not selected
	Interval(s)	--
	occurrence(s) during	--
Action	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	WorkLoad Summary Interval (PI)
	Field	CUA HitRatio %
	Abnormal condition	CUA HitRatio % < 60
	Warning condition	CUA HitRatio % < 80

Related reports

Reports/SAP System/SAP Basis/Web Application Server/Troubleshooting/Recent Past/SAP Buffer Hitratio

Buffer - FieldDescri

Overview

The Buffer - FieldDescri alarm monitors the SAP buffer (field description buffer) hit rate.

Main settings

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Report alarm when the following damping condition is reached	Not selected
	Interval(s)	--
	occurrence(s) during	--
Action	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	WorkLoad Summary Interval (PI)
	Field	FieldDescription HitRatio %
	Abnormal condition	FieldDescription HitRatio % < 60
	Warning condition	FieldDescription HitRatio % < 80

Related reports

Reports/SAP System/SAP Basis/Web Application Server/Troubleshooting/Recent Past/SAP Buffer Hitratio

Buffer - GenericKey

Overview

The Buffer - GenericKey alarm monitors the SAP buffer (generic key buffer) hit rate.

Main settings

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Report alarm when the following damping condition is reached	Not selected
	Interval(s)	--
	occurrence(s) during	--
Action	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	WorkLoad Summary Interval (PI)
	Field	GenericKey HitRatio %
	Abnormal condition	GenericKey HitRatio % < 60
	Warning condition	GenericKey HitRatio % < 80

Related reports

Reports/SAP System/SAP Basis/Web Application Server/Troubleshooting/Recent Past/SAP Buffer Hitratio

Buffer - InitialReco

Overview

The Buffer - InitialReco alarm monitors the SAP buffer (initial records buffer) hit rate.

Main settings

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Report alarm when the following damping condition is reached	Not selected
	Interval(s)	--
	occurrence(s) during	--
Action	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	WorkLoad Summary Interval (PI)
	Field	InitialRecords HitRatio %
	Abnormal condition	InitialRecords HitRatio % < 60
	Warning condition	InitialRecords HitRatio % < 80

Related reports

Reports/SAP System/SAP Basis/Web Application Server/Troubleshooting/Recent Past/SAP Buffer Hitratio

Buffer - Program

Overview

The Buffer - Program alarm monitors the SAP buffer (program buffer) hit rate.

Main settings

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Report alarm when the following damping condition is reached	Not selected
	Interval(s)	--
	occurrence(s) during	--
Action	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	WorkLoad Summary Interval (PI)
	Field	Program HitRatio %
	Abnormal condition	Program HitRatio % < 60
	Warning condition	Program HitRatio % < 80

Related reports

Reports/SAP System/SAP Basis/Web Application Server/Troubleshooting/Recent Past/SAP Buffer Hitratio

Buffer - Screen

Overview

The Buffer - Screen alarm monitors the SAP buffer (screen buffer) hit rate.

Main settings

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Report alarm when the following damping condition is reached	Not selected
	Interval(s)	--
	occurrence(s) during	--
Action	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	WorkLoad Summary Interval (PI)
	Field	Screen HitRatio %
	Abnormal condition	Screen HitRatio % < 60
	Warning condition	Screen HitRatio % < 80

Related reports

Reports/SAP System/SAP Basis/Web Application Server/Troubleshooting/Recent Past/SAP Buffer Hitratio

Buffer - ShortNameTA

Overview

The Buffer - ShortNameTA alarm monitors the SAP buffer (short nametab buffer) hit rate.

Main settings

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Report alarm when the following damping condition is reached	Not selected
	Interval(s)	--
	occurrence(s) during	--
Action	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	WorkLoad Summary Interval (PI)
	Field	ShortNameTAB HitRatio %
	Abnormal condition	ShortNameTAB HitRatio % < 60
	Warning condition	ShortNameTAB HitRatio % < 80

Related reports

Reports/SAP System/SAP Basis/Web Application Server/Troubleshooting/Recent Past/SAP Buffer Hitratio

Buffer - SingleRecor

Overview

The Buffer - SingleRecor alarm monitors the SAP buffer (single record buffer) hit rate.

Main settings

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Report alarm when the following damping condition is reached	Not selected
	Interval(s)	--
	occurrence(s) during	--
Action	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	WorkLoad Summary Interval (PI)
	Field	SingleRecord HitRatio %
	Abnormal condition	SingleRecord HitRatio % < 60
	Warning condition	SingleRecord HitRatio % < 80

Related reports

Reports/SAP System/SAP Basis/Web Application Server/Troubleshooting/Recent Past/SAP Buffer Hitratio

Buffer - TableDefini

Overview

The Buffer - TableDefini alarm monitors the SAP buffer (table definition buffer) hit rate.

Main settings

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Report alarm when the following damping condition is reached	Not selected
	Interval(s)	--
	occurrence(s) during	--
Action	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	WorkLoad Summary Interval (PI)
	Field	TableDefinition HitRatio %
	Abnormal condition	TableDefinition HitRatio % < 60
	Warning condition	TableDefinition HitRatio % < 80

Related reports

Reports/SAP System/SAP Basis/Web Application Server/Troubleshooting/Recent Past/SAP Buffer Hitratio

Dialog ResponseTime

Overview

The Dialog ResponseTime alarm monitors the dialog task's response time.

Main settings

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Report alarm when the following damping condition is reached	Not selected
	Interval(s)	--
	occurrence(s) during	--
Action	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	WorkLoad Summary Interval (PI)
	Field	ResponseTime
	Abnormal condition	ResponseTime > 3000
	Warning condition	ResponseTime > 2000

Related reports

Reports/SAP System/SAP Basis/Web Application Server/Troubleshooting/Recent Past/Dialog ResponseTime

Extended Memory

Overview

The Extended Memory alarm monitors the usage of extended memory.

Main settings

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Report alarm when the following damping condition is reached	Not selected
	Interval(s)	--
	occurrence(s) during	--
Action	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	WorkLoad Summary Interval (PI)
	Field	EsAct %
	Abnormal condition	EsAct % > 95
	Warning condition	EsAct % > 80

Related reports

Reports/SAP System/SAP Basis/Web Application Server/Troubleshooting/Recent Past/SAP Memory Used

Heap Memory

Overview

The Heap Memory alarm monitors the usage of heap memory.

Main settings

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Report alarm when the following damping condition is reached	Not selected
	Interval(s)	--
	occurrence(s) during	--
Action	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	WorkLoad Summary Interval (PI)
	Field	HeapAct %
	Abnormal condition	HeapAct % > 95
	Warning condition	HeapAct % > 80

Related reports

Reports/SAP System/SAP Basis/Web Application Server/Troubleshooting/Recent Past/SAP Memory Used

Paging Area

Overview

The Paging Area alarm monitors the usage of paging area.

Main settings

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Report alarm when the following damping condition is reached	Not selected
	Interval(s)	--
	occurrence(s) during	--
Action	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	WorkLoad Summary Interval (PI)
	Field	R3PagingUsed %
	Abnormal condition	R3PagingUsed % > 95
	Warning condition	R3PagingUsed % > 80

Related reports

Reports/SAP System/SAP Basis/Web Application Server/Troubleshooting/Recent Past/SAP Memory Used

Roll Area

Overview

The Roll Area alarm monitors the usage of roll area.

Main settings

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Report alarm when the following damping condition is reached	Not selected
	Interval(s)	--
	occurrence(s) during	--
Action	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	WorkLoad Summary Interval (PI)
	Field	R3RollUsed %
	Abnormal condition	R3RollUsed % > 95
	Warning condition	R3RollUsed % > 80

Related reports

Reports/SAP System/SAP Basis/Web Application Server/Troubleshooting/Recent Past/SAP Memory Used

SystemWideQueue

Overview

The SystemWideQueue alarm monitors the number of jobs waiting to be executed (average in the entire system).

Main settings

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Report alarm when the following damping condition is reached	Not selected
	Interval(s)	--
	occurrence(s) during	--
Action	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	Background Processing (PI_BTCP)
	Field	SystemWideQueueLength
	Abnormal condition	SystemWideQueueLength > 4
	Warning condition	SystemWideQueueLength > 2

Related reports

Reports/SAP System/SAP Basis/Web Application Server/Status Reporting/Daily Trend/Advanced/Background Processing SystemWideQueue

ServerSpecificQueue

Overview

The ServerSpecificQueue alarm monitors the number of released jobs waiting to be executed.

Main settings

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Report alarm when the following damping condition is reached	Not selected
	Interval(s)	--
	occurrence(s) during	--
Action	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	Background Service (PI_BTC)
	Field	ServerSpecificQueueLength
	Abnormal condition	ServerSpecificQueueLength > 4
	Warning condition	ServerSpecificQueueLength > 2

Related reports

Reports/SAP System/SAP Basis/Web Application Server/Status Reporting/Daily Trend/Advanced/Background Service ServerSpecificQueue

Utilization % (alarm for monitoring the average usage of background work processes)

Overview

The Utilization % alarm monitors the average usage of the server's background work processes.

Main settings

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Report alarm when the following damping condition is reached	Not selected
	Interval(s)	--
	occurrence(s) during	--
Action	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	Background Service (PI_BTC)
	Field	Utilization %
	Abnormal condition	Utilization % > 95
	Warning condition	Utilization % > 90

Related reports

Reports/SAP System/SAP Basis/Web Application Server/Status Reporting/Daily Trend/Advanced/Background Service Utilization %

QueueLength %

Overview

The QueueLength % alarm monitors the average usage of the dispatcher queue for dialog work processes.

Main settings

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Report alarm when the following damping condition is reached	Not selected
	Interval(s)	--
	occurrence(s) during	--
Action	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	Dialog Service (PI_DIA)
	Field	QueueLength %
	Abnormal condition	QueueLength % > 100
	Warning condition	QueueLength % > 99

Related reports

Reports/SAP System/SAP Basis/Web Application Server/Troubleshooting/Recent Past/Advanced/Dialog Utilization %

Utilization % (alarm for monitoring the average usage of dialog processes)

Overview

The Utilization % alarm monitors the average usage of the application server's dialog processes.

Main settings

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Report alarm when the following damping condition is reached	Not selected
	Interval(s)	--
	occurrence(s) during	--
Action	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	Dialog Service (PI_DIA)
	Field	Utilization %
	Abnormal condition	Utilization % > 100
	Warning condition	Utilization % > 99

Related reports

Reports/SAP System/SAP Basis/Web Application Server/
 Troubleshooting/Recent Past/Advanced/Dialog Utilization %

Format of report explanations

This section describes the format used to explain reports. The manual lists the reports in alphabetical order.

Report name

Indicates the name of a report in the monitoring template.

A report name that includes (Multi-Agent) means a report that displays information about multiple instances.

A report name that does not include (Multi-Agent) means a report that displays information about a single instance.

Overview

Provides an overview of the information that can be displayed in the report.

Storage location

Indicates the storage location of the report.

When you check the reports tree in the PFM - Web Console window, replace the path beginning with Reports/ with System Reports/.

Record

Indicates the record that contains the performance data used in the report. To display a historical report, you must specify information in advance in order to collect the record indicated in this column. Before displaying the report, check the Properties window to make sure that **Log** is set to **Yes**. The Properties window is displayed in PFM - Web Console when the agent icon on the **Agents** page is clicked and then the **Properties** method is clicked. This setting is not needed to display a real-time report.

Fields

Provides a table that describes the fields used in the report.

Drilldown reports (report level)

Provides a table that lists other reports in the monitoring template that are related to this report. To display this drilldown report, select in the PFM - Web Console report window the name of the desired drilldown report from the drilldown reports pull-down list, and then click **Display Reports**. Note that some reports do not have any drilldown reports.

Drilldown reports (field level)

Provides a table that describes reports in the monitoring template that are associated

with fields used in this report. To display these drilldown reports, in the PFM - Web Console report window, choose **Graph**, **List**, or **Table**. In the case of a historical report, you can display drilldown reports in smaller intervals by displaying them from the time item. Note that some reports do not have any drilldown reports.

For details about drilldown reports, see the chapter that describes report creation for operation analysis in the *Job Management Partner 1/Performance Management User's Guide*.

Organization of report folders

The following shows the organization of the report folders for PFM - Agent for Enterprise Applications. Angle brackets enclose folder names:

```

<SAP System>
  +-- <SAP Basis/Web Application Server>
    +-- <Monthly Trend>
      |   +-- Dialog ResponseTime Trend
      |   +-- Dialog ResponseTime Trend(Multi-Agent)
      |   +-- SAP Buffer Hitratio Trend
      |   +-- SAP Memory Used Trend
      |   +-- UsersLoggedIn Trend
      |   +-- UsersLoggedIn Trend(Multi-Agent)
    +-- <Status Reporting>
      +-- <Daily Trend>
        |   +-- Dialog ResponseTime Trend
        |   +-- SAP Buffer Hitratio Trend
        |   +-- SAP Memory Used Trend
        |   +-- UsersLoggedIn Trend
        |   +-- <Advanced>
        |       +-- Background Processing SystemWideQueue
        |       +-- Background Service ServerSpecificQueue
        |       +-- Background Service Utilization %
      +-- <Real-Time>
        +-- Dialog ResponseTime Status
        +-- Process Overview Status
        +-- SAP Buffer Hitratio Status
        +-- SAP Memory Used Status
        +-- <Drilldown Only>
            +-- SAP Buffer Detail(CUA)
            +-- SAP Buffer Detail(FieldDescription)
            +-- SAP Buffer Detail(GenericKey)
            +-- SAP Buffer Detail(InitialRecords)
            +-- SAP Buffer Detail(Program)
            +-- SAP Buffer Detail(Screen)
            +-- SAP Buffer Detail(ShortNameTAB)
            +-- SAP Buffer Detail(SingleRecord)
            +-- SAP Buffer Detail(TableDefinition)
            +-- SAP Memory Detail
      +-- <Troubleshooting>
        +-- <Real-Time>
        +-- <Recent Past>
            +-- Dialog ResponseTime
            +-- <Advanced>
                +-- Dialog Utilization %
            +-- SAP Buffer Hitratio
  
```

```
+-- SAP Memory Used
+-- <Drilldown Only>
   +-- Process Detail
```

The following describes each folder:

■ Monthly Trend folder

This folder contains reports that display daily information for the past month. Use the reports in this folder to check monthly trends in the system.

■ Status Reporting folder

This folder contains reports that display daily or weekly information. Use the reports in this folder to check the overall status of the system. You can display real-time reports as well as historical reports.

• Daily Trend folder

This folder contains reports for displaying hourly information for the past 24 hours. Use the reports in this folder to check the daily status of the system.

• Real-Time folder

This folder contains real-time reports for checking the system status.

■ Troubleshooting folder

This folder contains reports for displaying information that is useful for resolving problems. In the event of a system problem, use the reports in this folder to check the cause of the problem.

• Real-Time folder

This folder contains real-time reports for checking the current system status.

• Recent Past folder

This folder contains historical reports for displaying minute-by-minute information for the past hour.

These folders may also include the following folder:

■ Drilldown Only folder

This folder contains reports that are displayed as drilldown reports (field level). Use it to display detailed information about fields contained in the applicable report.

List of reports

The following table lists the reports defined in the monitoring template in alphabetical order.

Table 8-2: List of reports

Category	Report name	Displayed information
Response time	Dialog ResponseTime	Analysis report in the event of a problem with the dialog task's response times over the past hour
	Dialog ResponseTime Status	Overview of the dialog task's response times
	Dialog ResponseTime Trend (hourly historical report)	Trends in the dialog task's response times over the past 24 hours (hourly)
	Dialog ResponseTime Trend (daily historical report)	Trends in the dialog task's response times over the past month (daily)
	Dialog ResponseTime Trend (Multi-Agent)	Trends in the dialog task's response times over the past month (comparison among application servers)
Work process	Background Service Utilization %	Trends in the average usage of the server's background processes over the past 24 hours (hourly)
	Dialog Utilization %	Analysis report in the event of a problem with dialog work processes over the past hour (minute-by-minute)
	Process Detail	Work process activity status over the past hour
	Process Overview Status	Work process activity status
SAP buffer	SAP Buffer Detail (CUA)	Details of the SAP buffer (CUA buffer) (drilldown report)
	SAP Buffer Detail (FieldDescription)	Details of the SAP buffer (field description buffer) (drilldown report)
	SAP Buffer Detail (GenericKey)	Details of the SAP buffer (generic key buffer) (drilldown report)
	SAP Buffer Detail (InitialRecords)	Details of the SAP buffer (initial records buffer) (drilldown report)

Category	Report name	Displayed information
	SAP Buffer Detail (Program)	Details of the SAP buffer (program buffer) (drilldown report)
	SAP Buffer Detail (Screen)	Details of the SAP buffer (screen buffer) (drilldown report)
	SAP Buffer Detail (ShortNameTAB)	Details of the SAP buffer (short nametab buffer) (drilldown report)
	SAP Buffer Detail (SingleRecord)	Details of the SAP buffer (single record buffer) (drilldown report)
	SAP Buffer Detail (TableDefinition)	Details of the SAP buffer (table definition buffer) (drilldown report)
	SAP Buffer Hitratio	Analysis report in the event of a problem with the SAP buffer hit rate over the past hour
	SAP Buffer Hitratio Status	Overview of the SAP buffer hit rate
	SAP Buffer Hitratio Trend (hourly historical report)	Trends in the SAP buffer hit rate over the past 24 hours (hourly)
	SAP Buffer Hitratio Trend (daily historical report)	Trends in the SAP buffer hit rate over the past month (daily)
SAP memory	SAP Memory Detail	Details of the SAP memory
	SAP Memory Used	Analysis report in the event of a problem with the SAP memory usage over the past hour
	SAP Memory Used Status	Overview of the SAP memory usage
	SAP Memory Used Trend (hourly historical report)	Trends in the SAP memory usage over the past 24 hours (hourly)
	SAP Memory Used Trend (daily historical report)	Trends in the SAP memory usage over the past month (daily)
Login user	UsersLoggedIn Trend (hourly historical report)	Trends in the number of users logged on over the past 24 hours (hourly)
	UsersLoggedIn Trend (daily historical report)	Trends in the number of users logged on over the past month (daily)
	UsersLoggedIn Trend (Multi-Agent)	Trends in the number of users logged on over the past month (comparison among application servers)

Category	Report name	Displayed information
Trends in the number of jobs	Background Processing SystemWideQueue	Trends in the number of jobs waiting to be executed over the past 24 hours (average in the entire system) (minute-by-minute)
	Background Service ServerSpecificQueue	Trends in the number of released jobs waiting to be executed over the past 24 hours (hourly)

Dialog ResponseTime

Overview

The `Dialog ResponseTime` report displays an analysis report in the event of a problem with the dialog task's response times. It displays minute-by-minute trends in the response times over the past hour. The display format is a table and a line graph.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/
Troubleshooting/Recent Past/

Record

WorkLoad Summary Interval (PI)

Fields

Field name	Description
DBRequestTime	Average time (in milliseconds) required to process logical database requests
DialogSteps	Average number of dialog steps per minute
FrontendResponseTime	Average time the user waits at the front end for a request to be processed. This is the average (in milliseconds) of the total of the response time, network transfer time, and front-end processing time.
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
Load+GenTime	Average time required (in milliseconds) for loading and creating source text, graphical user interface, and window information from the database
QueueTime	Average wait time in the dispatcher queue. This is the average time (in milliseconds) user requests remain in the dispatcher queue.
ResponseTime	Average time (in milliseconds) required to process dialog steps. This is the total processing time required for a dialog step, and it includes the database processing time but not the network transfer time or front-end processing time.
System ID	SAP system ID

Drilldown reports (report level)

Report name	Description
Process Detail	Displays the activity status of the work process over the past hour.

Dialog ResponseTime Status

Overview

The Dialog ResponseTime Status report displays an overview of the dialog task's response times in real-time. The display format is a list and a line graph.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/Status Reporting/Real-Time/

Record

Dialog Service (PI_DIA)

Fields

Field name	Description
FrontendNetTime	Network time (in milliseconds) used for the first data transfer from front end to application server and for the last data transfer from application server to front end. This does not include the value of the GuiCallBackTime field.
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the rdisp/myname parameter.
ResponseTime	Average time (in milliseconds) required to process dialog steps. This is the total processing time required for a dialog step, and it includes the database processing time but not the network transfer time or front-end processing time.
ResponseTime:StandardTran.	Standard transaction's response time (in milliseconds)
System ID	SAP system ID
UsersLoggedIn	Number of users currently logged on

Dialog ResponseTime Trend (hourly historical report)

Overview

The Dialog ResponseTime Trend report displays hourly trends in the dialog task's response times over the past 24 hours. The display format is a table and a line graph.

You can display minute-by-minute drilldown reports from the displayed data in order to view more detailed data for specific time periods.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/Status Reporting/Daily Trend/

Record

WorkLoad Summary Interval (PI)

Fields

Field name	Description
DBRequestTime	Average time (in milliseconds) required to process logical database requests
DialogSteps	Average number of dialog steps per minute
FrontendResponseTime	Average time the user waits at the front end for a request to be processed. This is the average (in milliseconds) of the total of the response time, network transfer time, and front-end processing time.
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
Load+GenTime	Average time required (in milliseconds) for loading and creating source text, graphical user interface, and window information from the database
QueueTime	Average wait time in the dispatcher queue. This is the average time (in milliseconds) user requests remain in the dispatcher queue.
ResponseTime	Average time (in milliseconds) required to process dialog steps. This is the total processing time required for a dialog step, and it includes the database processing time but not the network transfer time or front-end processing time.
System ID	SAP system ID

Dialog ResponseTime Trend (daily historical report)

Overview

The Dialog ResponseTime Trend report displays daily trends in the dialog task's response times over the past month. The display format is a list and a line graph.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/Monthly Trend/

Record

WorkLoad Summary Interval (PI)

Fields

Field name	Description
DBRequestTime	Average time (in milliseconds) required to process logical database requests
DialogSteps	Average number of dialog steps per minute
FrontendResponseTime	Average time the user waits at the front end for a request to be processed. This is the average (in milliseconds) of the total of the response time, network transfer time, and front-end processing time.
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
Load+GenTime	Average time required (in milliseconds) for loading and creating source text, graphical user interface, and window information from the database
QueueTime	Average wait time in the dispatcher queue. This is the average time (in milliseconds) user requests remain in the dispatcher queue.
ResponseTime	Average time (in milliseconds) required to process dialog steps. This is the total processing time required for a dialog step, and it includes the database processing time but not the network transfer time or front-end processing time.
System ID	SAP system ID

Dialog ResponseTime Trend (Multi-Agent)

Overview

The Dialog ResponseTime Trend (Multi-Agent) report compares trends among application servers in the dialog task's response times over the past month. The display format is a list and a line graph.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/Monthly Trend/

Record

WorkLoad Summary Interval (PI)

Fields

Field name	Description
DBRequestTime	Average time (in milliseconds) required to process logical database requests
DialogSteps	Average number of dialog steps per minute
FrontendResponseTime	Average time the user waits at the front end for a request to be processed. This is the average (in milliseconds) of the total of the response time, network transfer time, and front-end processing time.
Agent Instance	Instance name of PFM - Agent
Load+GenTime	Average time required (in milliseconds) for loading and creating source text, graphical user interface, and window information from the database
QueueTime	Average wait time in the dispatcher queue. This is the average time (in milliseconds) user requests remain in the dispatcher queue.
ResponseTime	Average time (in milliseconds) required to process dialog steps. This is the total processing time required for a dialog step, and it includes the database processing time but not the network transfer time or front-end processing time.
System ID	SAP system ID

Dialog Utilization %

Overview

The `Dialog Utilization %` report displays an analysis report in the event of a problem with dialog work processes. It displays minute-by-minute trends in the dialog work processes over the past hour.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/
Troubleshooting/Recent Past/Advanced/

Record

Dialog Service (PI_DIA)

Fields

Field name	Description
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
QueueLength %	Average usage of the dispatcher queue for dialog work processes
Utilization %	Average usage of the application server's dialog processes
System ID	SAP system ID

Process Detail

Overview

The `Process Detail` report displays the activity status of a work process over the past hour. The display format is a list. This is a drilldown report.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/Troubleshooting/Recent Past/Drilldown Only/

Record

Work Process Summary (PD)

Fields

Field name	Description
Action	Applicable activity name of the work process
Bname	User name of the request that is currently being processed by the work process
CPU	Reserved field; cannot be used
Dumps	Number of times the work process terminated abnormally
ElTime	Duration of the work process (in seconds)
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
ManDt	Client name of the request that is currently being processed by the work process
No	Work process number
Pid	ID of the work process in the host system
Report	Name of the report the work process is executing
Restart	Y (re-execute) or N (do not re-execute), indicating whether the work process will be re-executed automatically in the event of abnormal termination.
Sem	Semaphore number where the work process is in wait status
Status	Current status of the work process (example: <code>Waiting</code> or <code>Running</code>)

Process Detail

Field name	Description
System ID	SAP system ID
Table	Name of the last database table accessed by the work process
Typ	Type of work process (such as DIA, UPD, UP2, ENQ, BGD, or SPO).
Waiting	Reason why the work process is waiting

Process Overview Status

Overview

The Process Overview Status report displays the activity status of a work process in real-time. The display format is a table.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/Status Reporting/Real-Time/

Record

Work Process Summary (PD)

Fields

Field name	Description
Action	Applicable activity name of the work process
Bname	User name of the request that is currently being processed by the work process
CPU	Reserved field; cannot be used
Dumps	Number of times the work process terminated abnormally
ElTime	Duration of the work process (in seconds)
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
ManDt	Client name of the request that is currently being processed by the work process
No	Work process number
Pid	ID of the work process in the host system
Report	Name of the report the work process is executing
Restart	Y (re-execute) or N (do not re-execute), indicating whether the work process will be re-executed automatically in the event of abnormal termination.
Sem	Semaphore number where the work process is in wait status
Status	Current status of the work process (example: Running or Waiting)

Process Overview Status

Field name	Description
System ID	SAP system ID
Table	Name of the last database table accessed by the work process
Typ	Type of work process (such as DIA, UPD, UP2, ENQ, BGD, or SPO).
Waiting	Reason why the work process is waiting

SAP Buffer Detail (CUA)

Overview

The SAP Buffer Detail (CUA) report displays the details of the SAP buffer (CUA buffer) in real-time. The display format is a list. This is a drilldown report.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/Status Reporting/Real-Time/Drilldown Only/

Record

SAP Buffer Summary (PI_BUFF)

Fields

Field name	Description
CUA DirectoryUsed %	Usage of the CUA buffer directory (number of entries)
CUA HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the CUA buffer
CUA SpaceUsed %	Usage of the CUA buffer storage
CUA Swap	Number of times swapping occurred in the CUA buffer per minute because the buffer was full
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
System ID	SAP system ID

SAP Buffer Detail (FieldDescription)

Overview

The SAP Buffer Detail (FieldDescription) report displays the details of the SAP buffer (field description buffer) in real-time. The display format is a list. This is a drilldown report.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/Status Reporting/Real-Time/Drilldown Only/

Record

SAP Buffer Summary (PI_BUFF)

Fields

Field name	Description
FieldDescription DirectoryUsed %	Usage of the field description buffer directory (number of entries)
FieldDescription HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the field description buffer
FieldDescription SpaceUsed %	Usage of the field description buffer storage
FieldDescription Swap	Number of times swapping occurred in the field description buffer per minute because the buffer was full
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
System ID	SAP system ID

SAP Buffer Detail (GenericKey)

Overview

The SAP Buffer Detail (GenericKey) report displays the details of the SAP buffer (generic key buffer) in real-time. The display format is a list. This is a drilldown report.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/Status Reporting/Real-Time/Drilldown Only/

Record

SAP Buffer Summary (PI_BUFF)

Fields

Field name	Description
GenericKey DirectoryUsed %	Usage of the generic key buffer directory (number of entries)
GenericKey HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the generic key buffer
GenericKey SpaceUsed %	Usage of the generic key buffer storage
GenericKey Swap	Number of times swapping occurred in the generic key buffer per minute because the buffer was full
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
System ID	SAP system ID

SAP Buffer Detail (InitialRecords)

Overview

The SAP Buffer Detail (InitialRecords) report displays the details of the SAP buffer (initial records buffer) in real-time. The display format is a list. This is a drilldown report.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/Status Reporting/Real-Time/Drilldown Only/

Record

SAP Buffer Summary (PI_BUFF)

Fields

Field name	Description
InitialRecords DirectoryUsed %	Usage of the initial records buffer directory (number of entries)
InitialRecords HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the initial records buffer
InitialRecords SpaceUsed %	Usage of the initial records buffer storage
InitialRecords Swap	Number of times swapping occurred in the initial records buffer per minute because the buffer was full
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
System ID	SAP system ID

SAP Buffer Detail (Program)

Overview

The SAP Buffer Detail (Program) report displays the details of the SAP buffer (program buffer) in real-time. The display format is a list. This is a drilldown report.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/Status Reporting/Real-Time/Drilldown Only/

Record

SAP Buffer Summary (PI_BUFF)

Fields

Field name	Description
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
Program DirectoryUsed %	Usage of the program buffer directory (number of entries)
Program HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the program buffer
Program SpaceUsed %	Usage of the program buffer storage
Program Swap	Number of times swapping occurred in the program buffer per minute because the buffer was full
System ID	SAP system ID

SAP Buffer Detail (Screen)

Overview

The SAP Buffer Detail (Screen) report displays the details of the SAP buffer (screen buffer) in real-time. The display format is a list. This is a drilldown report.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/Status Reporting/Real-Time/Drilldown Only/

Record

SAP Buffer Summary (PI_BUFF)

Fields

Field name	Description
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
Screen DirectoryUsed %	Usage of the screen buffer directory (number of entries)
Screen HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the screen buffer
Screen SpaceUsed %	Usage of the screen buffer storage
Screen Swap	Number of times swapping occurred in the screen buffer per minute because the buffer was full
System ID	SAP system ID

SAP Buffer Detail (ShortNameTAB)

Overview

The SAP Buffer Detail (ShortNameTAB) report displays the details of the SAP buffer (short nametab buffer) in real-time. The display format is a list. This is a drilldown report.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/Status Reporting/Real-Time/Drilldown Only/

Record

SAP Buffer Summary (PI_BUFF)

Fields

Field name	Description
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
ShortNameTAB DirectoryUsed %	Usage of the short nametab buffer directory (number of entries)
ShortNameTAB HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the short nametab buffer
ShortNameTAB SpaceUsed %	Usage of the short nametab buffer storage
ShortNameTAB Swap	Number of times swapping occurred in the short nametab buffer per minute because the buffer was full
System ID	SAP system ID

SAP Buffer Detail (SingleRecord)

Overview

The SAP Buffer Detail (SingleRecord) report displays the details of the SAP buffer (single record buffer) in real-time. The display format is a list. This is a drilldown report.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/Status Reporting/Real-Time/Drilldown Only/

Record

SAP Buffer Summary (PI_BUFF)

Fields

Field name	Description
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
SingleRecordDirectoryUsed %	Usage of the single record buffer directory (number of entries)
SingleRecord HitRatio %	Ratio (percentage) of the database queries that were not passed to the database because the data was found in the single record buffer
SingleRecord SpaceUsed %	Usage of the single record buffer storage
SingleRecord Swap	Number of times swapping occurred in the single record buffer per minute because the buffer was full
System ID	SAP system ID

SAP Buffer Detail (TableDefinition)

Overview

The SAP Buffer Detail (TableDefinition) report displays the details of the SAP buffer (table definition buffer) in real-time. The display format is a list. This is a drilldown report.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/Status Reporting/Real-Time/Drilldown Only/

Record

SAP Buffer Summary (PI_BUFF)

Fields

Field name	Description
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
System ID	SAP system ID
TableDefinition DirectoryUsed %	Usage of the table definition buffer directory (number of entries)
TableDefinition HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the table definition buffer
TableDefinition SpaceUsed %	Usage of the table definition buffer storage
TableDefinition Swap	Number of times swapping occurred in the table definition buffer per minute because the buffer was full

SAP Buffer Hitratio

Overview

The `SAP Buffer Hitratio` report displays an analysis report in the event of a problem with the SAP buffer hit rate. It displays minute-by-minute trends in the SAP buffer hit rate over the past hour. The display format is a table and a line graph.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/
Troubleshooting/Recent Past/

Record

WorkLoad Summary Interval (PI)

Fields

Field name	Description
CUA HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the CUA buffer
FieldDescription HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the field description buffer
GenericKey HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the generic key buffer
InitialRecords HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the initial records buffer
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
Program HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the program buffer
Screen HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the screen buffer
ShortNameTAB HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the short nametab buffer
SingleRecord HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the single record buffer
System ID	SAP system ID

Field name	Description
TableDefinition HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the table definition buffer

Drilldown reports (report level)

Report name	Description
Process Detail	Displays the activity status of the work process over the past hour.

SAP Buffer Hitratio Status

Overview

The SAP Buffer Hitratio Status report displays an overview of the SAP buffer hit rate in real-time. The display format is a list and a line graph.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/Status Reporting/Real-Time/

Record

SAP Buffer Summary (PI_BUFF)

Fields

Field name	Description
CUA HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the CUA buffer
FieldDescription HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the field description buffer
GenericKey HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the generic key buffer
InitialRecords HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the initial records buffer
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
Program HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the program buffer
Screen HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the screen buffer
ShortNameTAB HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the short nametab buffer
SingleRecord HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the single record buffer
System ID	SAP system ID
TableDefinition HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the table definition buffer

Drilldown reports (field level)

Report name	Description
SAP Buffer Detail (CUA)	Displays details of an SAP buffer (CUA buffer) in real-time. To display this report, click the CUA HitRatio % field.
SAP Buffer Detail (FieldDescription)	Displays details of an SAP buffer (field description buffer) in real-time. To display this report, click the FieldDescription HitRatio % field.
SAP Buffer Detail (GenericKey)	Displays details of an SAP buffer (generic key buffer) in real-time. To display this report, click the GenericKey HitRatio % field.
SAP Buffer Detail (InitialRecords)	Displays details of an SAP buffer (initial records buffer) in real-time. To display this report, click the InitialRecords HitRatio % field.
SAP Buffer Detail (Program)	Displays details of an SAP buffer (program buffer) in real-time. To display this report, click the Program HitRatio % field.
SAP Buffer Detail (Screen)	Displays details of an SAP buffer (screen buffer) in real-time. To display this report, click the Screen HitRatio % field.
SAP Buffer Detail (ShortNameTAB)	Displays details of an SAP buffer (short nametab buffer) in real-time. To display this report, click the ShortNameTAB HitRatio % field.
SAP Buffer Detail (SingleRecord)	Displays details of an SAP buffer (single record buffer) in real-time. To display this report, click the SingleRecord HitRatio % field.
SAP Buffer Detail (TableDefinition)	Displays details of an SAP buffer (table definition buffer) in real-time. To display this report, click the TableDefinition HitRatio % field.

SAP Buffer Hitratio Trend (hourly historical report)

Overview

The SAP Buffer Hitratio Trend report displays the hourly trends in the SAP buffer hit rate over the past 24 hours. The display format is a table and a line graph.

You can display minute-by-minute drilldown reports from the displayed data in order to view more detailed data for specific time periods.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/Status Reporting/Daily Trend/

Record

WorkLoad Summary Interval (PI)

Fields

Field name	Description
CUA HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the CUA buffer
FieldDescription HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the field description buffer
GenericKey HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the generic key buffer
InitialRecords HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the initial records buffer
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
Program HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the program buffer
Screen HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the screen buffer
ShortNameTAB HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the short nametab buffer
SingleRecord HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the single record buffer
System ID	SAP system ID

Field name	Description
TableDefinition HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the table definition buffer

SAP Buffer Hitratio Trend (daily historical report)

Overview

The SAP Buffer Hitratio Trend report displays the daily trends in the SAP buffer hit rate over the past month. The display format is a list and a line graph.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/Monthly Trend/

Record

WorkLoad Summary Interval (PI)

Fields

Field name	Description
CUA HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the CUA buffer
FieldDescription HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the field description buffer
GenericKey HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the generic key buffer
InitialRecords HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the initial records buffer
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
Program HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the program buffer
Screen HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the screen buffer
ShortNameTAB HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the short nametab buffer
SingleRecord HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the single record buffer
System ID	SAP system ID
TableDefinition HitRatio %	Percentage of the database queries that were not passed to the database because they were found in the table definition buffer

SAP Memory Detail

Overview

The SAP Memory Detail report displays the details of the SAP memory in real-time. The display format is a list. This is a drilldown report.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/Status Reporting/Real-Time/Drilldown Only/

Record

SAP Memory Summary (PI_MEM)

Fields

Field name	Description
EmSlotsAct %	Current usage of the expansion memory slots
EmSlotsTotal	Total number of expansion memory slots
EsAct %	Current expansion memory usage
EsAttached %	Usage of the attached expansion memory
EsTotal	Size (in megabytes) of the expansion memory
HeapAct %	Current heap area usage
HeapTotal	Total size (in megabytes) of the heap area
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
PrivWpNo	Number of work processes that were placed in the PRIV mode
R3PagingUsed %	Paging area usage
R3RollUsed %	Roll area usage
System ID	SAP system ID
WpDiaRestart	Number of dialog work processes with <code>restart=Yes</code> specified
WpNonDiaRestart	Number of dialog work processes with <code>restart=No</code> specified

SAP Memory Used

Overview

The *SAP Memory Used* report displays an analysis report in the event of a problem with the SAP memory usage. It displays the minute-by-minute trends in the SAP memory usage over the past hour. The display format is a table and a line graph.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/Troubleshooting/Recent Past/

Record

WorkLoad Summary Interval (PI)

Fields

Field name	Description
EsAct %	Current expansion memory usage
HeapAct %	Current heap area usage
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
R3PagingUsed %	Paging area usage
R3RollUsed %	Roll area usage
System ID	SAP system ID

Drilldown reports (report level)

Report name	Description
Process Detail	Displays the activity status of the work process over the past hour.

SAP Memory Used Status

Overview

The SAP Memory Used Status report displays an overview of the SAP memory usage in real-time. The display format is a list and a line graph.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/Status Reporting/Real-Time/

Record

SAP Memory Summary (PI_MEM)

Fields

Field name	Description
EsAct %	Current expansion memory usage
HeapAct %	Current heap area usage
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
R3PagingUsed %	Paging area usage
R3RollUsed %	Roll area usage
System ID	SAP system ID

Drilldown reports (field level)

Report name	Description
SAP Memory Detail	Displays details of the SAP memory in real-time. To display this report, click the EsAct %, HeapAct %, R3PagingUsed %, or R3RollUsed % field.

SAP Memory Used Trend (hourly historical report)

Overview

The SAP Memory Used Trend report displays hourly trends in the SAP memory usage over the past 24 hours. The display format is a table and a line graph. You can display minute-by-minute drilldown reports from the displayed data in order to view more detailed data in specific time periods.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/Status Reporting/Daily Trend/

Record

WorkLoad Summary Interval (PI)

Fields

Field name	Description
EsAct %	Current expansion memory usage
HeapAct %	Current heap area usage
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
R3PagingUsed %	Paging area usage
R3RollUsed %	Roll area usage
System ID	SAP system ID

SAP Memory Used Trend (daily historical report)

Overview

The SAP Memory Used Trend report displays the daily trends in the SAP memory usage over the past month. The display format is a list and a line graph.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/Monthly Trend/

Record

WorkLoad Summary Interval (PI)

Fields

Field name	Description
EsAct %	Current expansion memory usage
HeapAct %	Current heap area usage
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
R3PagingUsed %	Paging area usage
R3RollUsed %	Roll area usage
System ID	SAP system ID

UsersLoggedIn Trend (hourly historical report)

Overview

The `UsersLoggedIn` Trend report displays the trends in the number of users logged on over the past 24 hours. This report displays maximum and minimum values as well as average values. The display format is a table and a line graph. You can display minute-by-minute drilldown reports from the displayed data in order to view more detailed data in specific time periods.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/Status Reporting/Daily Trend/

Record

WorkLoad Summary Interval (PI)

Fields

Field name	Description
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
System ID	SAP system ID
UsersLoggedIn	Number of users currently logged on
UsersLoggedIn (Max)	Maximum number of users that have logged on
UsersLoggedIn (Min)	Minimum number of users that have logged on

UsersLoggedIn Trend (daily historical report)

Overview

The UsersLoggedIn Trend report displays the daily trends in the number of users logged on over the past month. This report displays maximum and minimum values as well as average values. The display format is a list and a line graph.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/Monthly Trend/

Record

WorkLoad Summary Interval (PI)

Fields

Field name	Description
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
System ID	SAP system ID
UsersLoggedIn	Number of users currently logged on
UsersLoggedIn (Max)	Maximum number of users that have logged on
UsersLoggedIn (Min)	Minimum number of users that have logged on

UsersLoggedIn Trend (Multi-Agent)

Overview

The UsersLoggedIn Trend (Multi-Agent) report compares among application servers the trends in the number of users logged on over the past month. The display format is a list and a line graph.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/Monthly Trend/

Record

WorkLoad Summary Interval (PI)

Fields

Field name	Description
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
System ID	SAP system ID
UsersLoggedIn	Number of users currently logged on
UsersLoggedIn (Max)	Maximum number of users that have logged on
UsersLoggedIn (Min)	Minimum number of users that have logged on

Background Processing SystemWideQueue

Overview

The Background Processing SystemWideQueue report displays hourly trends in the number of jobs waiting to be executed over the past 24 hours (average in the entire system).

Storage location

Reports/SAP System/SAP Basis/Web Application Server/Status Reporting/Daily Trend/Advanced/

Record

Background Processing (PI_BTCP)

Fields

Field name	Description
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
SystemWideQueueLength	Number of jobs waiting to be executed (average in the entire system)
System ID	SAP system ID

Background Service ServerSpecificQueue

Overview

The Background Service ServerSpecificQueue report displays hourly trends in the number of released jobs waiting to be executed over the past 24 hours.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/Status Reporting/Daily Trend/Advanced/

Record

Background Service (PI_BTC)

Fields

Field name	Description
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
ServerSpecificQueueLength	Number of released jobs waiting to be executed
System ID	SAP system ID

Background Service Utilization %

Overview

The Background Service Utilization % report displays hourly trends in the average usage of the server's background processes over the past 24 hours.

Storage location

Reports/SAP System/SAP Basis/Web Application Server/Status Reporting/Daily Trend/Advanced/

Record

Background Service (PI_BTC)

Fields

Field name	Description
Instance Name	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. The setting can be changed by the <code>rdisp/myname</code> parameter.
System ID	SAP system ID
Utilization %	Average usage of the server's background work processes

Chapter

9. Records

This chapter describes the records for PFM - Agent for Enterprise Applications.

For details about how to collect performance data for each type of record, see the chapter that describes the functions of Performance Management in the *Job Management Partner 1/Performance Management Planning and Configuration Guide* or the chapter that describes the management of operation monitoring data in the *Job Management Partner 1/Performance Management User's Guide*.

- Data model

- Format of record explanations

- List of ODBC key fields

- Summary rules

- List of data types

- Field values

- Fields added only when data is stored in the Store database

- Notes about records

- List of records

Data model

Each PFM - Agent's records and fields are referred to collectively as a *data model*. There is a specific version number for each PFM - Agent and its data model. The data model for PFM - Agent for Enterprise Applications 09-00 is 5.0.

The version of each PFM - Agent's data model is displayed in the Properties window of PFM - Web Console, which is displayed when the agent icon on the **Agents** page is clicked and then the **Properties** method is clicked.

For details about the data model, see the chapter that describes the functions of Performance Management in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

Format of record explanations

This chapter describes the records for PFM - Agent for Enterprise Applications in alphabetical order. Each record explanation contains the following subsections:

Function

Provides an overview of the performance data that is stored in the record and includes important information to be noted.

Default and changeable values

Consists of a table of the default values for the performance data under the collection conditions that are defined for the record, and indicates whether the values can be changed by the user. The table below lists and describes the items that are presented in *Default and changeable values*. For details about each item described in this table, see the chapter that describes management of operation monitoring data in the *Job Management Partner 1/Performance Management User's Guide*.

Item	Description	Changeable
Collection Interval	Performance data collection interval (in seconds)	Y: Changeable N: Not changeable
Collection Offset [#]	Offset value for starting performance data collection (in seconds). For details about the offset value, see the chapter that describes management of operation monitoring data in the <i>Job Management Partner 1/Performance Management User's Guide</i> . For details about the start time for performance data collection, see the chapter that describes the functions of Performance Management in the <i>Job Management Partner 1/Performance Management Planning and Configuration Guide</i> .	
Log	Whether collected performance data is stored in the Store database: Yes: Store (however, if <code>Collection Interval=0</code> is set, collected performance data is not stored). No: Do not store.	
LOGIF	Conditions for storing collected performance data in the Store database	

#

The value range is 0-32,767 seconds (within the value range specified for Collection Interval). This is used to distribute the collection processing workload, because data collection is concentrated when multiple data items are collected. The data collection time that is recorded is the same as for the Collection Interval

regardless of the value of Collection Offset.

If you change the value of Collection Offset, you should take into account the collection processing workload.

ODBC key fields

Indicates the ODBC key fields that are required in order to use the record data stored in the Store database by using SQL statements with PFM - Manager. Some ODBC key fields are common to all records, and some are specific to each record. This section presents the ODBC key fields that are specific to each record. Only the multi-instance records have specific ODBC key fields.

For details about the ODBC key fields common to all records, see *List of ODBC key fields* in this chapter. For details about how to use the ODBC key fields, see the chapter that describes linkage to an ODBC-compatible application program in the *Job Management Partner 1/Performance Management User's Guide*.

Lifetime

Indicates the period during which consistency is guaranteed for the performance data that is collected in the record. For details about the lifetime, see the chapter that describes the functions of Performance Management in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

Record size

Indicates the amount of performance data that can be collected and stored in each record at one time.

Fields

Provides a table that describes the fields of each record. The table contains the following items:

- PFM - View name (PFM - Manager name)

- PFM - View name

Indicates the field name that is displayed by PFM - Web Console.

- PFM - Manager name

Indicates the field name (PFM - Manager name) to be specified in SQL statements when the statements are used from PFM - Manager to access the field data stored in the Store database.

You specify the record ID at the beginning of an SQL statement. For example, to specify the DialogSteps (DIALOG_STEPS) field of the Dialog Service (PI_DIA) record, specify PI_DIA_DIALOG_STEPS.

- **Description**
Explanation of the performance data that is stored in the field.
- **Summary**
Method (summary rules) used by Agent Store to summarize data. For details about the summary rules, see *Summary rules* later in this chapter.
- **Format**
Data type of the field value, such as `char` or `float`. For details about the data types, see *List of data types* later in this chapter.
- **Delta**
In contrast to the data collected as the cumulative value, the so-called *delta* is the data that indicates the changed amount. For details about delta, see *Field values* later in this chapter.
- **Supported version**
Indicates the SAP Basis version that can use the field. If a version number is shown, the field is supported by that version and all subsequent versions. A cell with three dashes (--) means that the field can be used regardless of the SAP Basis version.
- **Data source**
Method used to obtain the field value or the source of the data. For details about field values, see *Field values* later in this chapter.

List of ODBC key fields

Some ODBC key fields are common to all records, and some are specific to each record. This section presents the ODBC key fields common to all records. You need the ODBC key fields to use record data stored in the Store database by using SQL statements with PFM - Manager.

The table below lists the ODBC key fields common to all records. For details about the ODBC key fields specific to each record, see the details of each record.

Table 9-1: List of ODBC key fields common to all records

ODBC key field	ODBC format	Delta	Description
<i>record-ID_DATE</i>	SQL_INTEGER	Internal	Key in the record that indicates the record creation date
<i>record-ID_DATETIME</i>	SQL_INTEGER	Internal	Combination of the <i>record-ID_DATE</i> and <i>record-ID_TIME</i> fields
<i>record-ID_DEVICEID</i>	SQL_VARCHAR	Internal	<i>instance-name [host-name]</i>
<i>record-ID_DRAWER_TYPE</i>	SQL_VARCHAR	Internal	Type. Valid values are as follows: m: Minute H: Hour D: Day W: Week M: Month Y: Year
<i>record-ID_PROD_INST</i>	SQL_VARCHAR	Internal	Instance name of PFM - Agent
<i>record-ID_PRODID</i>	SQL_VARCHAR	Internal	Product ID of PFM - Agent
<i>record-ID_RECORD_TYPE</i>	SQL_VARCHAR	Internal	Identifier indicating the record type (4 bytes)
<i>record-ID_TIME</i>	SQL_INTEGER	Internal	Record creation time (Greenwich mean time (GMT))

Summary rules

A summary record summarizes data collected at a specific interval (minute, hour, day, week, month, or year) and stores it in the Store database. The summarization is performed on the basis of the definition for operation specified for each field. Such definitions for operation are called the *summary rules*.

A field that is added to the Store database as a result of summarization is called an *added field*. Whether there is an added field and an added field's type depend on the summary rule. Some added fields are displayed as record fields in PFM - Web Console. Those added fields that are displayed in PFM - Web Console can be used as fields that are displayed in the historical reports.

To distinguish from *added fields* that are added by summarization, the fields described in each record explanation are called *fixed fields*.

The name of an added field is as follows:

- Name of an added field that is stored in the Store database
PFM - Manager name of the fixed field with a suffix
- Name of an added field that is displayed in PFM - Web Console
PFM - View name of the fixed field with a suffix

The following table lists the suffixes used for the PFM - Manager names, the suffixes for the corresponding PFM - View names, and the data that is stored in the fields.

Table 9-2: List of suffixes for added fields

PFM - Manager name	PFM - View name	Stored data
_TOTAL	(Total)	Sum of the field's values in the records collected in the summary period
_TOTAL_SEC	(Total)	Sum of the field's values in the records collected in the summary period (applicable to the <code>utime</code> type)
_COUNT	--	Number of records collected in the summary period
_HI	(Max)	Maximum field value in the records collected in the summary period
_LO	(Min)	Minimum field value in the records collected in the summary period

Legend:

--: There is no added field.

The following lists and describes the summary rules.

Table 9-3: List of summary rules

Summary rule name	Summary rule
COPY	Stores the field value in the most recent record within the summary period.
AVG	<p>Stores the average field value in the summary period. The formula is as follows: (sum of field's values)/(number of collected records) Added field (Store database)</p> <ul style="list-style-type: none"> • <code>_TOTAL</code> • <code>_TOTAL_SEC</code> (applicable to the <code>utime</code> type) • <code>_COUNT</code> <p>Added field (PFM - Web Console)^{#1, #2}</p> <ul style="list-style-type: none"> • (Total)
ADD	Stores the sum of the field's values in the summary period.
HI	Stores the field's maximum value in the summary period.
LO	Stores the field's minimum value in the summary period.
HILO	<p>Stores the maximum, minimum, and average values of data in the summary period. The average value is stored in a fixed-field. The formula is as follows: (sum of field's values)/(number of collected records) Added field (Store database)</p> <ul style="list-style-type: none"> • <code>_HI</code> • <code>_LO</code> • <code>_TOTAL</code> • <code>_TOTAL_SEC</code> (applicable to the <code>utime</code> type) • <code>_COUNT</code> <p>Added field (PFM - Web Console)^{#1, #2}</p> <ul style="list-style-type: none"> • (Max) • (Min) • (Total)
%	<p>Stores the average field value in the summary period. This rule is mainly applied to a field for a percentage ratio. The formula is as follows: (sum of field's values)/(number of collected records) Added field (Store database)</p> <ul style="list-style-type: none"> • <code>_TOTAL</code> • <code>_TOTAL_SEC</code> (applicable to the <code>utime</code> type) • <code>_COUNT</code> <p>Added field (PFM - Web Console)^{#3}</p> <ul style="list-style-type: none"> • (Total)

Summary rule name	Summary rule
R	<p>Stores the average field value in the summary period. This rule is mainly applied to a field that indicates a quantity per second. The formula is as follows: (sum of field's values)/(number of collected records) When <code>delta</code> is specified for a <code>Real-Time</code> report, a special calculation that divides a difference by <code>Interval</code> is employed. Added field (Store database)</p> <ul style="list-style-type: none"> • <code>_TOTAL</code> • <code>_COUNT</code> <p>Added field (PFM - Web Console)^{#1, #2}</p> <ul style="list-style-type: none"> • <code>(Total)</code>
--	Not summarized.

#1

For a `utime`-type field that contains `_AVG` in its PFM - Manager name, the `(Total)` field added in PFM - Web Console cannot be used in historical reports.

#2

For a field that contains any of the following character strings in its PFM - Manager name, the `(Total)` field added in PFM - Web Console cannot be used in historical reports:

`_PER_`, `PCT`, `PERCENT`, `_AVG`, `RATE_TOTAL`

#3

In the case of a `utime`-type field only, the `(Total)` field added in PFM - Web Console can be used in historical reports.

List of data types

The table below lists the data types for field values, and their corresponding C and C++ data types. The values shown in the *Format* column of the record field tables are those shown below in the *Field* column under *Data type*.

Table 9-4: List of data types

Data type		Size (bytes)	Description
Field	C and C++		
char(<i>n</i>)	char()	Value in parentheses	Character data with a length of <i>n</i> bytes
double	double	8	Numeric value (1.7E ± 308 (15 digits))
float	float	4	Numeric value (3.4E ± 38 (7 digits))
long	long	4	Numeric value (-2,147,483,648 to 2,147,483,647)
short	short	2	Numeric value (-32,768 to 32,767)
string(<i>n</i>)	char[]	Value in parentheses	Character string with a length of <i>n</i> bytes. The last character is null.
time_t	unsigned long	4	Numeric value (0 to 4,294,967,295)
timeval	Structure	8	Numeric value (first 4 bytes are seconds, next 4 bytes are microseconds)
ulong	unsigned long	4	Numeric value (0 to 4,294,967,295)
utime	Structure	8	Numeric value (first 4 bytes are seconds, next 4 bytes are microseconds)
word	unsigned short	2	Numeric value (0 to 65,535)
(Not applicable)	unsigned char	1	Numeric value (0 to 255)

Field values

This section describes the values stored in the fields.

Data source

Each field contains a value obtained from a Performance Management product or monitored program or a value derived by applying a formula. In the tables, the *Data source* column indicates the source of the value or the formula used to produce the value.

The character string in the *Data source* column for PFM - Agent for Enterprise Applications indicates the transaction code of the SAP system. It means that the value indicated by the corresponding transaction code is to be obtained. If the value cannot be identified by the transaction code alone, the monitoring tree element (MTE) name is also provided (for example, *SAP-system-ID\SAP-instance-name\Background\Utilisation*). For details about the MTE name, see the documentation for your SAP system.

Delta

In contrast to the data collected as the cumulative value, the so-called *delta* is the data that indicates the changed amount. For example, if the performance data value obtained during the first collection is 3 and the performance data value obtained during the second collection is 4, then the cumulative value is 7 and the changed amount is 1. In the tables, the *Delta* column indicates whether each field's value is a delta value.

The following table explains the delta characteristics of performance data collected by PFM - Agent for Enterprise Applications:

Record type	Delta	Data type	Indicate delta value [#]	Record value
PI record type	Yes	Real-time data	Selected	The displayed value is the changed amount.
			Not selected	The displayed value is the cumulative value.
		- Historical data - Alarm monitoring data	N/A	The displayed value is the changed amount.
	No	Real-time data	Selected	The displayed value was the actual value at the time of data collection.

Record type	Delta	Data type	Indicate delta value [#]	Record value
			Not selected	The displayed value was the actual value at the time of data collection.
		- Historical data - Alarm monitoring data	N/A	The displayed value was the actual value at the time of data collection.
PD record type	Yes	Real-time data	Selected	The displayed value is the change.
			Not selected	The displayed value is the cumulative value.
		- Historical data - Alarm monitoring data	N/A	The displayed value is the cumulative value.
	No	Real-time data	Selected	The displayed value was the actual value at the time of data collection.
			Not selected	The displayed value was the actual value at the time of data collection.
		- Historical data - Alarm monitoring data	N/A	The displayed value was the actual value at the time of data collection.

Legend:

N/A: Not applicable

#

The following setting is specified in PFM - Web Console:

- **Indicate delta value** is selected in the report wizard's **Edit > Indication settings (Realtime)** window.
- **Indicate delta value** is selected in **Indication settings (Realtime)** on the **Properties** page in the report window.

The following point should be noted about collection of performance data:

- If you select the **Indicate delta value** option for a real-time report, the value that is displayed is since the time the first data was collected. If the report requires previous data, the initial value is 0. The value of the collected data is displayed after the second data collection.

Fields added only when data is stored in the Store database

The following table lists the fields that are added only when data is stored in the Store database:

PFM - View name (PFM - Manager name)	Description	Format	Delta	Supported version	Data source
Agent Host (DEVICEID)	Name of host where PFM - Agent is running	string (256)	No	All	--
Agent Instance (PROD_INST)	Instance name of PFM - Agent	string (256)	No	All	--
Agent Type (PROPID)	Product ID of PFM - Agent (1-byte identifier)	char	No	All	--
Date (DATE)	Record creation date (GMT) ^{#1, #3}	char (3)	No	All	--
Date and Time (DATETIME)	Combination of the Date (DATE) and Time (TIME) fields ^{#3}	char (6)	No	All	--
Drawer Type (DRAWER_TYPE)	Data summarization type (for a record of the PI record type). The type displayed in PFM - Web Console reports differs from the type displayed using the ODBC driver. ^{#2}	char	No	All	--
GMT Offset (GMT_ADJUST)	Difference (in seconds) between Greenwich Mean Time and local time	long	No	All	--
Time (TIME)	Record creation time (GMT) ^{#1, #3}	char (3)	No	All	--

Legend:

--: Indicates that the field's value is obtained without processing the performance data acquired from SAP system.

#1

The referencing time during summarization is set because data is summarized for records of the PI record type. The following table shows the setting value for each record type:

Type	Setting value for each record type
Minute	0 second of the time when the record was created.
Hour	0 minute and 0 second of the time when the record was created.
Day	0:00 and 0 second of the day when the record was created.
Week	0:00 and 0 second on Monday of the week when the record was created.
Month	0:00 and 0 second on the 1st day of the month when the record was created.
Year	0:00 and 0 second on January 1st of the year when the record was created.

#2

The following table shows the type displayed in PFM - Web Console reports and the type displayed using the ODBC driver:

Type	PFM - Web Console	ODBC driver
Minute	Minute	m
Hour	Hour	H
Day	Day	D
Week	Week	W
Month	Month	M
Year	Year	Y

#3

If data is displayed using a report or ODBC driver, the Date field is displayed in the format *YYYYMMDD*, the Date and Time field in the format *YYYYMMDD hh:mm:ss*, and the Time field in the format *hh:mm:ss*.

Notes about records

This subsection provides notes about collecting records.

Record creation result when data cannot be acquired

The following describes the record creation result when data to be stored in fields cannot be acquired.

- No record is created.

No record is created in the following cases:

- PFM - Agent for Enterprise Applications cannot collect the performance data that is to be stored in the field defined as the ODBC key field.
- PFM - Agent for Enterprise Applications cannot collect the performance data that is to be stored in the field indicating Enterprise Applications' performance value.

- A record with null fields is created.

A record with null fields is created in the following cases:

- PFM - Agent for Enterprise Applications failed the collection of character-type data.
- PFM - Agent for Enterprise Applications collected null character-type data.

- A record containing a field with the value `-1` is created.

If PFM - Agent for Enterprise Applications fails the collection of numeric-type component data, a record containing a field with the value `-1` is created.

- A record containing a field with the value `Unknown` is created.

A record containing a field with the value `Unknown` is created in the following cases:

- Field has a definition area in the data model, but the data collected by PFM - Agent for Enterprise Applications is not included in that definition area.
- PFM - Agent for Enterprise Applications cannot collect data for a field that has a definition area in the data model.

List of records

This section lists the records that can be collected by PFM - Agent for Enterprise Applications.

The following tables list the records that can be collected by PFM - Agent for Enterprise Applications and the information that is stored in each record, in the order of record names and record IDs.

Table 9-5: List of records for PFM - Agent for Enterprise Applications (record name)

Record name	Record ID	Information stored in record
Background Processing	PI_BTCP	Information about the status and processing efficiency of the background system in the entire SAP system
Background Service	PI_BTC	Statistical information about the background service
CCMS Alert Monitor Command	PD_ALMX	Result of extracting the CCMS alert information of the SAP system
Dialog Service	PI_DIA	Statistical information about the dialog service
Enqueue Service	PI_ENQ	Statistical information about the enqueueing service
SAP Buffer Summary	PI_BUFF	Summary information about the SAP buffers
SAP Instance Summary	PD_SRV	Information about SAP instances (equivalent to the information that can be verified by transaction code SM51)
SAP Memory Summary	PI_MEM	Summary information about various SAP memories
Spool Service	PI_SPO	Statistical information about the spool service
System Log Monitor Command	PD_SLMX	Result of extracting the system log information of the SAP system
Update1 Service	PI_UPD1	Statistical information about the V1 update service
Update2 Service	PI_UPD2	Statistical information about the V2 update service
User defined Monitor (Perf.)	PI_UMP	In SAP system monitor information, the performance information collected according to user definitions

Record name	Record ID	Information stored in record
Work Process Summary	PD	Overview of work processes (equivalent to the information that can be verified by transaction code SM50)
WorkLoad Summary Interval	PI	Information needed to obtain and analyze the dialog task's workload time statistics

Table 9-6: List of records for PFM - Agent for Enterprise Applications (record ID)

Record ID	Record name	Information stored in record
PD	Work Process Summary	Overview of work processes (equivalent to the information that can be verified by transaction code SM50)
PD_ALMX	CCMS Alert Monitor Command	Result of extracting the CCMS alert information of the SAP system
PD_SLMX	System Log Monitor Command	Result of extracting the system log information of the SAP system
PD_SRV	SAP Instance Summary	Information about SAP instances (equivalent to the information that can be verified by transaction code SM51)
PI	WorkLoad Summary Interval	Information needed to obtain and analyze the dialog task's workload time statistics
PI_BTC	Background Service	Statistical information about the background service
PI_BTCP	Background Processing	Information about the status and processing efficiency of the background system in the entire SAP system
PI_BUFF	SAP Buffer Summary	Summary information about the SAP buffers
PI_DIA	Dialog Service	Statistical information about the dialog service
PI_ENQ	Enqueue Service	Statistical information about the enqueueing service
PI_MEM	SAP Memory Summary	Summary information about various SAP memories
PI_SPO	Spool Service	Statistical information about the spool service
PI_UMP	User defined Monitor (Perf.)	In SAP system monitor information, the performance information collected according to user definitions
PI_UPD1	Update1 Service	Statistical information about the V1 update service

Record ID	Record name	Information stored in record
PI_UPD2	Update2 Service	Statistical information about the V2 update service

Background Processing (PI_BTCP)

Function

The Background Processing (PI_BTCP) record stores information about the status and processing efficiency of the background system of the entire SAP system.

Default and changeable values

Item	Default value	Changeable
Collection Interval	600	Y
Collection Offset	40	Y
Log	No	Y
LOGIF	(Blank)	Y

ODBC key fields

None

Lifetime

None

Record size

- Fixed part: 743 bytes
- Variable part: 0 bytes

Fields

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
Instance Name (INSTANCE_NAME)	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. This setting can be changed by the <code>rdisp/myname</code> parameter.	COPY	string (21)	No	6.20	--

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
Interval (INTERVAL)	Interval in seconds at which records were stored (current value in Record Time field - previous value in Record Time field). The initial value is 0.	ADD	ulong	No	6.20	--
Record Time (RECORD_TIME)	Record creation time	COPY	time_t	No	6.20	--
Record Type (INPUT_RECORD_TYPE)	Record type (BTCP)	COPY	char(8)	No	6.20	--
System ID (SYSTEM_ID)	SAP system ID	COPY	string(9)	No	6.20	--
SystemWideFreeBP WP (SYSTEM_WIDE_FREE_BP_WP)	Number of free background work processes in the entire system.	AVG	float	No	6.20	RZ20 (SAP-system-ID\BackgroundService\SystemWideFreeBPWP)
SystemWideQueue Length (SYSTEM_WIDE_QUEUE_LENGTH)	Average number of jobs waiting for background work processes at all application servers	AVG	float	No	6.20	RZ20 (SAP-system-ID\BackgroundService\SystemWideQueueLength)

Legend:

Smry: Summary

Frmt: Format

Δ: Delta

Sup. ver.: Supported version

Background Service (PI_BTC)

Function

The Background Service (PI_BTC) record stores statistical information about the background service. One record is created for each SAP instance that provides this service.

Default and changeable values

Item	Default value	Changeable
Collection Interval	600	Y
Collection Offset	40	Y
Log	No	Y
LOGIF	(Blank)	Y

ODBC key fields

None

Lifetime

None

Record size

- Fixed part: 759 bytes
- Variable part: 0 bytes

Fields

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
Instance Name (INSTANCE_NAME)	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. This setting can be changed by the <code>rdisp/myname</code> parameter.	COPY	string (21)	No	6.20	--

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
Interval (INTERVAL)	Interval in seconds at which records were stored (current value in Record Time field - previous value in Record Time field). The initial value is 0.	ADD	ulong	No	6.20	--
NumberOfWpBTC (NUMBER_OF_WP_BTC)	Number of background work processes on a single application server	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Background\NumberOfWpBTC)
Record Time (RECORD_TIME)	Record creation time	COPY	time_t	No	6.20	--
Record Type (INPUT_RECORD_TYPE)	Record type (BTC)	COPY	char(8)	No	6.20	--
ServerSpecificQueueLength (SERVER_SPECIFIC_QUEUE_LENGTH)	Number of jobs that must be executed explicitly at the application server but are waiting for an available background work process	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Background\ServerSpecificQueueLength)
System ID (SYSTEM_ID)	SAP system ID	COPY	string(9)	No	6.20	--
Utilization % (UTILIZATION)	Current usage of background processing capacity. This field contains the average of the percentage values for all background work processes.	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Background\Utilization)

Legend:

Smry: Summary

Frmt: Format

Δ: Delta

Sup. ver.: Supported version

CCMS Alert Monitor Command (PD_ALMX)

Function

The CCMS Alert Monitor Command (PD_ALMX) record stores the result of extracting the CCMS alert information of the SAP system.

Note

- This record cannot be displayed in real-time reports.

Default and changeable values

Item	Default value	Changeable
Collection Interval	600	Y
Collection Offset	0	Y
Log	No	Y
LOGIF	(Blank)	Y

ODBC key fields

None

Lifetime

None

Record size

- Fixed part: 5,073 bytes
- Variable part: 0 bytes

Fields

PFM - View name (PFM - Manager name)	Description	Format	Delta	Supported version	Data source
Elapsed Time (ELAPSED_TIME)	Command execution time in milliseconds	ulong	No	6.20	--
Exit Code (EXIT_CODE)	Command termination code	ulong	No	6.20	--

PFM - View name (PFM - Manager name)	Description	Format	Delta	Supported version	Data source
Instance Name (INSTANCE_NAME)	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. This setting can be changed by the <code>rdisp/myname</code> parameter.	string(21)	No	--	--
Interval (INTERVAL)	Interval in seconds at which records were stored (current value in Record Time field - previous value in Record Time field). The initial value is 0.	ulong	No	--	--
Path (PATH)	Command path (excluding the argument part)	string(256)	No	6.20	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record type (ALMX)	char(8)	No	--	--
Stderr Buffer (STDERR_BUFFER)	Standard error output buffer for the command	string(2049)	No	6.20	--
Stdout Buffer (STDOUT_BUFFER)	Standard output buffer for the command	string(2049)	No	6.20	--
System ID (SYSTEM_ID)	SAP system ID	string(9)	No	--	--

Dialog Service (PI_DIA)

Function

The Dialog Service (PI_DIA) record stores statistical information about the dialog service. One record is created for each SAP instance that provides this service.

Default and changeable values

Item	Default value	Changeable
Collection Interval	600	Y
Collection Offset	35	Y
Log	No	Y
LOGIF	(Blank)	Y

ODBC key fields

None

Lifetime

None

Record size

- Fixed part: 959 bytes
- Variable part: 0 bytes

Fields

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
DBRequestTime (DB_REQUEST_TIME)	Average time for processing logical database requests in milliseconds	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Dialog\DBRequestTime)
DialogSteps (DIALOG_STEPS)	Average number of dialog steps per minute	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Dialog\DialogSteps)

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
FrontendNetTime (FRONTEND_NET_TIME)	Network time (in milliseconds) used for the first data transfer from front end to application server and for the last data transfer from application server to front end. This does not include the value of the GuiCallBackTime field.	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Dialog\FrontEndNetTime)
FrontendResponseTime (FRONTEND_RESPONSE_TIME)	Average time (in milliseconds) the user waited at the front end for a request to be processed. This is the average of the totals of response time, network transfer time, and front-end processing time.	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Dialog\FrontendResponseTime)
GuiCallBackTime (GUI_CALL_BACK_TIME)	Average time (in milliseconds) the work process waited for the front end during communications between the application server and the front end in dialog steps.	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Dialog\GuiCallBackTime)
Instance Name (INSTANCE_NAME)	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. This setting can be changed by the <code>rdisp/myname</code> parameter.	COPY	string (21)	No	6.20	--
Interval (INTERVAL)	Interval in seconds at which records were stored (current value in Record Time field - previous value in Record Time field). The initial value is 0.	ADD	ulong	No	6.20	--

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
Load+GenTime (LOAD_GENTIME)	Average loading and creation time (in milliseconds) for source text, graphical user interface, and window information from the database	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Dialog\Load+GenTime)
LongRunners (LONG_RUNNERS)	Number of dialog work processes that have been running for a long time	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Dialog\LongRunners)
MonitoringTime (MONITORING_TIME)	Average time (in milliseconds) required for creating monitoring data in dialog steps	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Dialog\MonitoringTime)
NumberOfWPDia (NUMBER_OF_WP_DIA)	Number of dialog work processes	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Dialog\NumberOfWpDIA)
QueueLength % (QUEUE_LENGTH)	Average usage of the dispatcher queue	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Dialog\QueueLength)
QueueTime (QUEUE_TIME)	Average wait time (in milliseconds) in the dispatcher queue for user requests	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Dialog\QueueTime)
Record Time (RECORD_TIME)	Record creation time	COPY	time_t	No	6.20	--
Record Type (INPUT_RECORD_TYPE)	Record type (DIA)	COPY	char(8)	No	6.20	--

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
ResponseTime (RESPONSE_TIME)	Average dialog step processing time in milliseconds. This is the total time required for processing a dialog step; it includes the database processing time but not the network transfer time or front-end processing time.	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Dialog\ResponseTime)
ResponseTime:StandardTran. (RESPONSE_TIME_STANDARD_TRAN)	Response time of standard transactions in milliseconds	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Dialog\ResponseTime(StandardTran))
System ID (SYSTEM_ID)	SAP system ID	COPY	string (9)	No	6.20	--
UsersLoggedIn (USERS_LOGGED_IN)	Number of users logged on	HILO	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Dialog\UsersLoggedIn)
Utilization % (UTILIZATION)	Average usage of dialog work processes per application server	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Dialog\Utilization)

Legend:

Smry: Summary

Frmt: Format

Δ: Delta

Sup. ver.: Supported version

Enqueue Service (PI_ENQ)

Function

The Enqueue Service (PI_ENQ) record stores statistical information about the enqueueing service. One record is created for each SAP instance.

Default and changeable values

Item	Default value	Changeable
Collection Interval	600	Y
Collection Offset	40	Y
Log	No	Y
LOGIF	(Blank)	Y

ODBC key fields

None

Lifetime

None

Record size

- Fixed part: 743 bytes
- Variable part: 0 bytes

Fields

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
EnqueueClient EnqueueFreq (ENQUEUE_CLIENT _ENQUEUE_FREQ)	Number of enqueue processes per minute from another instance to the central instance (logical data lock)	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\EnqueueClient\EnqueueFreq)

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
EnqueueServer QueueLength % (ENQUEUE_SERVER _QUEUE_LENGTH)	Percentage of the enqueue service's queue length	%	float	No	6.20	RZ20 (SAP-system-ID\SA P-instance-name\E nqueue Server\QueueLen gth)
Instance Name (INSTANCE_NAME)	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. This setting can be changed by the <code>rdisp/myname</code> parameter.	COPY	string (21)	No	6.20	--
Interval (INTERVAL)	Interval in seconds at which records were stored (current value in Record Time field - previous value in Record Time field). The initial value is 0.	ADD	ulong	No	6.20	--
Record Time (RECORD_TIME)	Record creation time	COPY	time_t	No	6.20	--
Record Type (INPUT_RECORD_T YPE)	Record type (ENQ)	COPY	char (8)	No	6.20	--
System ID (SYSTEM_ID)	SAP system ID	COPY	string (9)	No	6.20	--

Legend:

Smry: Summary

Frmt: Format

Δ: Delta

Sup. ver.: Supported version

SAP Buffer Summary (PI_BUFF)

Function

The SAP Buffer Summary (PI_BUFF) record stores summary information about the SAP buffers. One record is created for each SAP instance.

- Nametab buffer (NTAB buffer)
 - Field description buffer (FTAB buffer, table DDNTF)
This buffer stores the description of repository items.
 - Initial record buffer (IREC buffer)
This buffer stores the layout of data records in a table.
 - Short nametab buffer (short NTAB buffer, SNTAB buffer)
This buffer combines the field description and table definition buffers and stores only the most important information in each buffer.
 - Table definition buffer (TTAB buffer, table DDNTT)
This buffer stores repository table definitions.
- Program buffer (R/3 executable buffer, ABAP buffer, PXA buffer)
This buffer stores compiled programs.
- R/3 GUI buffer
 - CUA buffer (Menu buffer)
This buffer stores the window menu and button definitions of the ABAP program.
 - Screen buffer (presentation buffer, Dynpro buffer)
This buffer stores the window information of the ABAP program.
- Table buffer
 - Generic key buffer (generic table buffer, TABL)
This buffer stores part or all of the database table contents.
 - Single record buffer (partial table buffer, TABLP)
This buffer stores individual records from the database table.

Default and changeable values

Item	Default value	Changeable
Collection Interval	600	Y
Collection Offset	40	Y
Log	No	Y
LOGIF	(Blank)	Y

ODBC key fields

None

Lifetime

None

Record size

- Fixed part: 1,287 bytes
- Variable part: 0 bytes

Fields

PFM - View name (PFM - Manager name)	Description	Smry	Fmt	Δ	Sup. ver.	Data source
CUA DirectoryUsed % (CUA_DIRECTORY_USED)	Usage of the CUA buffer directory (number of entries)	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\CUA\DirectoryUsed)
CUA HitRatio % (CUA_HIT_RATIO)	Percentage of the database queries that were not passed to the database because they were found in the CUA buffer	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\CUA\HitRatio)
CUA SpaceUsed % (CUA_SPACE_USED)	Usage of the CUA buffer storage	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\CUA\SpaceUsed)
CUA Swap (CUA_SWAP)	Number of times swapping occurred in the CUA buffer per minute because the buffer was full	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\CUA\Swap)

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
FieldDescription DirectoryUsed % (FIELD_DESCRIPTION_DIRECTORY_USED)	Usage of the field description buffer directory (number of entries)	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\FieldDescription\DirectoryUsed)
FieldDescription HitRatio % (FIELD_DESCRIPTION_HIT_RATIO)	Percentage of the database queries that were not passed to the database because they were found in the field description buffer	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\FieldDescription\HitRatio)
FieldDescription SpaceUsed % (FIELD_DESCRIPTION_SPACE_USED)	Usage of the field description buffer storage	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\FieldDescription\SpaceUsed)
FieldDescription Swap (FIELD_DESCRIPTION_SWAP)	Number of times swapping occurred in the field description buffer per minute because the buffer was full	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\FieldDescription\Swap)
GenericKey DirectoryUsed % (GENERIC_KEY_DIRECTORY_USED)	Usage of the generic key buffer directory (number of entries)	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\GenericKey\DirectoryUsed)
GenericKey HitRatio % (GENERIC_KEY_HIT_RATIO)	Percentage of the database queries that were not passed to the database because they were found in the generic key buffer	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\GenericKey\HitRatio)
GenericKey SpaceUsed % (GENERIC_KEY_SPACE_USED)	Usage of the generic key buffer storage	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\GenericKey\SpaceUsed)
GenericKey Swap (GENERIC_KEY_SWAP)	Number of times swapping occurred in the generic key buffer per minute because the buffer was full	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\GenericKey\Swap)

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
InitialRecords DirectoryUsed % (INITIAL_RECORD S_DIRECTORY_USE D)	Usage of the initial records buffer directory (number of entries)	%	float	No	6.20	RZ20 (SAP-system-ID\SA P-instance-name\I nitialRecords\D irectoryUsed)
InitialRecords HitRatio % (INITIAL_RECORD S_HIT_RATIO)	Percentage of the database queries that were not passed to the database because they were found in the initial records buffer	%	float	No	6.20	RZ20 (SAP-system-ID\SA P-instance-name\I nitialRecords\H itRatio)
InitialRecords SpaceUsed % (INITIAL_RECORD S_SPACE_USED)	Usage of the initial records buffer storage	%	float	No	6.20	RZ20 (SAP-system-ID\SA P-instance-name\I nitialRecords\S paceUsed)
InitialRecords Swap (INITIAL_RECORD S_SWAP)	Number of times swapping occurred in the initial records buffer per minute because the buffer was full	AVG	float	No	6.20	RZ20 (SAP-system-ID\SA P-instance-name\I nitialRecords\S wap)
Instance Name (INSTANCE_NAME)	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. This setting can be changed by the <code>rdisp/myname</code> parameter.	COPY	string (21)	No	6.20	--
Interval (INTERVAL)	Interval in seconds at which records were stored (current value in Record Time field - previous value in Record Time field). The initial value is 0.	ADD	ulong	No	6.20	--
Program DirectoryUsed % (PROGRAM_DIRECT ORY_USED)	Usage of the program buffer directory (number of entries)	%	float	No	6.20	RZ20 (SAP-system-ID\SA P-instance-name\P rogram\Director yUsed)

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
Program HitRatio % (PROGRAM_HIT_RATIO)	Percentage of the database queries that were not passed to the database because they were found in the program buffer	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Program\HitRatio)
Program SpaceUsed % (PROGRAM_SPACE_USED)	Usage of the program buffer storage	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Program\SpaceUsed)
Program Swap (PROGRAM_SWAP)	Number of times swapping occurred in the program buffer per minute because the buffer was full	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Program\Swap)
Record Time (RECORD_TIME)	Record creation time	COPY	time_t	No	6.20	--
Record Type (INPUT_RECORD_TYPE)	Record type (BUFF)	COPY	char(8)	No	6.20	--
Screen DirectoryUsed % (SCREEN_DIRECTORY_USED)	Usage of the screen buffer directory (number of entries)	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Screen\DirectoryUsed)
Screen HitRatio % (SCREEN_HIT_RATIO)	Percentage of the database queries that were not passed to the database because they were found in the screen buffer	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Screen\HitRatio)
Screen SpaceUsed % (SCREEN_SPACE_USED)	Usage of the screen buffer storage	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Screen\SpaceUsed)
Screen Swap (SCREEN_SWAP)	Number of times swapping occurred in the screen buffer per minute because the buffer was full	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Screen\Swap)

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
ShortNameTAB DirectoryUsed % (SHORT_NAME_TAB _DIRECTORY_USED)	Usage of the short nametab buffer directory (number of entries)	%	float	No	6.20	RZ20 (SAP-system-ID\SA P-instance-name\S hortNameTAB\Dir ectoryUsed)
ShortNameTAB HitRatio % (SHORT_NAME_TAB _HIT_RATIO)	Percentage of the database queries that were not passed to the database because they were found in the short nametab buffer	%	float	No	6.20	RZ20 (SAP-system-ID\SA P-instance-name\S hortNameTAB\Hit Ratio)
ShortNameTAB SpaceUsed % (SHORT_NAME_TAB _SPACE_USED)	Usage of the short nametab buffer storage	%	float	No	6.20	RZ20 (SAP-system-ID\SA P-instance-name\S hortNameTAB\Spa ceUsed)
ShortNameTAB Swap (SHORT_NAME_TAB _SWAP)	Number of times swapping occurred in the short nametab buffer per minute because the buffer was full	AVG	float	No	6.20	RZ20 (SAP-system-ID\SA P-instance-name\S hortNameTAB\Swa p)
SingleRecord DirectoryUsed % (SINGLE_RECORD_ DIRECTORY_USED)	Usage of the single record buffer directory (number of entries)	%	float	No	6.20	RZ20 (SAP-system-ID\SA P-instance-name\S ingleRecord\Dir ectoryUsed)
SingleRecord HitRatio % (SINGLE_RECORD_ HIT_RATIO)	Percentage of the database queries that were not passed to the database because they were found in the single record buffer	%	float	No	6.20	RZ20 (SAP-system-ID\SA P-instance-name\S ingleRecord\Hit Ratio)
SingleRecord SpaceUsed % (SINGLE_RECORD_ SPACE_USED)	Usage of the single record buffer storage	%	float	No	6.20	RZ20 (SAP-system-ID\SA P-instance-name\S ingleRecord\Spa ceUsed)
SingleRecord Swap (SINGLE_RECORD_ SWAP)	Number of times swapping occurred in the single record buffer per minute because the buffer was full	AVG	float	No	6.20	RZ20 (SAP-system-ID\SA P-instance-name\S ingleRecord\Swa p)

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
System ID (SYSTEM_ID)	SAP system ID	COPY	string (9)	No	6.20	--
TableDefinition DirectoryUsed % (TABLE_DEFINITI ON_DIRECTORY_US ED)	Usage of the table definition buffer directory (number of entries)	%	float	No	6.20	RZ20 (SAP-system-ID\SA P-instance-name\T ableDefinition\ DirectoryUsed)
TableDefinition HitRatio % (TABLE_DEFINITI ON_HIT_RATIO)	Percentage of the database queries that were not passed to the database because they were found in the table definition buffer	%	float	No	6.20	RZ20 (SAP-system-ID\SA P-instance-name\T ableDefinition\ HitRatio)
TableDefinition SpaceUsed % (TABLE_DEFINITI ON_SPACE_USED)	Usage of the table definition buffer storage	%	float	No	6.20	RZ20 (SAP-system-ID\SA P-instance-name\T ableDefinition\ SpaceUsed)
TableDefinition Swap (TABLE_DEFINITI ON_SWAP)	Number of times swapping occurred in the table definition buffer per minute because the buffer was full	AVG	float	No	6.20	RZ20 (SAP-system-ID\SA P-instance-name\T ableDefinition\ Swap)

Legend:

Smry: Summary

Frmt: Format

Δ : Delta

Sup. ver.: Supported version

SAP Instance Summary (PD_SRV)

Function

The SAP Instance Summary (PD_SRV) record stores information about an SAP instance (equivalent to the information that can be verified by transaction code SM51).

Default and changeable values

Item	Default value	Changeable
Collection Interval	600	Y
Collection Offset	35	Y
Log	No	Y
LOGIF	(Blank)	Y

ODBC key fields

PD_SRV_NAME

Lifetime

From specification to change of the server name

Record size

- Fixed part: 681 bytes
- Variable part: 102 bytes

Fields

PFM - View name (PFM - Manager name)	Description	Format	Delta	Supported version	Data source
Host (HOST)	Name of the host where the SAP instance is run	string(21)	No	6.20	SM51
Instance Name (INSTANCE_NAME)	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. This setting can be changed by the <code>rdisp/myname</code> parameter.	string(21)	No	6.20	--

PFM - View name (PFM - Manager name)	Description	Format	Delta	Supported version	Data source
Interval (INTERVAL)	Interval in seconds at which records were stored (current value in Record Time field - previous value in Record Time field). The initial value is 0.	ulong	No	6.20	--
Name (NAME)	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. This setting can be changed by the <code>rdisp/myname</code> parameter.	string(21)	No	6.20	SM51
Record Time (RECORD_TIME)	Record creation time	time_t	No	6.20	--
Record Type (INPUT_RECORD_TYPE)	Record type (SRV)	char(8)	No	6.20	--
Serv (SERV)	Service name	string(21)	No	6.20	SM51
System ID (SYSTEM_ID)	SAP system ID	string(9)	No	6.20	--
TypeList (TYPELIST)	SAP instance's type list	string(9)	No	6.20	SM51

SAP Memory Summary (PI_MEM)

Function

The SAP Memory Summary (PI_MEM) record stores summary information about various SAP memories. One record is created for each SAP instance.

Default and changeable values

Item	Default value	Changeable
Collection Interval	600	Y
Collection Offset	40	Y
Log	No	Y
LOGIF	(Blank)	Y

ODBC key fields

None

Lifetime

None

Record size

- Fixed part: 951 bytes
- Variable part: 0 bytes

Fields

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
EmSlotRecentPeak % (EM_SLOT_RECENT_PEAK)	Recent peak usage of expansion memory slots	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\R3MemMgmtResources\EmSlotRecentPeak)
EmSlotsAct % (EM_SLOTS_ACT)	Current usage of expansion memory slots	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\R3MemMgmtResources\EmSlotsAct)

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
EmSlotsPeak % (EM_SLOTS_PEAK)	Peak usage of expansion memory slots	%	float	No	6.20	RZ20 (SAP-system-ID\SAP- instance-name\R3MemMgmtResourc es\EmSlotsPeak)
EmSlotsTotal (EM_SLOTS_TOTAL)	Total number of expansion memory slots	COPY	float	No	6.20	RZ20 (SAP-system-ID\SAP- instance-name\R3MemMgmtResourc es\EmSlotsTotal)
EsAct % (ES_ACT)	Current usage of extended memory	%	float	No	6.20	RZ20 (SAP-system-ID\SAP- instance-name\R3MemMgmtResourc es\EsAct)
EsAttached % (ES_ATTACHED)	Usage of attached extended memory	%	float	No	6.20	RZ20 (SAP-system-ID\SAP- instance-name\R3MemMgmtResourc es\EsAttached)
EsPeak % (ES_PEAK)	Peak usage of extended memory	%	float	No	6.20	RZ20 (SAP-system-ID\SAP- instance-name\R3MemMgmtResourc es\EsPeak)
EsRecentPeak % (ES_RECENT_PEAK)	Recent peak usage of extended memory	%	float	No	6.20	RZ20 (SAP-system-ID\SAP- instance-name\R3MemMgmtResourc es\EsRecentPeak)
EsTotal (ES_TOTAL)	Size of extended memory in megabytes	COPY	float	No	6.20	RZ20 (SAP-system-ID\SAP- instance-name\R3MemMgmtResourc es\EsTotal)
HeapAct % (HEAP_ACT)	Current usage of heap area	%	float	No	6.20	RZ20 (SAP-system-ID\SAP- instance-name\R3MemMgmtResourc es\HeapAct)

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
HeapPeak % (HEAP_PEAK)	Peak usage of heap area	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\R3MemMgmtResources\HeapPeak)
HeapRecentPeak % (HEAP_RECENT_PEAK)	Recent peak usage of heap area	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\R3MemMgmtResources\HeapRecentPeak)
HeapTotal (HEAP_TOTAL)	Total size of heap area in megabytes	COPY	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\R3MemMgmtResources\HeapTotal)
Instance Name (INSTANCE_NAME)	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. This setting can be changed by the <code>rdisp/myname</code> parameter.	COPY	string (21)	No	6.20	--
Interval (INTERVAL)	Interval in seconds at which records were stored (current value in Record Time field - previous value in Record Time field). The initial value is 0.	ADD	ulong	No	6.20	--
PrivWpNo (PRIV_WP_NO)	Number of work processes placed in the PRIV mode	HILO	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\R3MemMgmtResources\PrivWpNo)
R3PagingUsed % (R3_PAGING_USED)	Usage of paging area	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\R3RollPaging\R3PagingUsed)

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
R3RollUsed % (R3_ROLL_USED)	Usage of roll area	%	float	No	6.20	RZ20 (SAP-system-ID\SA P-instance-name\R 3RollPaging\R3R ollUsed)
Record Time (RECORD_TIME)	Record creation time	COPY	time_t	No	6.20	--
Record Type (INPUT_RECORD_T YPE)	Record type (MEM)	COPY	char(8)	No	6.20	--
System ID (SYSTEM_ID)	SAP system ID	COPY	string (9)	No	6.20	--
WpDiaRestart (WP_DIA_RESTART)	Number of dialog work processes whose setting is restart=Yes	AVG	float	No	6.20	RZ20 (SAP-system-ID\SA P-instance-name\R 3MemMgmtResourc es\WpDiaRestart)
WpNonDiaRestart (WP_NON_DIA_RES TART)	Number of dialog work processes whose setting is restart=No	AVG	float	No	6.20	RZ20 (SAP-system-ID\SA P-instance-name\R 3MemMgmtResourc es\WpNonDiaRest art)

Legend:

Smry: Summary

Frmt: Format

Δ: Delta

Sup. ver.: Supported version

Spool Service (PI_SPO)

Function

The Spool Service (PI_SPO) record stores statistical information about the spool service. One record is created for each SAP instance that provides this service.

Default and changeable values

Item	Default value	Changeable
Collection Interval	600	Y
Collection Offset	40	Y
Log	No	Y
LOGIF	(Blank)	Y

ODBC key fields

None

Lifetime

None

Record size

- Fixed part: 855 bytes
- Variable part: 0 bytes

Fields

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
DeviceCacheFixed % (DEVICE_CACHE_FIXED)	Percentage of used area in the fixed device cache	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\SpoolService\DeviceCacheFixed)
DeviceCacheUsed % (DEVICE_CACHE_USED)	Percentage of used area in the entire device cache	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\SpoolService\DeviceCacheUsed)

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
HostspoolListUsed % (HOSTSPOOL_LIST_USED)	Percentage of used area in the host spool request list	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\spoolService\HostspoolListUsed)
Instance Name (INSTANCE_NAME)	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. This setting can be changed by the <code>rdisp/myname</code> parameter.	COPY	string (21)	No	6.20	--
Interval (INTERVAL)	Interval in seconds at which records were stored (current value in Record Time field - previous value in Record Time field). The initial value is 0.	ADD	ulong	No	6.20	--
NumberOfWpSPO (NUMBER_OF_WP_SPO)	Number of spool work processes	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\spoolService\NumberOfWpSPO)
QueueLength % (QUEUE_LENGTH)	Percentage of used area in the dispatcher queue	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\spoolService\QueueLength)
Record Time (RECORD_TIME)	Record creation time	COPY	time_t	No	6.20	--
Record Type (INPUT_RECORD_TYPE)	Record type (SPO)	COPY	char(8)	No	6.20	--
ServiceQueue % (SERVICE_QUEUE)	Percentage of used area in the spool request queue	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\spoolService\ServiceQueue)

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
ServiceQueuePages (SERVICE_QUEUE_PAGES)	Number of pages in the spool request queue	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\spoolService\ServiceQueuePages)
ServiceQueuePriv % (SERVICE_QUEUE_PRIV)	Percentage of used area in the spool request queue that is processed sequentially	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\spoolService\ServiceQueuePriv)
System ID (SYSTEM_ID)	SAP system ID	COPY	string (9)	No	6.20	--
Utilization % (UTILIZATION)	Usage of spool work processes. This is the average value for all spool work processes.	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\spoolService\Utilisation)

Legend:

Smry: Summary

Frmt: Format

Δ: Delta

Sup. ver.: Supported version

System Log Monitor Command (PD_SLMX)

Function

The System Log Monitor Command (PD_SLMX) record stores the result of extracting the system log information of the SAP system. One record is created for each SAP instance.

Note

- This record cannot be displayed in real-time reports.

Default and changeable values

Item	Default value	Changeable
Collection Interval	600	Y
Collection Offset	0	Y
Log	No	Y
LOGIF	(Blank)	Y

ODBC key fields

None

Lifetime

None

Record size

- Fixed part: 5,073 bytes
- Variable part: 0 bytes

Fields

PFM - View name (PFM - Manager name)	Description	Format	Delta	Supported version	Data source
Elapsed Time (ELAPSED_TIME)	Command execution time in milliseconds	ulong	No	6.20	--
Exit Code (EXIT_CODE)	Command termination code	ulong	No	6.20	--

PFM - View name (PFM - Manager name)	Description	Format	Delta	Supported version	Data source
Instance Name (INSTANCE_NAME)	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. This setting can be changed by the <code>rdisp/myname</code> parameter.	string(21)	No	--	--
Interval (INTERVAL)	Interval in seconds at which records were stored (current value in Record Time field - previous value in Record Time field). The initial value is 0.	ulong	No	--	--
Path (PATH)	Command path (excluding the argument part)	string(256)	No	6.20	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record type (SLMX)	char(8)	No	--	--
Stderr Buffer (STDERR_BUFFER)	Standard error output buffer for the command	string(2049)	No	6.20	--
Stdout Buffer (STDOUT_BUFFER)	Standard output buffer for the command	string(2049)	No	6.20	--
System ID (SYSTEM_ID)	SAP system ID	string(9)	No	--	--

Update1 Service (PI_UPD1)

Function

The Update1 Service (PI_UPD1) record stores statistical information about the V1 update service. One record is created for each SAP instance that provides this service.

Default and changeable values

Item	Default value	Changeable
Collection Interval	600	Y
Collection Offset	40	Y
Log	No	Y
LOGIF	(Blank)	Y

ODBC key fields

None

Lifetime

None

Record size

- Fixed part: 775 bytes
- Variable part: 0 bytes

Fields

PFM -View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
Instance Name (INSTANCE_NAME)	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. This setting can be changed by the <code>rdisp/myname</code> parameter.	COPY	string (21)	No	6.20	--

PFM -View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
Interval (INTERVAL)	Interval in seconds at which records were stored (current value in Record Time field - previous value in Record Time field). The initial value is 0.	ADD	ulong	No	6.20	--
NumberOfWpUD1 (NUMBER_OF_WP_UD1)	Number of update work processes	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\PerformanceU1\NumberOfWpUD1)
QueueTime (QUEUE_TIME)	Average wait time (in milliseconds) in the dispatcher queue	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\PerformanceU1\QueueTime)
Record Time (RECORD_TIME)	Record creation time	COPY	time_t	No	6.20	--
Record Type (INPUT_RECORD_TYPE)	Record type (UPD1)	COPY	char (8)	No	6.20	--
ResponseTime (RESPONSE_TIME)	Average response time (in milliseconds) of update services	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\PerformanceU1\ResponseTime)
System ID (SYSTEM_ID)	SAP system ID	COPY	string (9)	No	6.20	--
Utilization % (UTILIZATION)	Usage of update work processes. This is the average value for all update work processes.	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\PerformanceU1\Utilisation)

Legend:

Smry: Summary

Frmt: Format

Δ: Delta

Update1 Service (PI_UPD1)

Sup. ver.: Supported version

Update2 Service (PI_UPD2)

Function

The Update2 Service (PI_UPD2) record stores statistical information about the V2 update service. One record is created for each SAP instance that provides this service.

Default and changeable values

Item	Default value	Changeable
Collection Interval	600	Y
Collection Offset	40	Y
Log	No	Y
LOGIF	(Blank)	Y

ODBC key fields

None

Lifetime

None

Record size

- Fixed part: 775 bytes
- Variable part: 0 bytes

Fields

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
Instance Name (INSTANCE_NAME)	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. This setting can be changed by the <code>rdisp/myname</code> parameter.	COPY	string (21)	No	6.20	--

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
Interval (INTERVAL)	Interval in seconds at which records were stored (current value in Record Time field - previous value in Record Time field). The initial value is 0.	ADD	ulong	No	6.20	--
NumberOfWpUD2 (NUMBER_OF_WP_UD2)	Number of update work processes	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\PerformanceU2\NumberOfWpUD2)
QueueTime (QUEUE_TIME)	Average wait time (in milliseconds) in the dispatcher queue	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\PerformanceU2\QueueTime)
Record Time (RECORD_TIME)	Record creation time	COPY	time_t	No	6.20	--
Record Type (INPUT_RECORD_TYPE)	Record type (UPD2)	COPY	char(8)	No	6.20	--
ResponseTime (RESPONSE_TIME)	Average response time (in milliseconds) of update services	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\PerformanceU2\ResponseTime)
System ID (SYSTEM_ID)	SAP system ID	COPY	string(9)	No	6.20	--
Utilization % (UTILIZATION)	Usage of update work processes. This is the average value for all update work processes.	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\PerformanceU2\Utilisation)

Legend:

Smry: Summary

Frmt: Format

Δ : Delta

Sup. ver.: Supported version

User defined Monitor (Perf.) (PI_UMP)

Function

In SAP system monitor information, the User defined Monitor (Perf.) (PI_UMP) record stores performance data collected according to user definitions. One record is created for each MTE whose MTE type is the performance attribute in the specified SAP system monitor information.

Default and changeable values

Item	Default value	Changeable
Collection Interval	600	Y
Collection Offset	45	Y
Log	No	Y
LOGIF	(Blank)	Y

ODBC key fields

PI_UMP_MTE_NAME

Lifetime

None

Record size

- Fixed part: 833 bytes
- Variable part: 293 bytes

Fields

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
Instance Name (INSTANCE_NAME)	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. This setting can be changed by the <code>rdisp/myname</code> parameter.	COPY	string (21)	No	6.20	--

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
Interval (INTERVAL)	Interval in seconds at which records were stored (current value in Record Time field - previous value in Record Time field). The initial value is 0.	ADD	ulong	No	6.20	--
Measured Date (MEASURED_DATE)	Measured date for the performance value (Measured Value)	COPY	string (9)	No	6.20	RZ20
Measured Time (MEASURED_TIME)	Measured time for the performance value (Measured Value)	COPY	string (7)	No	6.20	RZ20
Measured Value (MEASURED_VALUE)	Performance value (already obtained in the SAP system)	HILO	float	No	6.20	RZ20
Monitor Name (MONITOR_NAME)	Monitor name	COPY	string (61)	No	6.20	RZ20
Monitor Set (MONITOR_SET)	Monitor set name	COPY	string (61)	No	6.20	RZ20
MTE Context (MTE_CONTEXT)	Name of Context part of MTE	COPY	string (41)	No	6.20	RZ20
MTE Name (MTE_NAME)	MTE name (MTE's System ID part, Context part, Objectname part, and Shortname part connected by a backslash (\); for example, <i>SAP-system-ID\SAP-instance-name\Background\Utilisation</i>)	COPY	string (132)	No	6.20	RZ20
MTE Objectname (MTE_OBJECTNAME)	Name of Objectname part of MTE	COPY	string (41)	No	6.20	RZ20
MTE Shortname (MTE_SHORTNAME)	Name of Shortname part of MTE	COPY	string (41)	No	6.20	RZ20
MTE System ID (MTE_SYSID)	Name of System ID part of MTE	COPY	string (9)	No	6.20	RZ20

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
Record Time (RECORD_TIME)	Record creation time	COPY	time_t	No	6.20	--
Record Type (INPUT_RECORD_T YPE)	Record type (UMP)	COPY	char(8)	No	6.20	--
System ID (SYSTEM_ID)	SAP system ID	COPY	string (9)	No	6.20	--
Unit (UNIT)	Unit for performance value	COPY	string (5)	No	6.20	RZ20
Value (VALUE)	Performance value	HILO	float	No	6.20	RZ20

Legend:

Smry: Summary

Frmt: Format

Δ : Delta

Sup. ver.: Supported version

Work Process Summary (PD)

Function

The Work Process Summary (PD) record stores an overview of work processes (equivalent to the information that can be verified by transaction code SM50). One record is created for each SAP instance.

Default and changeable values

Item	Default value	Changeable
Collection Interval	60	Y
Collection Offset	35	Y
Log	Yes	Y
LOGIF	(Blank)	Y

ODBC key fields

PD_NO

Lifetime

From specification to a change in the number of work processes

Record size

- Fixed part: 681 bytes
- Variable part: 273 bytes

Fields

PFM - View name (PFM - Manager name)	Description	Format	Delta	Supported version	Data source
Action (ACTION)	Activity name of the work process	string(26)	No	6.20	SM50
Bname (BNAME)	User name of the request the work process is currently processing	string(13)	No	6.20	SM50
CPU (CPU)	Reserved field; not available for use	string(9)	No	6.20	SM50

PFM - View name (PFM - Manager name)	Description	Format	Delta	Supported version	Data source
Dumps (DUMPS)	Number of times the work process terminated abnormally	string(3)	No	6.20	SM50
ElTime (ELTIME)	Duration of the work process (in seconds)	string(7)	No	6.20	SM50
Instance Name (INSTANCE_NAME)	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. This setting can be changed by the <code>rdisp/myname</code> parameter.	string(21)	No	6.20	--
Interval (INTERVAL)	Interval in seconds at which records were stored (current value in Record Time field - previous value in Record Time field). The initial value is 0.	ulong	No	6.20	--
ManDt (MANDT)	Client name of the request the work process is currently processing	string(4)	No	6.20	SM50
No (NO)	Work process number	string(3)	No	6.20	SM50
Pid (PID)	Process ID of the work process in the host system	string(9)	No	6.20	SM50
Record Time (RECORD_TIME)	Record creation time	time_t	No	6.20	--
Record Type (INPUT_RECORD_TYPE)	Record type (PD)	char(8)	No	6.20	--
Report (REPORT)	Name of the report the work process is executing	string(41)	No	6.20	SM50
Restart (RESTART)	Y or N indicating whether the work process will be re-executed automatically in the event of abnormal termination.	string(5)	No	6.20	SM50
Sem (SEM)	Semaphore number at which the work process is in wait status	string(3)	No	6.20	SM50

PFM - View name (PFM - Manager name)	Description	Format	Delta	Supported version	Data source
Server (SERVER)	Server name	string(21)	No	6.20	SM50
Status (STATUS)	Current status of the work process (example: waiting or Running)	string(8)	No	6.20	SM50
System ID (SYSTEM_ID)	SAP system ID	string(9)	No	6.20	--
Table (TABLE)	Name of the last database table that was accessed by the work process	string(31)	No	6.20	SM50
Typ (TYP)	Type of work process (such as DIA, UPD, UP2, ENQ, BGD, or SPO)	string(4)	No	6.20	SM50
WaitInf (WAITINF)	Additional information about the reason for waiting	string(41)	No	6.20	SM50
WaitTim (WAITTIM)	Wait start time	string(9)	No	6.20	SM50
Waiting (WAITING)	Reason why the work process is in wait status	string(6)	No	6.20	SM50

WorkLoad Summary Interval (PI)

Function

The WorkLoad Summary Interval (PI) record stores information needed to obtain and analyze the dialog task's workload time statistics. One record is created for each SAP instance.

Default and changeable values

Item	Default value	Changeable
Collection Interval	60	Y
Collection Offset	0	Y
Log	Yes	Y
LOGIF	(Blank)	Y

ODBC key fields

None

Lifetime

None

Record size

- Fixed part: 1,075 bytes
- Variable part: 0 bytes

Fields

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
CUA HitRatio % (CUA_HIT_RATIO)	Percentage of the database queries that were not passed to the database because they were found in the CUA buffer. For details about the CUA buffer, see the SAP Buffer Summary (PI_BUFF) record.	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\CUA\HitRatio)

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
DBRequestTime (DB_REQUEST_TIME)	Average time for processing logical database requests in milliseconds	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Dialog\DBRequestTime)
DialogSteps (DIALOG_STEPS)	Average number of dialog steps per minute	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Dialog\DialogSteps)
EsAct % (ES_ACT)	Current usage of extended memory	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\R3MemMgmtResources\EsAct)
FieldDescriptionHitRatio % (FIELD_DESCRIPTION_HIT_RATIO)	Percentage of the database queries that were not passed to the database because they were found in the field description buffer. For details about the field description buffer, see the SAP Buffer Summary (PI_BUFF) record.	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\FieldDescription\HitRatio)
FrontendNetTime (FRONTEND_NET_TIME)	Network time (in milliseconds) used for the first data transfer from front end to application server and for the last data transfer from application server to front end. This does not include the value of the GuiCallBackTime field.	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Dialog\FrontEndNetTime)
FrontendResponseTime (FRONTEND_RESPONSE_TIME)	Average time (in milliseconds) the user waited at the front end for a request to be processed. This is the average of the totals of response time, network transfer time, and front-end processing time.	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Dialog\FrontendResponseTime)

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
GenericKey HitRatio % (GENERIC_KEY_HI T_RATIO)	Percentage of the database queries that were not passed to the database because they were found in the generic key buffer. For details about the generic key buffer, see the SAP Buffer Summary (PI_BUFF) record.	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\GenericKey\HitRatio)
HeapAct % (HEAP_ACT)	Current usage of the heap area	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\R3MemMgmtResources\HeapAct)
InitialRecords HitRatio % (INITIAL_RECORDS_HIT_RATIO)	Percentage of the database queries that were not passed to the database because they were found in the initial records buffer. For details about the initial records buffer, see the SAP Buffer Summary (PI_BUFF) record.	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\InitialRecords\HitRatio)
Instance Name (INSTANCE_NAME)	SAP instance name. This name usually consists of a host name, SAP system ID, and system number. This setting can be changed by the <code>rdisp/myname</code> parameter.	COPY	string (21)	No	6.20	--
Interval (INTERVAL)	Interval in seconds at which records were stored (current value in Record Time field - previous value in Record Time field). The initial value is 0.	ADD	ulong	No	6.20	--
Load+GenTime (LOAD_GENTIME)	Average loading and creation time (in milliseconds) for source text, graphical user interface, and window information from the database.	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Dialog\Load+GenTime)

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
PrivWpNo (PRIV_WP_NO)	Number of work processes placed in the PRIV mode	HI	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\R3MemMgmtResources\PrivWpNo)
Program HitRatio % (PROGRAM_HIT_RATIO)	Percentage of the database queries that were not passed to the database because they were found in the program buffer. For details about the program buffer, see the SAP Buffer Summary (PI_BUFF) record.	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Program\HitRatio)
QueueTime (QUEUE_TIME)	Average wait time (in milliseconds) in the dispatcher queue. This is the average time user requests waited in the dispatcher queue.	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Dialog\QueueTime)
R3PagingUsed % (R3_PAGING_USED)	Usage of paging area	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\R3RollPaging\R3PagingUsed)
R3RollUsed % (R3_ROLL_USED)	Usage of roll area	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\R3RollPaging\R3RollUsed)
Record Time (RECORD_TIME)	Record creation time	COPY	time_t	No	6.20	--
Record Type (INPUT_RECORD_TYPE)	Record type (PI)	COPY	char(8)	No	6.20	--

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
ResponseTime (RESPONSE_TIME)	Average dialog step processing time in milliseconds. This is the total time required for processing a dialog step; it includes the database processing time but not the network transfer time or front-end processing time.	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Dialog\ResponseTime)
ResponseTime:StandardTran. (RESPONSE_TIME_STANDARD_TRAN)	Response time of standard transactions in milliseconds	AVG	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Dialog\ResponseTime(StandardTran.))
Screen HitRatio % (SCREEN_HIT_RATIO)	Percentage of the database queries that were not passed to the database because they were found in the screen buffer. For details about the screen buffer, see the SAP Buffer Summary (PI_BUFF) record.	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\Screen\HitRatio)
ShortNameTAB HitRatio % (SHORT_NAME_TAB_HIT_RATIO)	Percentage of the database queries that were not passed to the database because they were found in the short nametab buffer. For details about the short nametab buffer, see the SAP Buffer Summary (PI_BUFF) record.	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\ShortNameTAB\HitRatio)
SingleRecord HitRatio % (SINGLE_RECORD_HIT_RATIO)	Percentage of the database queries that were not passed to the database because they were found in the single record buffer. For details about the single record buffer, see the SAP Buffer Summary (PI_BUFF) record.	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\SingleRecord\HitRatio)
System ID (SYSTEM_ID)	SAP system ID	COPY	string (9)	No	6.20	--

PFM - View name (PFM - Manager name)	Description	Smry	Frmt	Δ	Sup. ver.	Data source
TableDefinitionHitRatio % (TABLE_DEFINITON_HIT_RATIO)	Percentage of the database queries that were not passed to the database because they were found in the table definition buffer. For details about the table definition buffer, see the SAP Buffer Summary (PI_BUFF) record.	%	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\T ableDefinition\ HitRatio)
UsersLoggedIn (USERS_LOGGED_IN)	Number of users logged on	HILO	float	No	6.20	RZ20 (SAP-system-ID\SAP-instance-name\ Dialog\UsersLogg edIn)

Legend:

Smry: Summary

Frmt: Format

Δ: Delta

Sup. ver.: Supported version

Chapter

10. Commands

This chapter describes the commands provided by PFM - Agent for Enterprise Applications.

The format of the command explanations and the syntax rules are the same for both Windows and UNIX.

In Windows, you execute commands from the command prompt.

In UNIX, you execute commands from the control terminal.

- Format of command explanations

- List of commands

Format of command explanations

This section describes the format of the command explanations, the specification method for commands, and the symbols used to explain the command syntax.

Command specification method

The command specification format is as follows:

$$\begin{array}{l}
 \text{jpcxxx} \quad [-\text{option-A} \text{ [value-a [, value-b [, value-c...]]]}] \dots(1) \\
 \quad \quad \quad [-\text{option-B} \text{ [value-a [, value-b [, value-c...]]]}] \dots(1) \\
 \quad \quad \quad [\text{any-name-X}[\text{any-name-Y}[\text{any-name-Z} \dots]]]
 \end{array}
 \left. \vphantom{\begin{array}{l} \dots(1) \\ \dots(1) \end{array}} \right\} \dots(2)$$

(1) indicates an *option*, and (2) indicates the *arguments*.

Symbols used to explain the command syntax

The following table lists the symbols used to explain the command syntax:

Table 10-1: Symbols used to explain the command syntax

Symbol	Description and example
 (vertical bar)	Only one of the options separated by a vertical bar can be used at one time. Example: A B C indicates A, or B, or C.
{ } (curly brackets)	One of the items enclosed in braces and separated by a vertical bar must be specified. Example: {A B C} indicates that one of the items from A, or B, or C must be specified.
[] (square brackets)	The item or items enclosed in brackets are optional. Example: [A] indicates the specification of A or nothing. [B C] indicates the specification of B or C, or nothing.
... (ellipsis)	The item or items preceding the ellipsis (...) can be repeated. To specify multiple items, use a one-byte space to delimit them. Example: A B ... indicates that B can be specified as many times as necessary after A.
<u> </u> (underline)	The underlined characters are the system default when you omit all the items enclosed in brackets. Example: <u>A</u> B indicates that the system uses A if you do not specify either A or B.

Wildcard characters

You can specify wildcard characters in a command so that the command's processing applies to multiple services or host names. The supported wildcard characters are as follows:

- *: Indicates a string of any number of characters (including a single character)
- ?: Indicates any single character

In UNIX, a wildcard character must be enclosed in double quotation marks (") so that it is not analyzed by the shell.

Notes common to all commands

Before you can execute a command, you must set the command installation directory to be the current directory. For details about the command installation directory, see the descriptions of the commands.

List of commands

The table below lists the PFM - Agent for Enterprise Applications commands.

The commands are explained in detail in the remainder of this chapter; the commands are listed in the table and explained in the chapter in alphabetical order.

Table 10-2: List of PFM - Agent for Enterprise Applications commands

Command name	Function	Executing host	Required execution permission	
			Windows	UNIX
jr3alget	Extracts the CCMS alert information of the SAP system.	PFM - Agent for Enterprise Applications	None	None
jr3slget	Extracts the system log information of the SAP system.	PFM - Agent for Enterprise Applications	None	None

jr3alget

Format

```
jr3alget    [RFC-connection-information]  
            [target-information]  
            [-lasttime timestamp-file-name]  
            [output-destination]  
            [-cnf environment-parameters-file-name]  
            [-help]  
            [-v]
```

Function

The jr3alget command extracts the CCMS alert information of the SAP system.

Host that can execute the command

PFM - Agent for Enterprise Applications

Execution permissions

In Windows:

None

In UNIX:

None

Command installation directory

In Windows

installation-folder\agtm\evtrap\

In UNIX

/opt/jplpc/agtm/evtrap/

Arguments

RFC-connection-information

Specifies the information needed to establish RFC connection with the SAP system for command execution.

You can omit specification of this argument if you have specified the RFC connection information in the environment parameters file (CONNECT section). If the RFC connection information is specified in both the environment parameters file and the command, the command specification takes effect. For details about the environment parameters file, see *6.4.3 Environment parameters file for*

extracting CCMS alert information by command execution.

The following describes the RFC information argument:

-h application-server-host-name

Specifies as 1-100 single-byte alphanumeric characters the name of the connection-target application server host. You must specify one of the following:

- Host name specified in the `hosts` file
- IP address
- SAP router address

You can verify the application server host name by transaction code `SM51`.

When you specify this option, you must also specify the `-s` option.

-s system-number

Specifies the system number for identification by the application server host specified with the `-h` option. You must specify a value in the range 0-99.

When you specify this option, you must also specify the `-h` option.

-c client-name

Specifies as 1-3 bytes the client name of the user that is to be used for connection. You must specify a value in the range 0-999.

When you specify this option, you must also specify the `-u` option together with the `-p` or `-p2` option.

-u user-name

Specifies as 1-12 single-byte alphanumeric characters the user name that is to be used for connection.

When you specify this option, you must also specify the `-c` option together with the `-p` or `-p2` option.

For details about the SAP users that can be specified, see *SAP users used for establishing connection*.

-p password

Specifies the password for the user specified in the `-u` option. The permitted value is 1-8 single-byte characters.

This option and the `-p2` option are mutually exclusive.

When you specify this option, you must also specify the `-c` and `-u` options.

For details about the characters permitted for the password, see *SAP users*

used for establishing connection.

-p2 *extended-password*

If you are connecting to an SAP system that uses SAP NetWeaver 7.0 or later as its base system and that supports extended passwords, this option specifies the extended password for the user specified in the `-u` option. The permitted value is 1-40 single-byte characters. This value is case sensitive.

This option and the `-p` option are mutually exclusive.

When you specify this option, you must also specify the `-c` and `-u` options.

For details about the characters permitted for the extended password, see *SAP users used for establishing connection*.

-l *language*

Specifies the language for the user specified with the `-u` option. You must specify a double-byte ISO ID or a single-byte language key used in the SAP system. For example, to use English, specify `EN`.

If you omit this option, the user's language used in the connection-target system is assumed.

When you specify this option, you must also specify the `-c` option, the `-u` option, and the `-p` or `-p2` option.

-codepage *code-page*

Specifies the code page to be used when character encoding is converted in the Unicode version of the SAP system.

The code page must be specified together with a language in the `-l` option.

Specify the combination of language and code page as shown below. If any other combination of language and code page is specified, an encoding error may occur in the information acquired from the SAP system.

Table 10-3: Combination of language and code page specifications

Connection-target SAP system	Connection language	Language (-l)	Code page (-codepage)
Unicode version	English	EN	No need to specify. If you specify a code page, specify 1100.
Non-Unicode version	English	EN	No need to specify. If you specify a code page, specify 1100.

To set the code page to be used to convert character codes at the connection-target SAP system (Unicode version), you can also use the `SAP_CODEPAGE` environment variable provided by the SAP system. If the

code page setting is specified in both the `SAP_CODEPAGE` environment variable and in this option, this option takes effect.

If this option is omitted, the connection-target system's default code page is assumed.

When you specify this option, you must also specify the `-c` option, the `-u` option, and the `-p` or `-p2` option.

target-information

Specifies information that identifies the CCMS alert information that is to be extracted.

You can omit specification of this argument if you have specified the target information in the environment parameters file (`TARGET` section). If target information is specified in both the environment parameters file and the command, the command specification takes effect. For details about the environment parameters file, see *6.4.3 Environment parameters file for extracting CCMS alert information by command execution*.

The following describes the target information argument:

`-ms` *monitor-set-name*

Specifies as 1-60 single-byte alphanumeric characters the monitor set name. The monitor set name is displayed as `CCMS monitor set` on the Alert Monitor (transaction code `RZ20`) of the SAP system.

When you specify this option, you must also specify the `-mn` option.

`-mn` *monitor-name*

Specifies as 1-60 single-byte alphanumeric characters the monitor name defined in the monitor set. The monitor name is displayed in the tree of the CCMS monitor set on the Alert Monitor (transaction code `RZ20`) of the SAP system.

When you specify this option, you must also specify the `-ms` option.

`-lasttime` *timestamp-file-name*

If only the CCMS alert information that was output after the previous command execution is to be extracted, this option specifies the name of the timestamp file used for managing the previous extraction time.

The permitted value is 1-255 characters.

If you specify a relative path, make sure that it is relative to the work directory for the command. If you have not specified a work directory for the command in the `WORKDIR` label of the `COMMAND` section in the environment parameters file, specify the path relative to the current directory.

If you omit this option, the system assumes the period from 00:00:00 to 23:59:59 on the command execution date.

If the specified timestamp file does not exist the first time the command is executed with this argument specified, a new timestamp file is created. CCMS alert information is not output during such a first-time execution.

output-destination

Specifies the output destination of the CCMS alert information. When you omit this argument, CCMS alert information separated by linefeed codes is output to the standard output.

The following describes the output destination argument:

-x output-file-name

Specifies as a character string of 1-255 bytes the name of the file to which the CCMS alert information is to be output.

If you specify a relative path, make sure that it is relative to the work directory for the command. If you have not specified a work directory for the command in the `WORKDIR` label of the `COMMAND` section in the environment parameters file, specify the path relative to the current directory.

This is a wraparound file, which means that data is overwritten from the beginning of the file when the file capacity reaches a specified value. There is a header line of management information at the beginning of the file.

The default file size is 1,024 kilobytes. To change the file size, use the `SIZE` label in the `EXTRACTFILE` section of the environment parameters file.

A management file named *output-file-name*.`ofs` is created in the same directory as the specified output file (e.g., if the output file name is `ALERT`, the `ALERT.ofs` file is created as a management file separately from the `ALERT` file). If you delete the output file, you must also delete this management file.

The `-x` and `-x2` options are mutually exclusive.

-x2

Specifies that the CCMS alert information is to be output to the file that is specified with the `X2PATH` parameter in the `EXTRACTFILE` section of the environment parameters file.

The `-x` and `-x2` options are mutually exclusive.

-cnf environment-parameters-file-name

Specifies as a character string of 1-255 bytes the name of the environment parameters file that is to be referenced by the command.

If you specify a relative path, make sure that it is relative to the current directory for the command.

If you omit this argument, the system assumes `jr3alget.ini`, which is the default environment parameters file in the current directory. If there is no default environment parameters file, PFM - Agent for Enterprise Applications assumes the default settings for an environment parameters file.

For details about the environment parameters file and the default settings, see *6.4.3 Environment parameters file for extracting CCMS alert information by command execution*.

-help

Specifies that the usage of the `jr3alget` command is to be displayed at the standard output.

-v

Specifies that a message indicating the processing status of the `jr3alget` command is to be output to the standard output. If you omit this option, no message indicating the processing status of the command will be output.

SAP users used for establishing connection

To collect CCMS alert information, the `jr3alget` command executes the external management interfaces defined in the SAP system using RFC (communication protocol of SAP AG). Therefore, you must provide in advance the users who are to be used by the `jr3alget` command for establishing connection in the SAP system.

This subsection describes the user types, passwords, and authorizations for the SAP users who are created in the SAP system.

User types

The following types of SAP users can be used by PFM - Agent for Enterprise Applications:

- Dialog
- System
- Communication
- Service

Characters permitted for passwords

A password for an SAP user must consist of single-byte numeric characters (from 0 to 9), single-byte alphabetic characters (from a to z, A to Z), and the following single-byte symbols:

!, @, \$, %, &, /, (,), =, ?, ' , ` , * , +, ~, #, -, _ , . , : , { , [,] , } , < , > , |

Required authorizations

You must set the following authorizations (authorization objects) for the SAP users:

- Authorizations required for a user to establish RFC connection with function modules (S_RFC)
- Authorizations required in order to use external management interfaces (S_XMI_PROD)

The authorization values are shown in the tables below or you can use the built-in configurations (S_RFC_ALL and S_XMI_ADMIN) that specifies XAL for all items.

Table 10-4: Authorizations required for a user to establish RFC connection with function modules (S_RFC)

Authorization	Description	Value
RFC_TYPE	Type of RFC object to be protected	FUGR (function group)
RFC_NAME	RFC name to be protected	*
ACTVT	Activity	16 (execution)

Table 10-5: Authorizations required in order to use external management interfaces (S_XMI_PROD)

Authorization	Description	Value
EXTCOMPANY	Company name of the external management tool	HITACHI
EXTPRODUCT	Program name of the external management tool	JP1
INTERFACE	Interface ID	XAL

Note

Because the CCMS alert information is treated as an SAP system resource and can be referenced from any application server, the connection target can be any application server. Make sure that only one command is executed per SAP system.

Output format and contents

The following is the default output format for CCMS alert information, where < > enclose a field ID:

```
<ALERTDATE><ALERTTIME><MTSYSID><MTMCNAME><OBJECTNAME><FIELDNAME><VALUE><SEVERITY><MSG>
```

If the value of a CCMS alert information item is shorter than the predefined field length, the remaining area is padded with single-byte spaces. The following table lists and explains the values that are output:

Table 10-6: CCMS alert information that is output

Field ID	Description	Source	Length (bytes)
<ALSYSID>	Name of the SAP system	Alert ID (AID) (BAPIAID)	8
<MSEGNAME>	Name of the monitoring segment		40
<ALUNIQNUM>	Unique ID used by AID		10
<ALERTDATE>	Date the alert occurred (YYYYMMDD)		8
<ALERTTIME>	Time the alert occurred (HHMMSS)		6
<MTSYSID>	Name of the SAP system	ID of the MTE associated with the alert (TID) (BAPITID)	8
<MTCLASS>	MTE type		3
<MTNUMRANGE>	Range of numbers (such as resident or temporary)		3
<MTMCNAME>	Name of the monitoring context		40
<MTUID>	Unit ID used by TID		10
<VALUE>	Warning value (corresponding to the color of the CCMS alert entry that can be viewed with transaction code RZ20): <ul style="list-style-type: none"> • 0: Gray (invalid information) • 1: Green (OK) • 2: Yellow (warning) • 3: Red (problem or error) 	Alert severity level (BAPIALDATA)	11

Field ID	Description	Source	Length (bytes)
<SEVERITY>	Severity level (0-255; severity increases as the value increases)		
<FIELDNAME>	Abbreviation of MTE	General property (BAPIALERT)	40
<STATUS>	Alert status		11
<OBJECTNAME>	Name of the monitoring object		40
<MANDT>	Client		3
<USERID>	SAP user		12
<REPORTEDBY>	Reporter (logical name)		16
<STATCHGDAT>	Last date the status changed		8
<STATCHGBY>	Last user who changed the status (logical name)		16
<STATCHGTIM>	Last time the status changed		6
<MSCGLID>	Message ID when a message with the log attribute activated an alert		50
<MSGCLASS>	Message recorder	Message	16
<MSGID>	Message ID		30
<MSGARG1>	Character string for message insert word 1		128
<ARGTYPE1>	Type of message insert word 1		1
<MSGARG2>	Character string for message insert word 2		128
<ARGTYPE2>	Type of message insert word 2		1
<MSGARG3>	Character string for message insert word 3		128
<ARGTYPE3>	Type of message insert word 3		1

Field ID	Description	Source	Length (bytes)
<MSGARG4>	Character string for message insert word 4		128
<ARGTYPE4>	Type of message insert word 4		1
<MSGTEXT>	Message text		128
<MSG>	Translated message		255

Return value

0	Normal termination
1 or greater	Abnormal termination

Example

This example outputs CCMS alert information using `SAP CCMS Monitor Templates` as the monitor set name and `Entire System` as the monitor name. The RFC connection information has already been defined in the environment parameters file.

```
jr3alget -ms "SAP CCMS Monitor Templates" -mn "Entire System"
```

The output example from this command is as follows:

```
20030321171911SD5 o246bci_SD5_00 Background AbortedJobs Job
DBA:CHECKOPT_____@021500/6007 (ID number 02153101)
terminated20030321171911SD5 o246bci_SD5_00 GenericKey SpaceUsed 95 % > 90 %
15 min. avg. value over threshold value
```

jr3slget

Format

```
jr3slget    [RFC-connection-information]  
            [target-information]  
            [-lasttime timestamp-file-name]  
            [output-destination]  
            [-cnf environment-parameters-file-name]  
            [-help]  
            [-v]
```

Function

The jr3slget command extracts the system log information of the SAP system.

Host that can execute the command

PFM - Agent for Enterprise Applications

Execution permissions

In Windows:

None

In UNIX:

None

Command installation directory

In Windows:

installation-folder\agtm\evtrap\

In UNIX:

/opt/jplpc/agtm/evtrap/

Arguments

RFC-connection-information

Specifies the information needed to establish RFC connection with the SAP system for command execution.

You can omit specification of this argument if you have specified the RFC connection information in the environment parameters file (CONNECT section). If the RFC connection information is specified in both the environment parameters file and the command, the command specification takes effect. For details about the environment parameters file, see 5.4.3 *Environment parameters file for*

extracting system log information by command execution.

The following describes the RFC information argument:

-h *application-server-host-name*

Specifies as 1-100 single-byte alphanumeric characters the name of the connection-target application server host. You must specify one of the following:

- Host name specified in the `hosts` file
- IP address
- SAP router address

You can verify the application server host name by transaction code `SM51`. When you specify this option, you must also specify the `-s` option.

-s *system-number*

Specifies the system number for identification by the application server host specified with the `-h` option. You must specify a value in the range 0-99.

When you specify this option, you must also specify the `-h` option.

-c *client-name*

Specifies as 1-3 bytes the client name of the user that is to be used for connection. You must specify a value in the range 0-999.

When you specify this option, you must also specify the `-u` option together with the `-p` or `-p2` option.

-u *user-name*

Specifies as 1-12 single-byte alphanumeric characters the user name that is to be used for connection.

When you specify this option, you must also specify the `-c` option together with the `-p` or `-p2` option.

For details about the SAP users that can be specified, see *SAP users used for establishing connection*.

-p *password*

Specifies the password for the user specified in the `-u` option. The permitted value is 1-8 single-byte characters.

This option and the `-p2` option are mutually exclusive.

When you specify this option, you must also specify the `-c` and `-u` options.

For details about the characters permitted for the password, see *SAP users*

used for establishing connection.

-p2 *extended-password*

If you are connecting to an SAP system that uses SAP NetWeaver 7.0 or later as its base system and that supports extended passwords, this option specifies the extended password for the user specified in the `-u` option. The permitted value is 1-40 single-byte characters.

This option and the `-p` option are mutually exclusive.

When you specify this option, you must also specify the `-c` and `-u` options.

For details about the characters permitted for the extended password, see *SAP users used for establishing connection*.

-l *language*

Specifies the language for the user specified with the `-u` option. You must specify a double-byte ISO ID or a single-byte language key used in the SAP system. For example, to use English, specify `EN`.

If you omit this option, the user's language used in the connection-target system is assumed.

When you specify this option, you must also specify the `-c` option, the `-u` option, and the `-p` or `-p2` option.

-codepage *code-page*

Specifies the code page to be used when character encoding is converted in the Unicode version of the SAP system.

The code page must be specified together with a language in the `-l` option.

Specify the combination of language and code page as shown below. If any other combination of language and code page is specified, an encoding error may occur in the information acquired from the SAP system.

Table 10-7: Combination of language and code page specifications

Connection-target SAP system	Connection language	Language (-l)	Code page (-codepage)
Unicode version	English	EN	No need to specify. If you specify a code page, specify 1100.
Non-Unicode version	English	EN	No need to specify. If you specify a code page, specify 1100.

To set the code page to be used to convert character codes at the connection-target SAP system (Unicode version), you can also use the `SAP_CODEPAGE` environment variable provided by the SAP system. If the

code page setting is specified in both the `SAP_CODEPAGE` environment variable and in this option, this option takes effect.

If this option is omitted, the connection-target system's default code page is assumed. When you specify this option, you must also specify the `-c` option, the `-u` option, and the `-p` or `-p2` option.

target-information

Specifies information that identifies the system log information that is to be extracted.

You can omit specification of this argument if you have specified the target information in the environment parameters file (`TARGET` section). If target information is specified in both the environment parameters file and the command, the command specification takes effect. For details about the environment parameters file, see *5.4.3 Environment parameters file for extracting system log information by command execution*.

The following describes the target information argument:

`-server` *SAP-instance-name*

Specifies as 1-20 single-byte alphanumeric characters the name of the SAP instance that is collecting system log information. You can specify only one SAP instance name. To check the SAP instance name, use transaction code `SM50` or `SM66`.

`-lasttime` *timestamp-file-name*

If only the system log information that was output after the previous command execution is to be extracted, this option specifies the name of the timestamp file used for managing the previous extraction time. The permitted value is 1-255 characters.

If you specify a relative path, make sure that it is relative to the work directory for the command. If you have not specified a work directory for the command in the `WORKDIR` label of the `COMMAND` section in the environment parameters file, specify the path relative to the current directory.

If you omit this option, the system assumes the period from 00:00:00 to 23:59:59 on the command execution date.

If the specified timestamp file does not exist the first time the command is executed with this argument specified, a new timestamp file is created. System log information is not output during such a first-time execution.

output-destination

Specifies the output destination of the system log information. When you omit this argument, system log information separated by linefeed codes is output to the

standard output.

The following describes the output destination argument:

-x *output-file-name*

Specifies as a character string of 1-255 bytes the name of the file to which the system log information is to be output.

If you specify a relative path, make sure that it is relative to the work directory for the command. If you have not specified a work directory for the command in the `WORKDIR` label of the `COMMAND` section in the environment parameters file, specify the path relative to the current directory.

This is a wraparound file, which means that data is overwritten from the beginning of the file when the file capacity reaches a specified value. There is a header line of management information at the beginning of the file.

The default file size is 1024 kilobytes. To change the file size, use the `SIZE` label in the `EXTRACTFILE` section of the environment parameters file.

A management file named *output-file-name*.`ofs` is created in the same directory as the specified output file (e.g., if the output file name is `SYSLOG`, the `SYSLOG.ofs` file is created as a management file separately from the `SYSLOG` file). If you delete the output file, you must also delete this management file.

The `-x` and `-x2` options are mutually exclusive.

-x2

Specifies that the system log information is to be output to the file that is specified with the `X2PATH` parameter in the `EXTRACTFILE` section of the environment parameters file.

The `-x` and `-x2` options are mutually exclusive.

-cnf *environment-parameters-file-name*

Specifies as a character string of 1-255 bytes the name of the environment parameters file that is to be referenced by the command.

If you specify a relative path, make sure that it is relative to the current directory for the command.

If you omit this argument, the system assumes `jr3slget.ini`, which is the default environment parameters file in the current directory. If there is no default environment parameters file, PFM - Agent for Enterprise Applications assumes the default settings for an environment parameters file.

For details about the environment parameters file and the default settings, see [5.4.3 Environment parameters file for extracting system log information by](#)

command execution.

-help

Specified that the usage of the jr3slget command is to be displayed at the standard output.

-v

Specifies that a message indicating the processing status of the jr3slget command is to be output to the standard output. If you omit this option, no message indicating the processing status of the command will be output.

SAP users used for establishing connection

To collect system log information, the jr3slget command executes the external management interfaces defined in the SAP system using RFC (communication protocol of SAP AG). Therefore, you must provide in advance the users who are to be used by the jr3slget command for establishing connection in the SAP system.

This subsection describes the user types, passwords, and authorizations for the SAP users who are created in the SAP system.

User types

The following types of SAP users can be used by PFM - Agent for Enterprise Applications:

- Dialog
- System
- Communication
- Service

Characters permitted for passwords

A password for an SAP user must consist of single-byte numeric characters (from 0 to 9), single-byte alphabetic characters (from a to z, A to Z), and the following single-byte symbols:

!, @, \$, %, &, /, (,), =, ?, ' , ` , * , + , ~ , # , - , _ , . , : , { , [,] , } , < , > , |

Required authorizations

You must set the following authorizations (authorization objects) for the SAP users:

- Authorizations required for a user to establish RFC connection with function modules (S_RFC)

- Authorizations required in order to use external management interfaces (S_XMI_PROD)

The authorization values are shown in the tables below or you can use the built-in configurations (S_RFC_ALL and S_XMI_ADMIN) that specifies XMB for all items.

Table 10-8: Authorizations required for a user to establish RFC connection with function modules (S_RFC)

Authorization	Description	Value
RFC_TYPE	Type of RFC object to be protected	FUGR (function group)
RFC_NAME	RFC name to be protected	*
ACTVT	Activity	16 (execution)

Table 10-9: Authorizations required in order to use external management interfaces (S_XMI_PROD)

Authorization	Description	Value
EXTCOMPANY	Company name of the external management tool	HITACHI
EXTPRODUCT	Program name of the external management tool	JP1
INTERFACE	Interface ID	XMB

Output format and contents

The command extracts the system log information (including parameter record rows) that can be verified by transaction code SM21 in the SAP system.

The following is the default output format for system log information, where < > enclose a field ID:

```
<TIME><INSTANCE><USER><PROGRAM><MSGNO><MSGTEXT>
```

If the value of a system log information item is shorter than the predefined field length, the remaining area is padded with single-byte spaces. The following table lists and explains the values that are output:

Table 10-10: System log information that is output

Field ID	Description	Length (bytes)
<TIME>	Time the message was recorded (<i>HH:MM:SS</i>)	8

Field ID	Description	Length (bytes)
<INSTANCE>	Server that recorded the message	20
<USER>	User who recorded the message	12
<PROGRAM>	Program that recorded the message	8
<MSGNO>	Message number	3
<MSGTEXT>	Message text	255

Return value

0	Normal termination
1 or greater	Abnormal termination

Example

This example outputs the system log information for the o246bci_SD5_00 SAP instance. The RFC connection information has already been defined in the environment parameters file.

```
jr3slget -server o246bci_SD5_00
```

The output example from this command is as follows:

```
13:58:04o246bci_SD5_00 SAPSYS SAPMSSY8R49Communicatin error, CPIC retrun code 027,
SAP return code 456
13:58:04o246bci_SD5_00 SAPSYS SAPMSSY8R64> CPI-C function: CMINIT(SAP)
```


Chapter

11. Messages

This chapter describes the format of the PFM - Agent for Enterprise Applications messages, lists the locations to which messages are output, shows which messages are output to syslog and the Windows event log, and describes the messages in detail.

11.1 Message format

11.2 Message output destinations

11.3 Messages output to syslog and Windows event log

11.4 Messages

11.1 Message format

This section explains the format of messages issued by PFM - Agent for Enterprise Applications. It also describes the notations used in this manual to explain the messages.

11.1.1 Format of output messages

This section explains the format of the messages issued by PFM - Agent for Enterprise Applications. Each message consists of the message ID, followed by the message text. The message format is as follows:

KAVFnnnnn - Y message-text

The message ID is composed of the following elements:

K

Identifier of the system.

AVF

Indicates a PFM - Agent message.

nnnnn

Message number. PFM - Agent for Enterprise Applications message numbers are in the format 14xxx.

Y

Type of message:

- **E: Error**
Error message issued when the system cancels processing.
- **w: Warning**
Error message issued when the system resumes processing after the message has been output.
- **I: Information**
Message in which the system provides the user with information.
- **Q: Query**
Message in which the system prompts the user for a response.

The following are the correspondences between the message type and the syslog priority level:

- E

- Level: LOG_ERR
 - Description: Error message
- W
- Level: LOG_WARNING
 - Description: Warning message
- I
- Level: LOG_INFO
 - Description: Additional information message
- Q
- (Not output)

The following are the correspondences between the message type and the Windows event log type:

- E
- Level: Error
 - Description: Error message
- W
- Level: Warning
 - Description: Warning message
- I
- Level: Information
 - Description: Additional information message
- Q
- (Not output)

11.1.2 Format of message explanations

This section describes the format used to explain messages in this manual. The part of a message text that is shown in italics represents a variable; the actual wording in the message depends on the circumstances. The manual lists the messages in the order of the message IDs. The following illustrates the format of a message explanation:

message-ID
message-text
 Explanation of the message

(S)

Explains the processing performed by the system.

(O)

Explains the action the operator should take when the message is displayed.

Reference note:

When a problem occurs during operation, we recommend that you collect log information and conduct initial checking in accordance with the procedures provided in *12. Error Handling Procedures*.

When you conduct initial checking to determine the cause of a problem, examine all applicable log information, such as the log information for the OS (Windows event log for Windows, syslog for UNIX) and the log information output by PFM - Agent for Enterprise Applications. The log information enables you to understand the details of the problem, take appropriate action, and prevent the problem from recurring in the future. We recommend that you also make a record of the operations that led up to the problem and determine whether the problem is likely to recur.

11.2 Message output destinations

This section shows the output destinations of the messages issued by PFM - Agent for Enterprise Applications.

In the table below, Y and N have the following meanings:

Y: Message is output.

N: Message is not output.

Table 11-1: PFM - Agent for Enterprise Applications message output destinations

Message ID	syslog	Windows event log	Common message log	stdout	stderr	JP1 system event ^{#1}	Extended agent event ^{#2}
KAVF14000	Y	Y	Y	N	N	N	N
KAVF14001	Y	Y	Y	N	N	N	N
KAVF14002	Y	Y	Y	N	N	N	N
KAVF14100	N	N	Y	N	N	Y	Y
KAVF14103	N	N	Y	N	N	Y	Y
KAVF14105	N	N	Y	N	N	N	N
KAVF14121	Y	Y	Y	N	N	Y	Y
KAVF14122	N	N	Y	N	N	N	N
KAVF14125	Y	Y	Y	N	N	Y	Y
KAVF14126	N	N	Y	N	N	N	N
KAVF14127	Y	Y	Y	N	N	Y	Y
KAVF14128	Y	Y	Y	N	N	Y	Y
KAVF14129	Y	Y	Y	N	N	Y	Y
KAVF14131	Y	Y	Y	N	N	Y	Y
KAVF14133	Y	Y	Y	N	N	N	N
KAVF14134	Y	Y	Y	N	N	Y	Y
KAVF14136	Y	Y	Y	N	N	Y	N

11. Messages

Message ID	syslog	Windows event log	Common message log	stdout	stderr	JP1 system event#1	Extended agent event#2
KAVF14150	Y	Y	Y	N	N	Y	N
KAVF14151	Y	N	Y#3	N	N	Y#3	Y#3
KAVF14152	Y	N	Y#3	N	N	Y#3	Y#3
KAVF14160	Y	Y	Y	N	N	Y	Y
KAVF14161	Y	Y	Y	N	N	Y	Y
KAVF14171	Y	Y	Y	N	N	Y	Y
KAVF14172	Y	Y	Y	N	N	Y	Y
KAVF14173	Y	Y	Y	N	N	Y	Y
KAVF14174	Y	Y	Y	N	N	Y	Y
KAVF14175	Y	Y	Y	N	N	Y	Y
KAVF14176	Y	Y	Y	N	N	Y	Y
KAVF14177	Y	Y	Y	N	N	Y	Y
KAVF14178	Y	Y	Y	N	N	N	N
KAVF14179	Y	Y	Y	N	N	N	N
KAVF14200	N	N	N	Y	N	N	N
KAVF14201	N	N	N	Y	N	N	N
KAVF14210	N	N	N	Y	N	N	N
KAVF14211	N	N	N	N	Y	N	N
KAVF14212	N	N	N	Y	N	N	N
KAVF14213	N	N	N	Y	N	N	N
KAVF14215	N	N	N	Y	N	N	N
KAVF14216	N	N	N	Y	N	N	N
KAVF14220	N	N	N	N	Y	N	N
KAVF14221	N	N	N	N	Y	N	N
KAVF14222	N	N	N	N	Y	N	N

Message ID	syslog	Windows event log	Common message log	stdout	stderr	JP1 system event#1	Extended agent event#2
KAVF14223	N	N	N	N	Y	N	N
KAVF14224	N	N	N	N	Y	N	N
KAVF14225	N	N	N	N	Y	N	N
KAVF14226	N	N	N	N	Y	N	N
KAVF14227	N	N	N	N	Y	N	N
KAVF14229	N	N	N	N	Y	N	N
KAVF14230	N	N	N	N	Y	N	N
KAVF14231	N	N	N	N	Y	N	N
KAVF14232	N	N	N	N	Y	N	N
KAVF14233	N	N	N	N	Y	N	N
KAVF14240	N	N	N	N	Y	N	N
KAVF14241	N	N	N	N	Y	N	N
KAVF14242	N	N	N	N	Y	N	N
KAVF14243	N	N	N	N	Y	N	N
KAVF14250	N	N	N	N	Y	N	N
KAVF14251	N	N	N	N	Y	N	N
KAVF14253	N	N	N	N	Y	N	N
KAVF14254	N	N	N	N	Y	N	N
KAVF14255	N	N	N	N	Y	N	N
KAVF14256	N	N	N	N	Y	N	N
KAVF14257	N	N	N	N	Y	N	N
KAVF14260	N	N	N	N	Y	N	N
KAVF14261	N	N	N	N	Y	N	N
KAVF14262	N	N	N	N	Y	N	N
KAVF14263	N	N	N	N	Y	N	N

Message ID	syslog	Windows event log	Common message log	stdout	stderr	JP1 system event#1	Extended agent event#2
KAVF14270	N	N	N	N	Y	N	N
KAVF14271	N	N	N	N	Y	N	N
KAVF14272	N	N	N	N	Y	N	N
KAVF14273	N	N	N	Y	N	N	N
KAVF14274	N	N	N	N	Y	N	N
KAVF14275	N	N	N	Y	N	N	N
KAVF14276	N	N	N	N	Y	N	N
KAVF14277	N	N	N	Y	N	N	N
KAVF14278	N	N	N	N	Y	N	N

Legend:

stdout: Standard output

stderr: Standard error

#1

JP1 system events notify JP1/IM of a change in agent status. For details about the JP1 system events, see the chapter that describes the monitoring of operations linked with the integrated management product (JP1/IM) in the *Job Management Partner 1/Performance Management User's Guide*.

The following table shows the programs required in order to issue JP1 system events.

Table 11-2: Programs required in order to issue JP1 system events

Host type	Prerequisite program	Version
Monitoring manager	PFM - Manager	08-00 or later
Monitoring console server	PFM - Web Console	08-00 or later
Monitoring agent host	PFM - Agent for Enterprise Applications	09-00 or later
	PFM - Manager or PFM - Base	09-00 or later
	JP1/Base	09-00 or later

When the version of PFM - Manager or PFM - Base is 08-xx at the PFM - Agent

host, no JP1 system events are issued. Even if the properties of the Agent Collector service have been set to issue JP1 system events, no JP1 system events will be issued.

To use JP1 system events, you must be using version 09-00 or later of PFM - Manager or PFM - Base at the PFM - Agent host.

#2

Extended agent events notify PFM - Manager of a change in agent status. For details about agent events, see the chapter that describes event display in the *Job Management Partner 1/Performance Management User's Guide*. Note that the extended agent events are issued only when connection is established with PFM - Manager.

The following table shows the programs required in order to issue extended agent events.

Table 11-3: Programs required in order to issue extended agent events

Host type	Prerequisite program	Version
Monitoring manager	PFM - Manager	09-00 or later
Monitoring console server	PFM - Web Console	08-00 or later
Monitoring agent host	PFM - Agent for Enterprise Applications	09-00 or later
	PFM - Manager or PFM - Base	09-00 or later

When the version of PFM - Manager or PFM - Base is 08-xx at the PFM - Agent host, no extended agent events are issued.

To use extended agent events, you must be using version 09-00 or later of PFM - Manager or PFM - Base at the PFM - Agent host.

#3

Output only in the UNIX version

11.3 Messages output to syslog and Windows event log

This section lists the messages that PFM - Agent for Enterprise Applications outputs to syslog and to the Windows event log.

The syslog information is output to the syslog file. For the installation location of the syslog file, see the syslog daemon configuration file (default path is `/etc/syslogd.conf`).

The Windows event log is displayed in the following window:

- In Windows Server 2003 and Windows Server 2008

The Windows event log is displayed in the application log of the Event Viewer window.

To open the Event Viewer window, from the Windows **Start** menu, choose **Administrative Tools**, and then **Event Viewer**.

For any event issued by PFM - Agent for Enterprise Applications, the identifier PFM-R3 is displayed in the **Source** column of the Event Viewer window.

The following table lists the messages that PFM - Agent for Enterprise Applications outputs to syslog and to the Windows event log:

Table 11-4: Messages output to syslog and to the Windows event log

Message ID	syslog		Windows event log	
	Facility	Level	Event ID	Type (level in Windows Server 2008)
KAVF14000-I	LOG_DAEMON	LOG_INFO	14000	Information
KAVF14001-I	LOG_DAEMON	LOG_INFO	14001	Information
KAVF14002-E	LOG_DAEMON	LOG_ERR	14002	Error
KAVF14105-I	LOG_DAEMON	LOG_INFO	14105	Information
KAVF14121-E	LOG_DAEMON	LOG_ERR	14121	Error
KAVF14125-E	LOG_DAEMON	LOG_ERR	14125	Error
KAVF14127-E	LOG_DAEMON	LOG_ERR	14127	Error
KAVF14128-E	LOG_DAEMON	LOG_ERR	14128	Error
KAVF14129-E	LOG_DAEMON	LOG_ERR	14129	Error
KAVF14131-E	LOG_DAEMON	LOG_ERR	14131	Error

Message ID	syslog		Windows event log	
	Facility	Level	Event ID	Type (level in Windows Server 2008)
KAVF14133-E	LOG_DAEMON	LOG_ERR	14133	Error
KAVF14134-E	LOG_DAEMON	LOG_ERR	14134	Error
KAVF14136-E	LOG_DAEMON	LOG_ERR	14136	Error
KAVF14150-E	LOG_DAEMON	LOG_ERR	14150	Error
KAVF14151-E	LOG_DAEMON	LOG_ERR	--	--
KAVF14152-E	LOG_DAEMON	LOG_ERR	--	--
KAVF14160-I	LOG_DAEMON	LOG_INFO	14160	Information
KAVF14161-E	LOG_DAEMON	LOG_ERR	14161	Error
KAVF14171-W	LOG_DAEMON	LOG_WARNING	14171	Warning
KAVF14172-W	LOG_DAEMON	LOG_WARNING	14172	Warning
KAVF14173-W	LOG_DAEMON	LOG_WARNING	14173	Warning
KAVF14174-W	LOG_DAEMON	LOG_WARNING	14174	Warning
KAVF14175-W	LOG_DAEMON	LOG_WARNING	14175	Warning
KAVF14176-W	LOG_DAEMON	LOG_WARNING	14176	Warning
KAVF14178-W	LOG_DAEMON	LOG_WARNING	14178	Warning
KAVF14179-W	LOG_DAEMON	LOG_WARNING	14179	Warning

11.4 Messages

This section explains the messages issued by PFM - Agent for Enterprise Applications and the actions to be taken.

KAVF14000-I

Agent Collector has started. (*host=host-name, service=service-ID*)

Startup or initialization of the Agent Collector service has been completed.

(S)

Starts collecting SAP system performance data.

KAVF14001-I

Agent Collector has stopped. (*host=host-name, service=service-ID*)

The Agent Collector service has stopped for one of the following reasons: termination was requested by execution of the `jpcspm stop (jpcstop)` command, the Windows service terminated, or a signal interrupt occurred.

In the case of a signal interrupt, this message is preceded by the `KAVF14151-E` message indicating the signal reception event and supplemental signal number.

(S)

Stops the Agent Collector service.

KAVF14002-E

Agent Collector failed to start. (*rc=maintenance-code*)

The Agent Collector service cannot continue because startup or initialization of the Agent Collector service failed.

(S)

Stops the Agent Collector service.

(O)

Check the immediately preceding message in syslog (in UNIX), in the Windows event log (in Windows), or in the common message log, and then take appropriate action.

KAVF14100-I

Connected to the SAP system. (*sid=SAP-system-ID*)

RFC connection has been established with the SAP system.

(S)

Resumes initialization of the Agent Collector service.

KAVF14103-I

Reconnected to the SAP system. (*sid=SAP-system-ID*)

RFC connection has been re-established with the SAP system. This message is issued when connection had already been established with the SAP system since the Agent Collector service started but was broken for some reason, and now the connection has been re-established.

(S)

Resumes initialization of the Agent Collector service.

KAVF14105-I

The connection to the SAP system was closed. (*sid=SAP-system-ID*)

RFC connection with the SAP system has been closed.

This message is issued when processing based on a termination request is to be executed or when the RFC handle is to be released due to a transient error during operation.

(S)

If processing based on a termination request is to be executed, the system terminates the Agent Collector service.

If the RFC handle is to be released due to a transient error during operation, the system waits until the next connection.

KAVF14121-E

An error occurred in the RFC API. (*name-of-API-resulting-in-error*)

An RFC function call resulted in an error. For an RFC API error during connection establishment with the SAP system, the KAVF14127-E or KAVF14128-E message is issued instead of this message. Following this message, the KAVF14122-E message providing detailed error information is output to the common message log. Possible causes of this error are as follows:

- The SAP system is not active.
- The SAP system cannot accept an RFC request due to heavy workload.
- There is a problem in the network settings.

(S)

- When this error occurs during startup processing:
Stops the Agent Collector service.
- When this error occurs subsequent to startup processing (during operation):
Continues monitoring. The system closes any open RFC handle and re-establishes connection when the next collection begins. Updating of the

performance data that was supposed to take place during this collection period will be delayed.

(O)

- When this error occurs during startup processing:

Re-evaluate the status, such as the connection parameters set in the Agent Collector service startup initialization file (`jpcagt.ini`), the operating status of the SAP system, and the network status, correct the error, and then restart.

- When this error occurs subsequent to startup processing (during operation):

A fatal error, such as SAP system shutdown, may have occurred. Check the `KAVF14122-E` message output to the common message log before or after the time of this error and resolve the problem.

Before correcting an error in the connection parameters in the Agent Collector service startup initialization file (`jpcagt.ini`), check if PFM - Agent for Enterprise Applications was stopped by the `jpcspm stop` (`jpcstop`) command.

If this error occurred due to planned termination (such as for SAP system maintenance purposes), you can ignore this message. When the SAP system restarts, PFM - Agent for Enterprise Applications will re-establish connection and continue with monitoring.

KAVF14122-E

`RFC_ERROR_INFO_EX`: `GROUP=error-group-name`, `KEY=error-key`,
`MESSAGE=error-message`

This message is output following the `KAVF14121-E`, `KAVF14127-E`, or `KAVF14128-E` message. It provides details of the RFC API error. The meanings of the values displayed in the message are as follows:

- `GROUP`: 3-byte integer identifying the key
- `KEY`: Code (maximum of 32 bytes) that identifies the error
- `MESSAGE`: Text (maximum of 512 bytes) that describes the error (may include linefeed codes)

These are the member values in the `RFC_ERROR_INFO_EX` structure obtained by the `GetRfcLastErrorEx` function that returns the RFC API error. For details about RFC, see the documentation for the SAP system.

(S)

This message is preceded by the `KAVF14121-E`, `KAVF14127-E`, or `KAVF14128-E` message; see that message for the system processing.

(O)

Check the KAVF14121-E, KAVF14127-E, or KAVF14128-E message displayed before this message, and eliminate the cause of the error.

KAVF14125-E

An error occurred in the function module of the SAP system.
(*name-of-function-module-resulting-in-error*)

An SAP system function module returned an unexpected error code. This message is followed in the common message log by the KAVF14126-E message that provides detailed error information. The cause of the error is defined for each function module that was called. For details about the cause of the error, see the KAVF14126-E message.

(S)

- When this error occurs during startup processing:
Stops the Agent Collector service.
- When this error occurs subsequent to startup processing (during operation):
Continues monitoring. The system postpones updating of the performance data that was supposed to take place at this time.

(O)

- When this error occurs during startup processing:
Check the version of the SAP system. BAPI_XMI_LOGON may result in an error during authorization checking.

In such a case, grant the SXMI_PROD authorization object to the user who is attempting to establish connection.
- When this error occurs subsequent to startup processing (during operation):
Check the KAVF14126-E message output to the common message log before or after this error occurred, and resolve the problem.

KAVF14126-E

BAPIRET2: TYPE=*message-type*, ID=*message-class*, NUMBER=*message-number*,
MESSAGE=*message-text*

This message provides the details of an error in the function module (BAPI). The meanings of the values displayed in the message are as follows:

- TYPE: One-byte character indicating the severity level of the message (S: normal, E: error, W: warning, I: information, A: forced termination)
- ID: Message class (maximum of 20 bytes)
- NUMBER: Error code (maximum of 3 bytes) that identifies the error

- **MESSAGE:** Text (maximum of 220 bytes) that describes the nature of the error

These are the member values in the `BAPIRET2` structure that stores a BAPI error. For details about BAPI, see the documentation for the SAP system. For details about the specification of the called BAPI, see the documentation for the SAP system's object navigator (SE80), BAPI browser (BAPI) or the SAP system.

(S)

This message is preceded by the `KAVF14125-E` message; see that message for system processing.

(O)

Check the `KAVF14125-E` message displayed before this message and eliminate the cause of the error.

KAVF14127-E

Cannot connect to the SAP system. (*name-of-the-function-resulting-in-error*)

A connection error occurred during connection establishment with the SAP system. For an RFC API error during connection establishment with the SAP system, this message or the `KAVF14128-E` message is issued instead of the `KAVF14121-E` message. Following this message, the `KAVF14122-E` message providing detailed error information is output to the common message log.

Possible causes of this error are as follows:

- The SAP system is not active.
- The SAP system cannot accept an RFC request due to heavy workload.
- There is a problem in the network settings.
- The destination information is invalid (there is an error in the information, such as host name or system number).

(S)

- When this error occurs during startup processing:
Stops the Agent Collector service.
- When this error occurs subsequent to startup processing (during operation):
Continues monitoring. The system closes any open RFC handle and re-establishes connection the next time performance data is collected. Updating of the performance data that was supposed to take place during this collection period will be delayed.

(O)

- When this error occurs during startup processing:

Re-evaluate the status, such as the connection parameters set in the Agent Collector service startup initialization file (`jpcagt.ini`), the operating status of the SAP system, and the network status, correct the error, and then restart.

- When this error occurs subsequent to startup processing (during operation):

A fatal error, such as SAP system shutdown, may have occurred. Check the `KAVF14122-E` message output to the common message log before or after the time of this error and resolve the problem.

Before correcting an error in the connection parameters in the Agent Collector service startup initialization file (`jpcagt.ini`), check if PFM - Agent for Enterprise Applications was stopped by the `jpcspm stop` (`jpcstop`) command.

If this error occurred due to planned termination, such as for SAP system maintenance purposes, you can ignore this message. When the SAP system restarts, PFM - Agent for Enterprise Applications re-establishes connection and continues monitoring.

KAVF14128-E

Cannot log on to the SAP system. (*name-of-the-function-resulting-in-error*)

A logon error occurred during connection establishment with the SAP system. For an RFC API error during connection establishment with the SAP system, this message or the `KAVF14127-E` message is issued instead of the `KAVF14121-E` message.

Following this message, the `KAVF14122-E` message providing detailed error information is output to the common message log. Possible causes of this error are as follows:

- The logon information is invalid (there is an error in the information, such as client name, user name, or password).
- The user's password has been changed.
- The user does not have the required authorization.

This refers to the authorization (`S_RFC`) needed to establish RFC connection with the function module (BAPI).

- An extended password containing lower-case letters is defined in the SAP system based on SAP NetWeaver 7.0 or later, but `N` (do not use extended passwords) was specified in the `EXTPWD` instance information item.

(S)

- When this error occurs during startup processing:
Stops the Agent Collector service.
- When this error occurs subsequent to startup processing (during operation):

Continues monitoring. The system closes any open RFC handle and re-establishes connection the next time performance data is collected. Updating of the performance data that was supposed to take place during this collection period will be delayed.

(O)

- When this error occurs during startup processing:
Re-evaluate the settings, such as the connection parameters in the Agent Collector service startup initialization file (`jpcagt.ini`) and the user definitions in the SAP system, correct the error, and then restart.
- When this error occurs subsequent to startup processing (during operation):
Possible causes include deletion of the user or a change in the password. Check the `KAVF14122-E` message output to the common message log before or after this error occurred, and resolve the problem.

Before correcting an error in the connection parameters in the Agent Collector service startup initialization file (`jpcagt.ini`), check if PFM - Agent for Enterprise Applications was stopped by the `jpcspm stop` (`jpcstop`) command.

KAVF14129-E

`SAP instance=SAP instance-name`

This message displays the name of the SAP instance resulting in a communication error when the `KAVF14121-E` or `KAVF14127-E` message has been displayed.

(S)

This message is preceded by the `KAVF14121-E` or `KAVF14127-E` message; see that message for the system processing.

(O)

Check the `KAVF14121-E` or `KAVF14127-E` message displayed before this message, and eliminate the cause of the error.

KAVF14131-E

`The system resources are insufficient.`

There is a shortage in system resources, such as memory or handles. The resources required by Performance Management are insufficient or the system is unstable due to another application's resource leakage.

(S)

- When this error occurs during startup processing:
Stops the Agent Collector service.

- When this error occurs subsequent to startup processing (during operation):

The Agent Collector service attempts to continue monitoring as much as possible. A series of operations or requests is rejected, and updating of the performance data that was supposed to take place at this time is delayed.

(O)

Identify the problem as soon as possible and recover the system status. Secure the system resources by re-estimating the required resources as well as re-evaluating the memory expansion and kernel parameters.

KAVF14133-E

An error occurred in an internal function. (*func=function-name*, *rc=maintenance-code*)

A function error occurred in an internal function interface.

(S)

If this error occurs during startup processing, the Agent Collector service terminates abnormally. If the error occurs after completion of startup processing (during operation), the Agent service continues monitoring. However, a series of operations or requests is rejected and updating of the performance data that was supposed to take place at this time is delayed.

(O)

If the error occurs frequently and cannot be recovered, collect maintenance data and contact the system administrator. For details about how to collect maintenance data, see the chapter that describes error handling procedures in the *Job Management Partner 1/Performance Management User's Guide*.

KAVF14134-E

A file or directory cannot be accessed. (*path*)

An error (other than a shortage of disk space) occurred during a general file access, such as a creation, deletion, read, or write operation. Possible causes of this error are as follows:

- The file does not exist.
- There is no access permission.
- The file system has been unmounted.
- The specified file path is a directory path (invalid environment).

(S)

- When this error occurs during startup processing:
Stops the Agent Collector service.

- When this error occurs subsequent to startup processing (during operation):
The Agent Collector service attempts to continue monitoring as much as possible. A series of operations or requests is rejected, and updating of the performance data that was supposed to take place at this time is delayed.

(O)

Check the status of the file indicated by *path* in the message and correct the error.

KAVF14136-E

The content of the Agent Collector service startup initialization file is invalid. (*section=section-name*, *subsection=subsection-name*, *label=label-name*)

The Agent Collector service startup initialization file (*jpcagt.ini*) contains an invalid specification.

(S)

Cancels startup processing and stops the Agent Collector service.

(O)

Check the *section-name*, *subsection-name*, and *label-name* displayed in the message, correct the invalid specification in the Agent Collector service startup initialization file (*jpcagt.ini*), and then restart the Agent Collector service.

KAVF14150-E

The system environment is invalid. (*rc=maintenance-code*)

The system environment is invalid. This error occurs when installation and setup are incomplete or system files and registry information have been deleted or modified erroneously.

(S)

Terminates the Agent Collector service abnormally.

(O)

Back up all necessary data, uninstall the system, and then re-install it. If this does not resolve the problem, collect maintenance data and then contact the system administrator. For details about how to collect maintenance data, see the chapter that describes error handling procedures in the *Job Management Partner 1/ Performance Management User's Guide*.

KAVF14151-E

The processing was interrupted by a signal. (*signal=signal-number*)

The Agent Collector service stopped because a process termination signal was accepted as a result of an event such as system shutdown.

(S)

Stops the Agent Collector service.

KAVF14152-W

Reception of a signal caused the service to stop.
(*signal=signal-number*)

In UNIX, reception of the indicated signal caused the Agent Collector service to stop the processing.

(S)

Stops the Agent Collector service processing.

KAVF14160-I

The performance data will now be collected. (*sid=SAP-system-ID, server=SAP-instance-name*)

The Agent Collector service has started collecting performance data. At this point, all collection-related initialization processing has been completed.

(S)

Collects performance data.

KAVF14161-E

The SAP instance does not exist. (*sid=SAP-system-ID, server=SAP-instance-name*)

No instance information was found in the connection-target SAP system due to an error in the specification of the SAP system ID or SAP instance name in the [Agent] - [Target] subsection in the Agent Collector service startup initialization file (*jpcagt.ini*).

(S)

- When this error occurs during startup processing:
Stops the Agent Collector service.
- When this error occurs subsequent to startup processing (during operation):
Continues monitoring. The system delays the updating of performance data that was supposed to take place at this time.

(O)

Re-evaluate the SAP instance name (value of the `SERVER` parameter in the `Target` section) specified in the Agent Collector service startup initialization file (*jpcagt.ini*). The SAP instance name is usually in the format *host-name_system-ID_system-number*.

KAVF14171-W

The performance data could not be updated. (*record-ID[.field-name]*)

Collection of performance data failed. This message is preceded by a message that indicates the direct cause of the error, such as a communication error or function module (BAPI) error. This message displays the affected record ID and field name, separated by a period. The displayed record ID and field name are PFM - Manager names.

(S)

Continues with performance data collection. Updating of the performance data is delayed until the next collection request.

(O)

Eliminate the cause of the error.

KAVF14172-W

The performance data cannot be collected now.

This message indicates that performance data is not being collected due to a communications error. Performance data cannot be collected at this agent until output of the KAVF14103-I message that indicates that connection to the SAP system has been recovered, followed by output of the KAVF14160-I message indicating completion of initialization.

(S)

Attempts to reconnect with the SAP system at each collection request. Note that the subsequent connection errors are not reported. When connection with the SAP system is recovered, the system displays the KAVF14103-I message.

(O)

Check the KAVF14121-E and KAVF14122-E communication error messages displayed before this message, and eliminate the cause of the error.

KAVF14173-W

The performance data cannot be reported. (*record-ID*[.*field-name*])

The connection-target SAP system does not support this performance data.

No data source corresponding to the performance data was found in the connection-target SAP system.

This message displays the record ID and field name, separated by a period, of the unsupported performance data. The displayed record ID and field name are PFM - Manager names.

(S)

Stops monitoring for this performance data and resumes initialization of agent.

(O)

Check the supported performance data. For details about the supported performance data, see 9. *Records*.

KAVF14174-W

During collection of data, the number of instances of a multi-instance record exceeded the maximum. (*record=record-ID, limit=maximum-value, instance=instances-count*)

During data collection, the number of instances for a multi-instance record exceeded the maximum value. The excess instances are being discarded.

(S)

Resumes processing.

(O)

Check and, if necessary, revise the target monitor settings.

KAVF14175-W

The specified monitor set name is invalid. (*monitor-set-name*)

One of the following may apply to the settings in the [Agent] - [PI_UMP] folder for the properties of the Agent Collector service:

- The MONITOR_SET property has not been set.
- The monitor set name that was set is undefined in the SAP system.
- The defined monitor set name is invalid.

(S)

Cancels collection of the User defined Monitor (Perf.) (PI_UMP) record and resumes processing.

(O)

Check in the [Agent] - [PI_UMP] folder for the properties of the Agent Collector service whether the monitor set name set in the MONITOR_SET property exists in the SAP system.

You can check the monitor set name by means such as transaction code RZ20. The monitor set name may be shown as *monitor set*. Note that the settings are case sensitive.

KAVF14176-W

The specified monitor name is invalid. (*monitor-name*)

One of the following may apply to the settings in the [Agent] - [PI_UMP] folder for the properties of the Agent Collector service:

- The MONITOR_SET property has not been set.

- The monitor name that was set is undefined in the SAP system.
- The defined monitor name is invalid.

(S)

Cancels collection of the User defined Monitor (Perf.) (PI_UMP) record and resumes processing.

(O)

Check in the [Agent] - [PI_UMP] folder for the properties of the Agent Collector service whether the monitor name set in the MONITOR_SET property exists in the SAP system.

You can check the monitor name by means such as transaction code RZ20. The monitor name may be shown as *monitor set*. Note that the settings are case sensitive.

KAVF14177-W

The Performance data could not be collected. (*record-ID, monitor-set-name, monitor-name, MTE-name*)

Collection of the performance data indicated by the MTE name failed (BAPI error). This message is preceded by a message that indicates the specific cause of the error, such as a communication error or function module (BAPI) error.

(S)

Cancels collection of the performance data indicated by the MTE name and resumes processing. Updating of the performance data that was to be acquired at this time will be delayed until the next collection time.

(O)

Check the message output immediately preceding this message and eliminate the cause of the error.

KAVF14178-W

It failed to issue JP1 system event or Agent event extension.

The Agent Collector service failed to issue a JP1 system event or an extended agent event. Any subsequent event issuance failures will not be reported.

(S)

The Agent Collector service resumes processing.

(O)

Check if JP1/Base is running on the same host as for PFM - Agent for Enterprise Applications. Also check and, if necessary, revise the settings by referencing the chapter that describes operation monitoring linked with the integrated management product (JP1/IM) in the *Job Management Partner 1/Performance*

Management User's Guide. If the problem remains unresolved, collect maintenance data and contact the system administrator. For details about how to collect maintenance data, see the chapter that describes error handling procedures in the *Job Management Partner 1/Performance Management User's Guide*.

KAVF14179-W

It failed to issue JP1 system event or Agent event extension, because Memory is insufficient.

The Agent Collector service failed to issue a JP1 system event or an extended agent event due to insufficient memory. The resources required by PFM are insufficient or the system is unstable due to resource leakage in another application.

(S)

The Agent Collector service resumes processing.

(O)

Identify the problem and recover the system status. Secure the necessary system resources by re-estimating the required resources as well as by expanding the memory.

KAVF14200-I

Usage:

```
jr3slget [-h application-server-host -s system-number]
         [-c client -u user {-p password | -p2 extended password}
         [-l language] [-codepage codepage]]
         [-server sap-instance-name]
         [-lasttime time-stamp-file]
         [{-x log-file | -x2}]
         [-cnf environment-parameter-file]
         [-help] [-v]
```

This message displays the usage of the jr3slget command when the -help option has been specified.

(S)

Terminates the command normally.

KAVF14201-I

Usage:

```
jr3alget [-h application-server-host -s system-number]
         [-c client -u user {-p password | -p2 extended password}
         [-l language] [-codepage codepage]]
         [-c client -u user -p password [-l language] [-codepage
codepage]]
         [-ms monitor-set-name -mn monitor-name]
         [-lasttime time-stamp-file]
```

```
[{-x log-file | -x2}]  
[-cnf environment-parameter-file]  
[-help] [-v]
```

This message displays the usage of the `jr3alget` command when the `-help` option has been specified.

(S)

Terminates the command normally.

KAVF14210-I

The command ended normally.

This message indicates that the command has terminated normally. This message is displayed only when the `-v` option was specified in the command.

(S)

Terminates the command with termination code 0.

KAVF14211-E

The command ended abnormally. (*exit=termination-code*)

This message indicates that the command has terminated abnormally.

(S)

Terminates the command with the displayed *termination-code*.

(O)

Check the cause message that was displayed before this message.

KAVF14212-I

Connected to the SAP system.

RFC connection has been established with the SAP system. This message is displayed only when the `-v` option was specified in the command.

(S)

Following this message, the system displays the `KAVF14213-I` and `KAVF14215-I` messages indicating the parameter information used for connection, and then resumes processing.

KAVF14213-I

SAP system data: *ashost=application-server-host, sysnr=system-number*

Following the `KAVF14212-I` message during establishment of RFC connection, this message displays the parameters used as the RFC connection information (destination). This message is displayed only when the `-v` option was specified in the command.

(S)

Following the KAVF14212-I message, the system displays the parameter information used for connection establishment.

KAVF14215-I

SAP user data: *client=client, user=user, lang=language, codepage=code-page*

Following the KAVF14212-I message during establishment of RFC connection, this message displays the parameters used as the RFC connection information (logon information). This message is displayed only when the -v option was specified in the command. If the language and code page were omitted, no values are set in *lang=* and *codepage=*. This message does not display the password.

(S)

Following the KAVF14212-I message, the system displays the parameter information used for connection establishment.

KAVF14216-I

Logged on to the external interface. (*interface=interface-name, version=version*)

The system successfully logged on to the external interface of the SAP system. This message displays the interface name and version of the logon target. This message is displayed only when the -v option was specified in the command.

(S)

Resumes processing.

KAVF14220-E

An error occurred in the RFC API. (*RFC-API-name-resulting-in-error*)

An RFC API call resulted in an error.

(S)

Following this message, the system displays the KAVF14221-E message that provides detailed error information. The system may also display a supplemental message on the errors that can be classified into categories. The system then cancels execution of the command.

(O)

Check any subsequent messages, eliminate the cause of the error, and then re-execute the command.

KAVF14221-E

RFC_ERROR_INFO_EX: *group=error-group-name, key=error-key, message=error-message*

This message displays the details of an RFC API error. This message follows the

KAVF14220-E message. The meanings of the values displayed in the message are as follows:

- `group`: 3-byte integer identifying the key
- `key`: Code (maximum of 32 bytes) that identifies the error
- `message`: Text (maximum of 512 bytes) that describes the error (may include linefeed codes)

These are the member values in the `RFC_ERROR_INFO_EX` structure obtained by the `GetRfcLastErrorEx` function that returns the RFC API error. For details about RFC, see the documentation for the SAP system.

(S)

Cancel execution of the command.

(O)

Correct the error and then re-execute the command.

KAVF14222-E

An error occurred in the function module of the SAP system.
(*function-module-name*)

The function module (BAPI) of the SAP system returned an error.

(S)

Following this message, the system displays the KAVF14223-E or KAVF14224-E message that provides detailed error information. The system may also display a supplemental message on the errors that can be classified into categories. The system then cancels execution of the command.

(O)

Check any subsequent messages, eliminate the cause of the error, and then re-execute the command.

KAVF14223-E

BAPIRET2: *type=message-type, id=message-class, number=message-number, message=message-text*

When an error is detected in the function module (BAPI), this message is displayed immediately after the KAVF14222-E message. The meanings of the values displayed in the message are as follows:

- `type`: One-byte character indicating the severity level of the message (S: normal, E: error, W: warning, I: information, A: forced termination)
- `id`: Message class (maximum of 20 bytes)
- `number`: Error code (maximum of 3 bytes) that identifies the error

- `message`: Text (maximum of 220 bytes) that describes the nature of the error

These are the member values in the `BAPIRET2` structure that stores a BAPI error. For details about BAPI, see the documentation for the SAP system. For details about the specification of the called BAPI, see the documentation for the SAP system's object navigator (SE80), BAPI browser (BAPI) or the SAP system.

(S)

Cancels execution of the command.

(O)

Correct the error and then re-execute the command.

KAVF14224-E

`RFC_EXCEPTION`: *error-cause-code*

When an error is detected in a function module by an RFC exception, this message is displayed following the `KAVF14222-E` message.

(S)

Cancels execution of the command.

(O)

Correct the error and then re-execute the command.

KAVF14225-E

Cannot connect to the SAP system.

A communications error occurred while RFC connection with the SAP system was being established. This message immediately follows the `KAVF14220-E` and `KAVF14221-E` messages that provide the name of the function resulting in the error and detailed information. Possible causes of this error are as follows:

- The specified RFC connection inventory is invalid (such as the host name cannot be resolved or the specified system number is invalid).
- The SAP system is not active.
- The SAP system cannot accept an RFC request due to heavy workload.
- There is a problem in the network settings.

(S)

Following this message, the system displays the `KAVF14227-E` and `KAVF14229-E` messages that provide the parameter information used for connection establishment. The system then cancels execution of the command.

(O)

Check the destination specified as the RFC connection information to re-evaluate

the operating status of the SAP system and the network status, correct the error, and then re-execute the command.

KAVF14226-E

Cannot connect to the SAP system, because an attempt to log on failed.

A logon error occurred when RFC connection was being established with the SAP system. This message immediately follows the KAVF14220-E and KAVF14221-E messages that provide the name of the function resulting in the error and detailed information. Possible causes of this error are as follows:

- The specified RFC connection inventory is invalid (such as the specified user does not exist or the specified password is invalid).
- The user has been locked out.
- The user does not have the correct S_RFC authorizations.
- An extended password containing lower-case letters is defined in the SAP system based on SAP NetWeaver 7.0 or later, but the specified connection information (-p option and `PASSWD` label in the environment parameters file) does not support extended passwords.

(S)

Following this message, the system displays the KAVF14227-E and KAVF14229-E messages that provide the parameter information used for connection establishment. The system then cancels execution of the command.

(O)

Determine the user specified for the RFC connection information and check for undefined information, password expiration, lockout, and authorizations, correct the error, and then re-execute the command.

KAVF14227-E

SAP system data: *ashost=application-server-host, sysnr=system-number*

In the event of an RFC connection error, following the KAVF14225-E or KAVF14226-E message, this message displays the parameters that were used as the RFC connection information (destination).

(S)

Cancels execution of the command.

(O)

Correct the error and then re-execute the command.

KAVF14229-E

SAP user data: client=*client*, user=*user*, lang=*language*,
codepage=*code-page*

In the event of an RFC connection error and following output of the KAVF14225-E or KAVF14226-E message, this message displays the parameters that were used as the RFC connection information (logon). If the language and code page were omitted, no values are set in lang= and codepage=. This message does not display the password.

(S)

Cancels execution of the command.

(O)

Correct the error and then re-execute the command.

KAVF14230-E

Cannot log on to the external interface.
(interface=*logon-target-interface-name*, version=*version*)

A logon request for the external interface of the SAP system was rejected (BAPI error). This message is preceded by the KAVF14222-E and KAVF14223-E messages that provide the name of the function module (BAPI) resulting in the error and detailed information. Possible causes of this error are as follows:

- The connection-target SAP system does not support this interface.
- The user does not have the S_XMI_PROD authorization.

(S)

Cancels execution of the command.

(O)

Make sure that the release and patch level of SAP Basis (SAP WebAS) in the connection-target SAP system meet the requirements. If the BAPI_XMI_LOGON function module resulted in an error during authorization checking, grant the SXMI_PROD authorization object to the user being used for RFC connection.

KAVF14231-E

The specified server name is invalid. (*specified-SAP-instance-name*)

The SAP instance name specified by one of the following methods is undefined or invalid (BAPI error):

- -server option of the jr3slget command
- Environment parameters file (SERVER label of the TARGET section)

This message is preceded by the KAVF14222-E and KAVF14223-E messages that provide the name of the function module (BAPI) resulting in the error and detailed information.

(S)

Cancels execution of the command.

(O)

Check the specified SAP instance name and re-execute the command. You can use transaction code SM51 to check the SAP instance name. The SAP instance name is usually in the format *host-name_system-ID_system-number*. The SAP instance names are case-sensitive.

KAVF14232-E

The specified monitor set name is invalid. (*specified-monitor-set-name*)

The monitor set name specified by one of the following methods is undefined or invalid (BAPI error):

- -ms option of the jr3alget command
- Environment parameters file (MONITOR_SET label of the TARGET section)

This message is preceded by the KAVF14222-E and KAVF14223-E messages that provide the name of the function module (BAPI) resulting in the error and detailed information.

(S)

Cancels execution of the command.

(O)

Check the specified monitor set name and re-execute the command. You can use transaction code RZ20 to check the monitor set name. The monitor set name may be shown as *monitor set*. The monitor set names are case-sensitive.

KAVF14233-E

The specified monitor name is invalid. (*specified-monitor-name*)

The monitor name specified by one of the following methods is undefined or invalid (BAPI error):

- -mn option of the jr3alget command
- Environment parameters file (MONITOR label of the TARGET section)

This message is preceded by the KAVF14222-E and KAVF14223-E messages that provide the name of the function module (BAPI) resulting in the error and detailed information.

(S)

Cancels execution of the command.

(O)

Check the specified monitor name and re-execute the command. You can use transaction code RZ20 to check the monitor set name and monitor name. The monitor set name may be shown as *monitor set*. The monitor names are case-sensitive.

KAVF14240-E

The command execution will be terminated because the system resources are insufficient.

Processing cannot continue because of a memory shortage.

(S)

Cancels execution of the command.

(O)

Terminate an unneeded application or expand the memory, and then re-execute the command.

KAVF14241-E

A file or directory cannot be opened.
(*name-of-file-or-directory-resulting-in-error*)

An error occurred during file or directory open or creation processing. If a relative path is shown in the message, it is the path from the work directory for the command. If you have specified a different work directory in the environment parameters file, it may be different from the current directory. Possible causes of this error are as follows:

- The file or directory does not exist (when an existing file is opened).
- The user executing the command does not have the permission to open this file or directory.
- There are not enough system resources to create the file or directory.

(S)

Cancels execution of the command.

(O)

Check the permissions of the user executing the command and the status of the indicated path, correct the error, and then re-execute the command.

KAVF14242-E

The available free space is insufficient for extending the file or directory. (*name-of-file-or-directory-resulting-in-error*)

A disk space shortage occurred when the open file or directory space was to be extended. If a relative path is shown in the message, it is the path from the work directory for the command. If you have specified a different work directory in the

environment parameters file, it may be different from the current directory. If an access error has occurred on the standard input/output, a null character string is displayed for *name-of-file-or-directory-resulting-in-error*.

(S)

Cancels execution of the command.

(O)

Increase the available space in the indicated file system or change the location where the file is to be created, and then re-execute the command.

KAVF14243-E

An error occurred during the accessing of the file or directory.
(*name-of-file-or-directory-resulting-in-error*)

A general access to a file or directory resulted in an I/O error. If a relative path is shown in the message, it is the path from the work directory for the command. If you have specified a different work directory in the environment parameters file, it may be different from the current directory. If an access error has occurred on the standard input/output, a null character string is displayed for *name-of-file-or-directory-resulting-in-error*.

(S)

Cancels execution of the command.

(O)

Check the status of the indicated path, correct the error, and then re-execute the command.

KAVF14250-W

A specified environment parameter is invalid.
(*section=section-name, label=label-name*)

The value of the environment parameter indicated by *section-name* and *label-name* is invalid in the environment parameters file. Possible causes of this error are as follows:

- The value is too long.
- The value contains an invalid character.
- The specified numeric value is outside the permitted range.

(S)

Ignores the specified value and resumes processing. The command will not terminate abnormally as a result of this warning.

(O)

Re-evaluate the values specified in the environment parameters file. If you do not

specify an environment parameters file with the `-cnf` option, the default environment parameters file (`command-name.ini` in the current directory) is referenced.

KAVF14251-E

A required option is missing.

A required option or an option that cannot be omitted due to a required combination of options is missing. For example, if you specify the `-h` option for RFC connection information, you cannot omit the `-s` option.

(S)

Cancels execution of the command.

(O)

Re-evaluate the command syntax and then re-execute the command.

KAVF14253-E

The option value is invalid. (*option*)

The indicated option value is invalid. Possible causes of this error are as follows:

- The value is omitted.
- The value is too long.
- The value contains an invalid character.
- The specified numeric value is outside the permitted range.

(S)

Cancels execution of the command.

(O)

Re-evaluate the command syntax and then re-execute the command.

KAVF14254-E

An option is invalid. (*option*)

The indicated option character string is invalid.

(S)

Cancels execution of the command.

(O)

Re-evaluate the command syntax and then re-execute the command.

KAVF14255-E

Mutually-exclusive options are specified.

Mutually-exclusive options are specified. For example, the `-x` and `-x2` options for

specifying the output destination cannot both be specified.

(S)

Cancels execution of the command.

(O)

Re-evaluate the command syntax and then re-execute the command.

KAVF14256-E

An option is duplicated. (*option*)

The indicated option cannot be specified more than once.

(S)

Cancels execution of the command.

(O)

Re-evaluate the command syntax and then re-execute the command.

KAVF14257-E

Mutually exclusive keys or section names are specified as environment parameters.

Mutually exclusive key section names are specified in the environment parameters file. The following is a possible cause of this error:

- `PASSWD` and `PASSWD2` are both specified, but these sections are mutually exclusive for specifying a password.

(S)

Cancels execution of the command.

(O)

Check and, if necessary, revise the settings in the environment parameters file.

KAVF14260-E

The specified RFC connection parameter (*destination*) is incomplete.

Processing cannot continue because arguments (`-h` and `-s` options) were omitted and the *RFC-connection-information* environment parameters are undefined or invalid in the environment parameters file. If you are omitting the arguments, make sure that the following items are defined correctly in the `CONNECT` section of the environment parameters file:

- Application server host (`ASHOST`)
- System number (`SYSNR`)

(S)

Cancels execution of the command.

(O)

Re-evaluate the values specified in the environment parameters file and then re-execute the command. If the environment parameters file is not specified with the `-cnf` option, the default environment parameters file (`command-name.ini` in the current directory) is used.

KAVF14261-E

The specified RFC connection parameter (logon) is incomplete.

Processing cannot continue because arguments (`-c`, `-u`, and `-p` options) were omitted and the *RFC-connection-information* environment parameters are undefined or invalid in the environment parameters file. If you are omitting the arguments, make sure that the following items are defined correctly in the `CONNECT` section of the environment parameters file:

- Client (`CLIENT`)
- User (`USER`)
- Password (`PASSWD`)

(S)

Cancels execution of the command.

(O)

Check the values specified in the environment parameters file and then re-execute the command. If you do not specify an environment parameters file with the `-cnf` option, the default environment parameters file (`command-name.ini` in the current directory) is referenced.

KAVF14262-E

The specified target is incomplete.

- For the `jr3slget` command:

Processing cannot continue because an argument (`-server`) was omitted and the *target* environment parameter is undefined or invalid in the environment parameters file. If you are omitting the argument, make sure that the following item is defined correctly in the `TARGET` section of the environment parameters file:

- Application server (`SERVER`)
- For the `jr3alget` command:

Processing cannot continue because arguments (`-ms` and `-mn`) were omitted and

the *target* environment parameter is undefined or invalid in the environment parameters file. If you are omitting the arguments, make sure that the following items are defined correctly in the TARGET section of the environment parameters file:

- Monitor set name (MONITOR_SET)
- Monitor name (MONITOR)

(S)

Cancels execution of the command.

(O)

Check the values specified in the environment parameters file and then re-execute the command. If you do not specify an environment parameters file with the `-cnf` option, the default environment parameters file (*command-name.ini* in the current directory) is referenced.

KAVF14263-E

The specified output place is incomplete.

Processing cannot continue because the `-x2` option was omitted and the output-target path in the X2PATH label of the EXTRACTFILE section is undefined or invalid in the environment parameters file.

(S)

Cancels execution of the command.

(O)

Check the values specified in the environment parameters file and then re-execute the command. If you do not specify an environment parameters file with the `-cnf` option, the default environment parameters file (*command-name.ini* in the current directory) is referenced.

KAVF14270-E

The environment parameter settings file cannot be accessed.
(*path-name-of-erroneous-environment-parameters-file*)

The environment parameters file specified with the `-cnf` option is not accessible. If a relative path is shown in the message, it is relative to the current directory. Possible causes of this error are as follows:

- The file does not exist.
- The user executing the command does not have the read permissions.

(S)

Cancels execution of the command.

(O)

Check the permissions granted to the user executing the command and the status of the indicated path, correct the error, and then re-execute the command.

KAVF14271-W

The trace file cannot be accessed. (*path-name-of-erroneous-trace-file*)

An error occurred one or more times during a trace file open or write operation. It may be that no maintenance information was collected or that some maintenance information is missing. If the indicated path is a relative path, it is relative to the work directory for the command. If you have specified a different work directory in the environment parameters file, it may be different from the current directory. Possible causes of this error are as follows:

- The file does not exist.
- The user executing the command does not have the read or write permissions.

(S)

Resumes processing. The command will not terminate abnormally as a result of this warning.

(O)

Check the permissions granted to the user executing the command and the status of the indicated path, and then correct the error. You can use the environment parameters file to change the output destination of the trace file.

KAVF14272-E

The work directory cannot be changed. (*work-directory*)

The work directory cannot be changed to the path specified in the environment parameters file (value specified for the WORKDIR label in the COMMAND section). Possible causes of this error are as follows:

- An invalid path was specified.
- The specified value is not a directory.
- The directory does not have the execution (search) permissions.

(S)

Cancels execution of the command.

(O)

Check the path specified in the environment parameters file (value specified for the WORKDIR label in the COMMAND section), correct the error, and then re-execute the command.

KAVF14273-I

The time-stamp file was initialized. (*timestamp-file-name*)

A new timestamp file was created and management information was initialized. This message is displayed the first time the command is executed with the `-lasttime` option specified (when the specified timestamp file does not exist). This message is displayed only when the `-v` option is specified in the command.

(S)

Terminates the command normally.

(O)

Differential information is output the next time the command is executed. Re-execute the command with the same timestamp file specified.

KAVF14274-E

The time-stamp file cannot be updated. (*timestamp-file-name*)

An unexpected error occurred when the timestamp file was updated. Because the system was unable to store the command result, correct differential records may not be reported the next time the command is executed (records may be duplicated in reports).

(S)

Cancels execution of the command.

(O)

Check the status of the path indicated by *timestamp-file-name* and then correct the error.

KAVF14275-I

Number of processing records: *processed-records-count*

This message shows the number of records reported by the command. This message is displayed only when the `-v` option was specified in the command.

(S)

Resumes processing.

KAVF14276-W

The specified output format column value is invalid.
(*specified-value*)

The value specified for a COLUMN label is invalid in the FORMAT section of the environment parameters file.

(S)

Ignores the value of the corresponding column and resumes processing (fewer columns are displayed). This command is not cancelled as a result of this warning.

(O)

Specify a valid field ID in the `COLUMN` label of the `FORMAT` section in the environment parameters file. For details about the field ID, see *10. Commands*. If you do not specify an environment parameters file with the `-cnf` option, the default environment parameters file (*command-name.ini* in the current directory) is referenced.

KAVF14277-I

The time-stamp file was updated. (*timestamp-file-name*)

The timestamp file was updated. This message is displayed only when the `-v` option was specified in the command.

(S)

Terminates the command normally.

KAVF14278-E

The time-stamp file format is invalid. (*name-of-erroneous-timestamp-file*)

The file specified with the `-lasttime` option is not a timestamp file. If the indicated file name is a relative path, it is relative to the work directory for the command. If you have specified a different work directory in the environment parameters file, it may be different from the current directory.

(S)

Cancels execution of the command.

(O)

Specify the correct timestamp file and then re-execute the command. If the timestamp file management information has been damaged due to a file access error, delete the timestamp file and re-create it.

Chapter

12. Error Handling Procedures

This chapter explains how to handle errors that may occur while you are using Performance Management products. This chapter is concerned principally with handling errors relating to a PFM - Agent. For details about error handling for the entire Performance Management system, see the chapter that describes error handling procedures in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

- 12.1 Error handling procedures
- 12.2 Troubleshooting
- 12.3 Log information
- 12.4 Data to be collected in the event of an error
- 12.5 Data collection procedure
- 12.6 Detecting problems within Performance Management
- 12.7 Performance Management system error recovery

12.1 Error handling procedures

This section describes the procedures for handling errors that occur while you are using Performance Management products.

Check the event

Check the following:

- Event when the error occurred
- Contents of any messages that have been displayed
- Log information (such as common message log)

For details about the messages and how to respond to each message, see *11. Messages*. For details about the log information that is output by the Performance Management products, see *12.3 Log information*.

Collect data

Collect data to determine the cause of the error. For details about how to collect the necessary data, see *12.4 Data to be collected in the event of an error* and *12.5 Data collection procedure*.

Determine the cause

Use the collected data to determine the cause and extent of the error, as well as the range of its consequences.

12.2 Troubleshooting

This section explains how to conduct troubleshooting while you are using Performance Management products. If an error occurs while you are using a Performance Management product, you should first check to see if any of the events described in this section have occurred.

The following table lists the principal errors that may occur while you are using a Performance Management product.

Table 12-1: Errors

Classification	Nature of problem	Section
Setting up or starting service	<ul style="list-style-type: none"> A Performance Management program service does not start. It takes a long time for a service to start once startup is requested. Immediately after a Performance Management program service is stopped, another program service is started, but communication does not function correctly. After the message <code>The disk capacity is insufficient</code> is displayed, the Master Store or Agent Store service stops. 	12.2.1
Executing commands	<ul style="list-style-type: none"> When the <code>jpctool service list (jpctr1 list)</code> command is executed, the names of services that are not operating are output. When the <code>jpctool db dump (jpctr1 dump)</code> command is executed, data other than the specified Store data is output. 	12.2.2
Report definitions	<ul style="list-style-type: none"> There is a time period that is not displayed in historical reports. 	12.2.3
Alarm definitions	<ul style="list-style-type: none"> The program defined for action execution does not function correctly. An alarm event is not displayed. 	12.2.4
Collecting and managing performance data	<ul style="list-style-type: none"> The size of the PFM - Agent's Store database does not become smaller even though the data retention period was shortened. The message <code>Illegal data was detected in the Store database</code> is output to the common message log. 	12.2.5

12.2.1 Setting up or starting services

Handle errors related to setup or service startup as described below.

(1) A Performance Management program service does not start

Causes and solutions:

- PFM - Manager is not active.

If PFM - Manager and PFM - Agent are both on the same host, the PFM - Agent services cannot start if PFM - Manager is not active. Determine whether the PFM - Manager service has started, and start it if it has not. For details about how to start services, see the chapter that describes startup and termination of Performance Management in the *Job Management Partner 1/Performance Management User's Guide*.

- The same port number is set for multiple Performance Management program services.

When the same port number is set for multiple Performance Management program services, none of the Performance Management program services can be started. The default is for the system to assign port numbers automatically, in which case there will not be any duplicated port numbers. If you specified specific port numbers for any Performance Management program services during Performance Management setup, check the specified port numbers. If you specified the same port number for more than one Performance Management program service, specify different port numbers. For details about how to set port numbers, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

- There is an error in the settings for the Store database directory.

If any of the following directories is inaccessible or does not exist, the Agent Store service cannot start; check the specified directory names and settings and correct any errors:

- Store database directory
- Store database backup directory
- Store database export directory
- Store database partial backup directory (applicable to Store version 2.0)
- Store database import directory (applicable to Store version 2.0)

If you specify any of these directories for multiple Agent Store services, the Agent Store services cannot start; check the specified directory names and settings and correct any errors.

- The host name of the machine was changed using a non-permitted procedure.

For details about how to rename a host on a machine, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*. If you use a nonstandard procedure to rename a host, the Performance Management program services may not start.

- An error occurred on the service control manager.

If you execute the `jpcspm start (jpcstart)` command in Windows, the error message `An error occurred in the Windows service control manager` might be displayed and service startup might fail. If this occurs, re-execute the `jpcspm start (jpcstart)` command. If this event occurs frequently, edit the `jpccomm.ini` file to change the retry interval and retry count for service startup processing during execution of the `jpcspm start (jpcstart)` command.

For details about how to change the retry interval and retry count, see the chapter that describes startup and termination of Performance Management in the *Job Management Partner 1/Performance Management User's Guide*.

- The SAP system is inactive.

If you specified `DELAYCONNECT=N` during construction of the instance environment and the SAP system is inactive when connection is to be established with the SAP system, the Agent Collector service cannot start. Make sure that the SAP system is running. To start the Agent Collector service whether the SAP system is active, specify `DELAYCONNECT=Y`.

(2) It takes a long time for a service to start once startup is requested

It may take some time for a service to actually start once you execute the `jpcspm start (jpcstart)` command or when you start a service by choosing the **Service** icon. If this is due to one of the following reasons, the time required to start the service will be reduced when the service is started subsequently:

- If you use the standalone mode, it might take time for a service to start.
- When you start a service by restarting the system without specifying the setting for automatically stopping services during system shutdown, the indexes of the Store database may be rebuilt. If this happens, it may take extra time for services to start.
- During initial startup after a new Agent has been added, the indexes of the Store database are rebuilt. This may cause the service to take longer to start up.
- When the Store service is unable to perform normal termination processing for a reason such as a power interrupt, it may take extra time for services to start because the indexes of the Store database are rebuilt during the restart.

(3) Immediately after a Performance Management program service is stopped, another program service is started, but communication does not function correctly

Immediately after a Performance Management program service is stopped, another program service may be started that uses the same port that the stopped service was using. In such a case, communication may not function correctly. You can use either of the following techniques to avoid this problem:

- Fix the port numbers for the Performance Management program services.

Assign a fixed port number to each Performance Management program service. For details about how to set port numbers, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

- Set the TCP_TIMEWAIT value.

Set the TCP_TIMEWAIT value that specifies a connection wait time.

In HP-UX or AIX, specify a connection wait time of at least 75 seconds, as shown below:

- HP-UX: `tcp_time_wait_interval:240000`
- AIX: `tcp_timewait:5`

In Windows and Solaris, use the default connection wait time. The default value is as follows:

- Solaris: 4 minutes
- Windows Server 2003 or Windows Server 2008: 2 minutes

(4) After the message "The disk capacity is insufficient" is displayed, the Master Store or Agent Store service stops

If there is not enough free space on the disk used by the Store database, data storage into the Store database is interrupted. In such a case, the message `The disk capacity is insufficient` is displayed and then the Master Store or Agent Store service stops.

When this message is displayed, take one of the following actions:

- Provide sufficient disk space

Determine the required disk capacity for the Store database and change the Store database storage location to a disk with sufficient capacity. For details about how to determine the disk capacity required for the Store database, see *A. System Estimates*. For details about how to change the Store database storage location, see *2.4.1 Changing the performance data storage location* for Windows or *3.4.1 Changing the performance data storage location* for UNIX.

- Change the data retention condition for the Store database

Change the data retention condition for the Store database and adjust its maximum data capacity. For details about how to change the data retention condition for the Store database, see the chapter that describes management of operation monitoring data in the *Job Management Partner 1/Performance Management User's Guide*.

If the Master Store or Agent Store service does not start even after you have taken these actions, an unrecoverable logical conflict has occurred in the Store database. In such a case, restore the Store database from a backup and then start the Master Store or Agent Store service. If no backup is available, initialize the Store database and then start the Master Store or Agent Store service. To initialize the Store database, you must delete all the following files in the storage directory for the Store database:

- Files with extension `.DB`
- Files with extension `.IDX`

For details about the storage directory for the Store database, see 2.4.1 *Changing the performance data storage location* for Windows or 3.4.1 *Changing the performance data storage location* for UNIX.

12.2.2 Executing commands

Handle errors related to execution of Performance Management commands as described below.

(1) When the *jpctool service list (jpcctrl list)* command is executed, the names of services not operating are output

Possible causes and solutions:

- A Performance Management program was uninstalled without its service information being deleted

Service information for a Performance Management program remains in the database even after the program has been uninstalled. Execute the `jpctool service delete (jpcctrl delete)` command to delete the service information. For details about how to delete service information, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

- The host name of the machine was changed without deleting Performance Management program service information

If the host name of a machine was changed without deleting Performance Management program service information, the service information corresponding to service IDs that were associated with the previous host name remains in the database that the Master Manager service manages. Execute the `jpctool`

`service delete (jpcctrl delete)` command to delete the service information. For details about how to delete service information and how to rename hosts, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

(2) When the `jpctool db dump (jpcctrl dump)` command is executed, data other than the specified Store data is output

Specifying the same export file name for the same Master Store or Agent Store service in multiple executions of the `jpctool db dump (jpcctrl dump)` command causes the initial output results to be overwritten by the subsequent output results. Specify a different export file name each time you execute the `jpctool db dump (jpcctrl dump)` command for the same Master Store or Agent Store service. For details about how to export Store data, see the chapter that describes management of operation monitoring data in the *Job Management Partner 1/Performance Management User's Guide*.

12.2.3 Report definitions

This subsection describes how to handle problems that are related to report definitions for Performance Management.

(1) There is a time period that is not displayed in historical reports

If the current time of the system on which PFM - Agent is installed is changed to some future time, historical information from the period between the old time and the new time is not stored.

12.2.4 Alarm definitions

This section describes the procedures for handling problems in the alarm definitions of Performance Management.

(1) The program defined for action execution does not function correctly

The possible cause and action to be taken are as follows:

- PFM - Manager or the Action Handler service at the target host is not active

If PFM - Manager or the Action Handler service at the target host is inactive, actions cannot be executed. To execute actions, make sure that PFM - Manager and the Action Handler service at the target host are active.

(2) An alarm event is not displayed

The possible cause and action to be taken are as follows:

- PFM - Manager is not active.

If PFM - Manager is inactive, the system cannot issue alarm events from PFM - Agents correctly. To monitor alarm events, make sure that PFM - Manager is

active.

12.2.5 Collecting and managing performance data

Handle errors related to collection and management of Performance Management performance data as described below.

(1) The size of the PFM - Agent's Store database does not become smaller even though the data retention period was shortened

If the size of Store database version 1.0 has reached its maximum, shortening the data retention period does not reduce the file size.

In such a case, shorten the retention period, back up the Store database, and then restore the database.

For details about how to specify the data retention period, see the chapter that describes management of operation monitoring data in the *Job Management Partner 1/Performance Management User's Guide*. For details about how to back up and restore the Store database, see the chapter that describes backup and restore processing in the *Job Management Partner 1/Performance Management User's Guide*.

(2) The message "Illegal data was detected in the Store database" is output to the common message log

An unexpected service halt or machine shutdown may result in invalid data in the Store database. Correct this problem as described below:

- If the Store database has been backed up, restore it.
- If the Store database has not been backed up, stop the Agent Store service, delete the corresponding database file (*.DB file or *.IDX file), and then restart the service.

12.2.6 Other problems

You should check the existing circumstances when other errors occur. If a message is output, read its contents. For details about the log information that is output by Performance Management, see *12.3 Log information*.

If you cannot resolve an error by taking any of the steps described from Section *12.2.1 Setting up or starting services* through Section *12.2.5 Collecting and managing performance data*, or if an error occurs that is not described in these sections, collect data needed to investigate the error and contact the system administrator.

For details about the data you should collect and how to collect it, see *12.4 Data to be collected in the event of an error* and *12.5 Data collection procedure*.

12.3 Log information

When an error occurs with Performance Management, you should check the log information and investigate the problem. The following four types of log information are output during operation of Performance Management:

- System log
- Common message log
- Operation status log
- Trace log

This section describes the four types of log information and the log options that can be set for each type.

12.3.1 Log information types

(1) *System log*

The system log contains log information that reports the system status and errors that occurred. Performance Management outputs the system log to the following log file:

- Windows
Event log file
- UNIX
syslog file

For details about the output formats, see the chapter that describes log information in the manual *Job Management Partner 1/Performance Management Reference*.

Notes about logical host operation

In addition to the system log for Performance Management, you need the log information for the cluster software in order to check information such as Performance Management control by the cluster software.

(2) *Common message log*

The common message log contains log information that reports the system status and errors that have occurred. The information output to this log is more detailed than the system log information. For details about the common message log's output destination file name and file size, see *12.3.2 Log files and directories*. For details about the output format, see the chapter that describes log information in the manual *Job Management Partner 1/Performance Management Reference*.

Notes about logical host operation

For Performance Management under logical host operation, the common message log is output to the shared disk. Because log files on the shared disk are inherited together with the system during failover, messages continue to be recorded in the same log file.

(3) Operation status log

The operation status log is the log information that is output by PFM - Web Console. For details about the name and size of the operation status log file, see the chapter that describes error handling procedures in the *Job Management Partner 1/Performance Management User's Guide*. For details about the output format, see the chapter that describes log information in the manual *Job Management Partner 1/Performance Management Reference*.

(4) Trace log

Whenever an error occurs, the trace log contains log information that is needed to investigate the cause of the error or to determine the processing time required by each process.

The trace log is output to a log file for the particular Performance Management program service.

Notes about logical host operation

For Performance Management under logical host operation, the trace log is output to the shared disk. Because log files on the shared disk are inherited together with the system during failover, messages continue to be recorded in the same log file.

12.3.2 Log files and directories

This section describes the log information that is output from Performance Management. For details about the name and size of the file to which the operation status log information is output, see the chapter that describes error handling procedures in the *Job Management Partner 1/Performance Management User's Guide*.

(1) Common message log

This section describes the common message log, which is one of the types of log information for Performance Management. The tables below list, for each OS, the service name or control name and the log file name for the log output source file, as well as the amount of disk space used.

Table 12-2: File name of the common message log (Windows)

Type of log information	Output source	File name	Disk space used ^{#1} (KB)
Common message log	Performance Management	<i>installation-folder</i> \log\jpclog{01 02} ^{#2}	2,048 (2)
		<i>installation-folder</i> \log\jpclogw{01 02} ^{#2}	2,048 (2)
Common message log (for logical host operation)	Performance Management for logical host operation	<i>environment-directory</i> ^{#3} \jplpc\log\jpclog{01 02} ^{#2}	2,048 (2)
		<i>environment-directory</i> ^{#3} \jplpc\log\jpclogw{01 02} ^{#2}	2,048 (2)

#1

The value in parentheses is the number of log files that can be created for a single service. For example, 2,048 (2) indicates that a maximum of two log files, each with a size of 2,048 KB, can be created. In this case, the total available disk space is 4,096 KB.

#2

The value 01 or 02 is appended to the file name of the common message log.

Sequential file method (jpclog)

Log information is first output to the log file whose name ends with 01. When the maximum log file size is reached, the suffix at the end of the log file name is changed from 01 to 02, and a new log file with the 01 suffix is created. Log information is then output to the new 01 log file. If a log file with a name ending in 02 already exists, that log file is overwritten when the 01 suffix is changed to 02. The most recent log information is always output to the log file with a 01 suffix.

Wraparound file method (jpclogw)

Log information is first output to the log file whose name ends with 01. When the maximum log file size is reached, a new log file with a 02 suffix is created. Log information is then output to the new 02 log file. If a log file with a name ending in 02 already exists, all data is deleted from it and log information is output from the beginning of the file. Thereafter, the log files are used alternately.

For details about how to output log information to log files, see the chapter that describes detection of Performance Management failures in the *Job Management Partner 1/Performance Management User's Guide*.

#3

The environment directory is on the shared disk that was specified when the logical host was created.

Table 12-3: File name of the common message log (UNIX)

Type of log information	Output source	File name	Disk space used ^{#1} (KB)
Common message log	Performance Management	<i>/opt/jp1pc/log/jpclog{01 02}</i> ^{#2}	2,048 (2)
		<i>/opt/jp1pc/log/jpclogw{01 02}</i> ^{#2}	2,048 (2)
Common message log (for logical host operation)	Performance Management for logical host operation	<i>environment-directory</i> ^{#3} / <i>jp1pc/log/jpclog{01 02}</i> ^{#2}	2,048 (2)
		<i>environment-directory</i> ^{#3} / <i>jp1pc/log/jpclogw{01 02}</i> ^{#2}	2,048 (2)

#1

The value in parentheses is the number of log files that can be created for a single service. For example, 2,048 (2) indicates that a maximum of two log files, each with a size of 2,048 KB, can be created. In this case, the total available disk space is 4,096 KB.

#2

The value 01 or 02 is appended to the file name of the common message log.

Sequential file method (*jpclog*)

Log information is first output to the log file whose name ends with 01. When the maximum log file size is reached, the suffix at the end of the log file name is changed from 01 to 02, and a new log file with the 01 suffix is created. Log information is then output to the new 01 log file. If a log file with a name ending in 02 already exists, that log file is overwritten when the 01 suffix is changed to 02. The most recent log information is always output to the log file with a 01 suffix.

Wraparound file method (*jpclogw*)

Log information is first output to the log file whose name ends with 01. When the maximum log file size is reached, a new log file with a 02 suffix is created. Log information is then output to the new 02 log file. If a log file with a name ending in 02 already exists, all data is deleted from it and log information is output from the beginning of the file. Thereafter, the log files

are used alternately.

For details about how to output log information to log files, see the chapter that describes detection of Performance Management failures in the *Job Management Partner 1/Performance Management User's Guide*.

#3

The environment directory is on the shared disk that was specified when the logical host was created.

(2) Trace log

This section describes the trace log, which is one of the types of log information for Performance Management. The tables below list, for each OS, the service names or control names that are the output sources of PFM - Agent trace logs, as well as the names of the storage folders.

Table 12-4: Names of the trace log storage folders (Windows)

Type of log information	Output source	Folder name
Trace log	Agent Collector service	<i>installation-folder</i> \bin\action\log\
	Agent Store service	<i>installation-folder</i> \tools\log\
Trace log (for logical host operation)	Agent Collector	<i>environment-directory</i> #\jplpc\agtm\agent\instance-name\log\
	Agent Store	<i>environment-directory</i> #\jplpc\agtm\store\instance-name\log\

#

The environment directory is on the shared disk that was specified when the logical host was created.

Table 12-5: Names of the trace log storage directories (UNIX)

Type of log information	Output source	Directory name
Trace log	Agent Collector service	/opt/jplpc/bin/action/log/
	Agent Store service	/opt/jplpc/tools/log/
Trace log (for logical host operation)	Agent Collector	<i>environment-directory</i> #/jplpc/agtm/agent/instance-name/log/
	Agent Store	<i>environment-directory</i> #/jplpc/agtm/store/instance-name/log/

#

The environment directory is on the shared disk that was specified when the logical host was created.

12.4 Data to be collected in the event of an error

If the appropriate action described in *12.2 Troubleshooting* is not successful in correcting the error, you should collect necessary data and contact the system administrator to determine the cause of the error. This section describes the data that should be collected in the event of an error.

Performance Management provides commands for collecting the needed data in batch mode. Use the `jpcras` command to collect PFM - Agent data. The following tables indicate the data that can be collected by the `jpcras` command.

Note

The data collected by the `jpcras` command depends on the options you specify when you execute the command. For details about the command's options and the data that can be collected, see the chapter that describes commands in the *Job Management Partner 1/Performance Management User's Guide*.

Notes about logical host operation

The following notes apply to logical host operation:

- During logical host operation, Performance Management log information is stored on the shared disk. If the shared disk is placed online (Windows) or mounted (UNIX), you can use the `jpcras` command to also collect the log information on the shared disk in batch mode.
- To evaluate problems during failover, you need the information existing before and after the failover. This means that you need the information about both executing and standby systems.

To examine Performance Management for logical host operation, information about the cluster software is necessary. Because Performance Management for logical host operation is started and terminated from the cluster software, the behavior of the cluster software must be compared with the behavior of Performance Management.

12.4.1 In Windows

(1) Log information about the OS

The following OS-related information must be collected:

Type of information	Overview	Default file name	Collected by the <code>jpcras</code> command?
System log	Windows event log	N/A	Y

Type of information	Overview	Default file name	Collected by the jpcras command?
Process information	List of processes	N/A	Y
System file	hosts file	<i>system-folder</i> \system32\drivers\etc\hosts	Y
	services file	<i>system-folder</i> \system32\drivers\etc\services	Y
OS information	System information	N/A	Y
	Network status	N/A	Y
	Host name	N/A	Y
Dump information	Dr. Watson log ^{#1}	<i>system-drive</i> \Documents and Settings\All Users\Application Data\Microsoft\Dr Watson\drwtsn32.log ^{#2} <i>system-drive</i> \Documents and Settings\All Users\Application Data\Microsoft\Dr Watson\user.dump ^{#2}	Y

Legend:

Y: Can be collected.

N/A: Not applicable.

#1

In Windows Server 2008, **Dr. Watson** has been changed to **Problem Reports and Solutions**.

#2

If your setup provides for output of log files to a different folder, make sure that you collect the data from the correct folder.

(2) Information about Performance Management

You should collect information about Performance Management, as listed below. In the case of a network error, you should also collect applicable files from the connection-destination machine.

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Type of information	Overview	Default file name	Collected by the jpcras command?
Common message log	Message log output from Performance Management (sequential file method)	<i>installation-folder</i> \log\jpclog{01 02} ^{#1}	Y
	Message log output from Performance Management (wraparound file method)	<i>installation-folder</i> \log\jpclogw{01 02} ^{#1}	Y
Common message log (for logical host operation)	Message log output from Performance Management for logical host operation (sequential file method)	<i>environment-directory</i> ^{#2} \jplpc\log\jpclog{01 02} ^{#1}	Y
	Message log output from Performance Management for logical host operation (wraparound file method)	<i>environment-directory</i> ^{#2} \jplpc\log\jpclogw{01 02} ^{#1}	Y
Configuration information	Each configuration information file	N/A	Y
	Output results of the jpc tool service list (jpcctrl list) command	N/A	Y
Version information	Product version	N/A	Y
	Historical information	N/A	Y

Type of information	Overview	Default file name	Collected by the jpcras command?
Database information	Agent Store service	<ul style="list-style-type: none"> • For Store version 1.0 <i>installation-folder\agtm\store\instance-name*.DB</i> <i>installation-folder\agtm\store\instance-name*.IDX</i> • For Store version 2.0 <i>installation-folder\agtm\store\instance-name\STPD\</i> <i>installation-folder\agtm\store\instance-name\STPI\</i> The following files under the above folders: *.DB *.IDX 	Y
Database information (for logical host operation)	Agent Store service for logical host operation	<ul style="list-style-type: none"> • For Store version 1.0 <i>environment-directory^{#2}\jplpc\agtm\store\instance-name*.DB</i> <i>environment-directory^{#2}\jplpc\agtm\store\instance-name*.IDX</i> • For Store version 2.0 <i>environment-directory^{#2}\jplpc\agtm\store\instance-name\STPD\</i> <i>environment-directory^{#2}\jplpc\agtm\store\instance-name\STPI\</i> The following files under the above folders: *.DB *.IDX 	Y
Trace log	Trace information for each Performance Management program service	N/A ^{#3}	Y
Install log ^{#4}	Message log during installation (for Windows Server 2003)	%TEMP%\pfm_inst.log All files under the following folder: %windir%\TEMP\HCDINST	N
	Message log during installation (for Windows Server 2008)	All files under the %windir%\TEMP\HCDINST folder	N

Type of information	Overview	Default file name	Collected by the jpcras command?
Command information	Environment parameters file	<i>installation-folder\agtm\agent\instance-name\jr3alget.ini</i> <i>installation-folder\agtm\agent\instance-name\jr3slget.ini</i>	Y
	Trace information	N/A	Y
	Timestamp file	N/A	Y
	Extraction results file	<i>installation-folder\agtm\agent\instance-name\log\ALERT</i> <i>installation-folder\agtm\agent\instance-name\log\SYSLOG</i>	Y ^{#5}
Command information (for logical host operation)	Environment parameters file	<i>environment-directory^{#2}\jplpc\agtm\agent\instance-name\jr3alget.ini</i> <i>environment-directory^{#2}\jplpc\agtm\agent\instance-name\jr3slget.ini</i>	Y
	Trace information	--	Y
	Timestamp file	--	Y
	Extraction results file	<i>environment-directory^{#2}\jplpc\agtm\agent\instance-name\log\ALERT</i> <i>environment-directory^{#2}\jplpc\agtm\agent\instance-name\log\SYSLOG</i>	Y ^{#5}

Legend:

Y: Can be collected.

N: Cannot be collected.

N/A: Not applicable.

#1

For details about how to output log information to log files, see the chapter that describes detection of Performance Management failures in the *Job Management Partner 1/Performance Management User's Guide*.

#2

The environment directory is on the shared disk that was specified when the logical host was created.

#3

For details about the trace log storage folder, see *12.3.2 Log files and directories*.

#4

Collect this log information if installation fails.

#5

If the default storage location is changed, the `jpcras` command cannot collect the information. Collect the information manually.

For the storage location of the extraction results file, see the `EXTRACTFILE` section in *5.3.2 Settings* and the `EXTRACTFILE` section in *6.3.2 Settings*.

(3) Operation information

You should collect the following information about the operation being performed when the error occurred:

- Details of the operation
- Time the error occurred
- Machine configuration (the OS version, host name, and PFM - Manager and PFM - Agent configuration, and so on.)
- Whether the problem is replicable
- Performance Management user name used during logon, if the user has logged on from PFM - View

(4) Error information on screen displays

You should obtain printouts of the following:

- The active screen when the application error occurred
- The error message dialog box (including the contents of detail information if displayed)
- The Command Prompt window or the Administrator Console window, if the error occurred during command execution

(5) User dump (for Windows Server 2008)

In Windows Server 2008, if a Performance Management process is terminated due to an application error, collect a user dump.

(6) Collecting a problem report (for Windows Server 2008)

In Windows Server 2008, if a Performance Management process is terminated due to an application error, collect a problem report.

(7) Other information

You should also collect the following information:

- The contents of **System** and **Application** in the Event Viewer window of Windows (in Windows Server 2003 or Windows Server 2008)
- The contents of **System Information**, which is displayed by choosing **Accessories** and then **System Tools** (in Windows Server 2003 or Windows Server 2008)
- The command arguments that were specified, if the error occurred during command execution

12.4.2 In UNIX

(1) Log information about the OS

The following OS-related information must be collected:

Type of information	Overview	Default file name	Collected by the jpcras command?
System log	syslog	<ul style="list-style-type: none"> • In HP-UX /var/adm/syslog/syslog.log • In Solaris /var/adm/messages • In AIX N/A 	Y ^{#1}
Process information	List of processes	N/A	Y
System file	hosts file	/etc/hosts	Y
		/etc/inet/ipnodes ^{#2}	Y ^{#3}
	services file	/etc/services	Y
OS information	Patch information	N/A	Y
	Kernel information	N/A	Y
	Version information	N/A	Y
	Network status	N/A	Y
	Environment variable	N/A	Y
	Host name	N/A	Y
Dump information	core file ^{#4}	N/A	Y

Legend:

Y: Can be collected.

N/A: Not applicable.

#1

The information cannot be collected if the system is set to output the information to a location other than the default path and file. In such a case, collect the information manually.

#2

The `/etc/inet/ipnodes` file exists only in Solaris. Collect this file together with the `/etc/hosts` file.

#3

The information can be collected only by the `jpccras` command for PFM - Manager 09-00 or later or PFM - Base 09-00 or later.

#4

In HP-UX 11i V3 (IPF), the `coreadm` command enables you to rename a `core` file. However, if the new file name does not begin with `core`, it cannot be collected by the `jpccras` command. In such a case, you must collect the file manually.

(2) Information about Performance Management

You need to collect information about Performance Management, as listed below. In the case of a network error, you also need to collect applicable files from the connection-destination machine.

Type of information	Overview	Default file name	Collected by the <code>jpccras</code> command?
Common message log	Message log output from Performance Management (sequential file method)	<code>/opt/jp1pc/log/jpclog{01 02}#1</code>	Y
	Message log output from Performance Management (wraparound file method)	<code>/opt/jp1pc/log/jpclogw{01 02}#1</code>	Y

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Type of information	Overview	Default file name	Collected by the jpcras command?
Common message log (for logical host operation)	Message log output from Performance Management for logical host operation (sequential file method)	<i>environment-directory</i> ^{#2} / <i>jp1pc/log/jpclog</i> {01 02} ^{#1}	Y
	Message log output from Performance Management for logical host operation (wraparound file method)	<i>environment-directory</i> ^{#2} / <i>jp1pc/log/jpclogw</i> {01 02} ^{#1}	Y
Configuration information	Each configuration information file	N/A	Y
	Output results of the <i>jpctool service list</i> (<i>jpctr1 list</i>) command	N/A	Y
Version information	Product version	N/A	Y
	Historical information	N/A	Y
Database information	Agent Store service	<ul style="list-style-type: none"> • For Store version 1.0 <i>/opt/jp1pc/agtm/store/instance-name/*.DB</i> <i>/opt/jp1pc/agtm/store/instance-name/*.IDX</i> • For Store version 2.0 <i>/opt/jp1pc/agtm/store/instance-name/STPD/</i> <i>/opt/jp1pc/agtm/store/instance-name/STPI/</i> The following files under the above directories: <i>*.DB</i> <i>*.IDX</i> 	Y

Type of information	Overview	Default file name	Collected by the jpcras command?
Database information (for logical host operation)	Agent Store service for logical host operation	<ul style="list-style-type: none"> For Store version 1.0 <i>environment-directory</i>^{#2}/<i>jp1pc/agt</i>m/store/<i>instance-name</i>/*.DB <i>environment-directory</i>^{#2}/<i>jp1pc/agt</i>m/store/<i>instance-name</i>/*.IDX For Store version 2.0 <i>environment-directory</i>^{#2}/<i>jp1pc/agt</i>m/store/<i>instance-name</i>/STPD/ <i>environment-directory</i>^{#2}/<i>jp1pc/agt</i>m/store/<i>instance-name</i>/STPI/ The following files under the above directories: *.DB *.IDX 	Y
Trace log	Trace information for each Performance Management program service	N/A ^{#3}	Y
Install log ^{#4}	Standard log of Hitachi Program Product Installer	/etc/.hitachi/.hitachi.log /etc/.hitachi/.hitachi.log{01 02 03 04 05} /etc/.hitachi/.install.log /etc/.hitachi/.install.log{01 02 03 04 05}	N
Command information	Environment parameters file	/opt/jp1pc/agt/m/agent/ <i>instance-name</i> / jr3alget.ini /opt/jp1pc/agt/m/agent/ <i>instance-name</i> / jr3slget.ini	Y
	Trace information	N/A	Y
	Timestamp file	N/A	Y
	Extraction results file	/opt/jp1pc/agt/m/agent/ <i>instance-name</i> /log/ ALERT /opt/jp1pc/agt/m/agent/ <i>instance-name</i> /log/ SYSLOG	Y ^{#5}
Command information (for logical host operation)	Environment parameters file	<i>environment-directory</i> ^{#2} / <i>jp1pc/agt</i> m/agent/ <i>instance-name</i> /jr3alget.ini <i>environment-directory</i> ^{#2} / <i>jp1pc/agt</i> m/agent/ <i>instance-name</i> /jr3slget.ini	Y

Type of information	Overview	Default file name	Collected by the jpcras command?
	Trace information	--	Y
	Timestamp file	--	Y
	Extraction results file	<i>environment-directory</i> ^{#2} / <i>jjp1pc/agt/agent/instance-name</i> /log/ALERT <i>environment-directory</i> ^{#2} / <i>jjp1pc/agt/agent/instance-name</i> /log/SYSLOG	Y ^{#5}

Legend:

Y: Can be collected.

N: Cannot be collected.

N/A: Not applicable.

#1

For details about how to output log information to log files, see the chapter that describes detection of Performance Management failures in the *Job Management Partner 1/Performance Management User's Guide*.

#2

The environment directory is on the shared disk that was specified when the logical host was created.

#3

For details about the trace log storage directory, see *12.3.2 Log files and directories*.

#4

Collect this log information if installation fails.

#5

If the default storage location is changed, the jpcras command cannot collect the information. Collect the information manually.

For the storage location of the extraction results file, see the EXTRACTFILE section in *5.3.2 Settings* and the EXTRACTFILE section in *6.3.2 Settings*.

(3) Operation information

You should collect the following information about the operation being performed when the error occurred:

- Details of the operation
- Time the error occurred
- Machine configuration (the OS version, host name, and PFM - Manager and PFM - Agent configuration, and so on.)
- Whether the problem is replicable
- Performance Management user name used during logon, if the user has logged on from PFM - View

(4) Error information

You should obtain the following error information:

- Messages output to the console, if the error occurred during command execution

(5) Other information

You should also collect the following information:

- Command arguments that were specified, if the error occurred during command execution

12.5 Data collection procedure

This section explains how to collect data in the event of an error.

12.5.1 In Windows

(1) *Collecting dump information (for Windows Server 2008)*

To collect dump information in a Windows Server 2008 environment:

1. Open the Task Manager.
2. Choose the **Processes** tab.
3. Right-click the name of the process whose dump is to be collected, and then choose **Create Dump File**.

A dump file is stored in the following folder:

```
system-drive\Users\user-name\AppData\Local\Temp
```

4. Collect the dump file from the folder in step 3.

If you have changed the environment variable settings in such a manner that dump files are output to a different folder, collect the dump file from the appropriate folder.

(2) *Executing the data collection command*

Use the `jpcras` command to collect data needed to determine the cause of an error (note that an OS user with the Administrators permission must execute the procedure described below).

To execute the data collection command:

1. Log on to the host where the service subject to this data collection is installed.
2. At the command prompt, execute the following command to enable the extension function of the command interpreter:

```
cmd /E:ON
```

3. Specify in the `jpcras` command the data to be collected and the storage folder for the data, and then execute the command.

The following `jpcras` command stores all the available information in the

`c:\tmp\jpc\agt` folder:

```
jpcras c:\tmp\jpc\agt all all
```

When you execute the `jpcras` command, the `jpctool service list -id * -host * (jpcctrl list * host=*)` command is executed internally in order to obtain a list of PFM services and check their activity status. If there is a firewall

between the host where the command is executed and the host for the Performance Management system, or if the system configuration is large, it might take time to execute the `jpctool service list -id * -host * (jpcctrl list * host=*)` command. If desirable, you can reduce the command execution time by suppressing execution of the `jpctool service list -id * -host * (jpcctrl list * host=*)` command. To do this, specify 1 in the `JPC_COLCTRLNOHOST` environment variable.

For details about the `jpcras` command, see the chapter that describes commands in the manual *Job Management Partner 1/Performance Management Reference*.

Notes about execution in a Windows Server 2008 environment

If the OS's user account control function (UAC) is enabled, a user account control dialog box might be displayed during command execution. If the dialog box is displayed, click the **Continue** button to resume data collection. If you click the **Cancel** button, data collection will be canceled.

(3) Executing the data collection command (for logical host operation)

Performance Management information for logical host information is on the shared disk and must be collected in both executing and standby systems.

You use the `jpcras` command to collect information needed to check the cause of a problem. This subsection describes how to execute the data collection command. This procedure must be executed by an OS user with the `Administrators` permission.

To execute the data collection command for logical host operation:

1. Place the shared disk online.

Information about the logical host is stored on the shared disk. At the executing node, make sure that the shared disk is online and then collect the information.

2. In both executing and standby systems, execute the `jpcras` command specifying the information to be collected and its storage folder.

The following example stores all the information collectible by the `jpcras` command in the `c:\tmp\jpc\agt` folder:

```
jpcras c:\tmp\jpc\agt all all
```

Executing the `jpcras` command without the `lhost` argument specified collects all the Performance Management information on the physical and logical hosts at the node. If there is a Performance Management in the logical host environment, the log files on the shared disk are acquired.

If the `jpcras` command is executed at a node where the shared disk is offline, files cannot be acquired from the shared disk, but the command terminates normally without resulting in an error.

Note

Execute the data collection command at both executing and standby nodes to collect information. To evaluate an event before and after failover, you need the information for both executing and standby systems.

For details about the `jpcras` command, see the chapter that describes commands in the manual *Job Management Partner 1/Performance Management Reference*.

3. Collect information about the cluster software.

This information is needed to determine whether the problem occurred in the cluster software or Performance Management. Collect the information that provides details about control requests, such as startup and termination of Performance Management from the cluster software, and their results.

(4) Collecting the Windows event log

In the Windows Event Viewer window, output the Windows event log to a file.

(5) Checking information about the operation

You should check and save information about the operation being performed when the error occurred; the following is the information that you should check and save:

- Details of the operation
- Time the error occurred
- Machine configuration (the OS version, host name, and PFM - Manager and PFM - Agent configuration, and so on)
- Whether the problem is replicable
- Performance Management user name used during logon, if the user has logged on from PFM - View

(6) Collecting error information on screen displays

You should obtain printouts of the following:

- The active screen when the application error occurred
- The error message dialog box

Also print a copy of any detailed information.

- The Command Prompt window or the Administrator Console window, if the error occurred during command execution

In Windows Server 2003 or Windows Server 2008, to print the Command Prompt window, specify the following settings in the Command Prompt Properties window:

- **Edit options** on the **Options** page

Select **Simple edit mode**.

- **Layout** page

For **Window buffer size**, set **Height** to 500.

(7) **Other information**

Common to all OSs

- The command arguments that were specified, if the error occurred during command execution
- The contents of **System Information**, which is displayed by choosing **Accessories** and then **System Tools**

In Windows Server 2003

- The contents of **System** and **Application** in the Event Viewer window of Windows

In Windows Server 2008

- The contents of **System** and **Application** in **Windows Logs** located in the left-hand pane of the Event Viewer window of Windows

12.5.2 In UNIX

(1) **Executing the data collection command**

Use the `jpccras` command to collect the data needed to determine the cause of an error (note that the procedure described below must be executed by an OS user with the root permission).

To execute the data collection command:

1. Log on to the host where the service subject to this data collection is installed.
2. Specify in the `jpccras` command the data to be collected and the storage directory for the data, and then execute the command.

The following `jpccras` command stores all the available information in the `/tmp/jpc/agt` directory:

```
jpccras /tmp/jpc/agt all all
```

The data collected by the data collection command can be stored in the specified directory in a compressed format by using either the `tar` or the `compress` command. Example file name:

```
jpccrasYYMMDD.tar.z
```

The date is added at the location indicated by `YYMMDD`.

When you execute the `jpccras` command, the `jpctool service list -id *`

-host * (jpcctrl list * host=*) command is executed internally in order to obtain a list of PFM services and check their activity status. If there is a firewall between the host where the command is executed and the host for the Performance Management system, or if the system configuration is large, it might take time to execute the `jpctool service list -id * -host * (jpcctrl list * host=*)` command. If desirable, you can reduce the command execution time by suppressing execution of the `jpctool service list -id * -host * (jpcctrl list * host=*)` command. To do this, specify 1 in the `JPC_COLCTRLNOHOST` environment variable.

For details about the `jpccras` command, see the chapter that describes commands in the manual *Job Management Partner 1/Performance Management Reference*.

(2) Executing the data collection command (for logical host operation)

Performance Management information for logical host information is on the shared disk and must be collected in both executing and standby systems.

You use the `jpccras` command to collect information needed to check the cause of a problem. This subsection describes how to execute the data collection command. This procedure must be executed by an OS user with the `root` user permission.

To execute the data collection command for logical host operation:

1. Mount the shared disk.

Information about the logical host is stored on the shared disk. At the executing node, make sure that the shared disk is mounted and then collect the information.

2. In both executing and standby systems, execute the `jpccras` command specifying the information to be collected and its storage directory.

The following example stores all the information collectible by the `jpccras` command in the `/tmp/jpc/agt` directory:

```
jpccras /tmp/jpc/agt all all
```

The information collected by the data collection command is stored in the specified directory in the compressed format specified by the `tar` and `compress` commands. The file name is as follows:

```
jpccrasYYMMDD.tar.Z
```

`YYMMDD` is replaced with the date (year, month, date).

Executing the `jpccras` command without the `lhost` argument specified collects all the Performance Management information on the physical and logical hosts at the node. If there is a Performance Management in the logical host environment, the log files on the shared disk are acquired.

If the `jpccras` command is executed at a node where the shared disk is not mounted, files cannot be acquired from the shared disk, but the command

terminates normally without resulting in an error.

Note

Execute the data collection command at both executing and standby nodes to collect information. To evaluate an event before and after failover, you need the information for both executing and standby systems.

For details about the `jpcras` command, see the chapter that describes commands in the manual *Job Management Partner 1/Performance Management Reference*.

3. Collect information about the cluster software.

This information is needed to determine whether the problem occurred in the cluster software or Performance Management. Collect the information that provides details about control requests, such as startup and termination of Performance Management from the cluster software, and their results.

(3) Checking information about the operation

You should check and save information about the operation being performed when the error occurred; the following is the information that you should check and save:

- Details of the operation
- Time the error occurred
- Machine configuration (the OS version, host name, and PFM - Manager and PFM - Agent configuration, and so on.)
- Whether the problem is replicable
- Performance Management user name used during logon, if the user has logged on from PFM - View

(4) Collecting error information

You should collect the following error information:

- Messages output to the console, if the error occurred during command execution

(5) Other information

You should also collect the following information:

- Command arguments that were specified, if the error occurred during command execution

12.6 Detecting problems within Performance Management

Performance Management provides a health check function for detecting Performance Management problems. The health check function monitors the operating status of the monitoring agent as well as the host on which the monitoring agent is running, and displays the monitoring results on PFM - Web Console as a change in the status of the monitoring agent.

The automatic PFM service restart function enables you to automatically restart the PFM service if the PFM service has stopped abnormally for some reason and to periodically restart the PFM service.

To monitor the operating status of the monitoring agent by the health check function and automatically restart the PFM service by the automatic PFM service restart function, you use the status management function that enables you to check the detailed status of Performance Management services. Therefore, the version of the target monitoring agent must support the status management function and the status management function must be enabled. There are no prerequisite conditions for monitoring the operating status of the host.

You can also detect Performance Management problems by using JP1/Base (integrated system monitoring product) to monitor the Performance Management log files. The system administrator can then detect a problem, identify its cause, and take appropriate action for recovery.

For details about detection of Performance Management problems, see the chapter that describes detection of Performance Management problems in the *Job Management Partner 1/Performance Management User's Guide*.

12.7 Performance Management system error recovery

If the Performance Management server fails, you must use backup files to restore the normal status that existed before the system error occurred.

For details about how to restore the system to the status it was in before a system error occurred, see the chapter that describes troubleshooting in the *Job Management Partner 1/Performance Management User's Guide*.

Appendixes

- A. System Estimates
- B. Kernel Parameters
- C. List of Identifiers
- D. List of Processes
- E. List of Port Numbers
- F. Properties of PFM - Agent for Enterprise Applications
- G. List of Files and Directories
- H. Migration Steps and Notes on Migration
- I. Version Compatibility
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A. System Estimates

Before configuring a system that will use PFM - Agent for Enterprise Applications, we recommend that you first estimate the performance of the computer to be used, to ensure that the computer is capable of running PFM - Agent for Enterprise Applications.

This appendix describes the items for which you should make estimates.

A.1 Memory requirements

The memory requirements vary depending on the setup conditions and on the conditions under which PFM - Agent for Enterprise Applications will be used.

(1) Memory requirements for the entire system

The following table provides general estimates of the memory requirements of PFM - Agent for Enterprise Applications. The *initial status* refers to the state in which one instance of PFM - Agent for Enterprise Applications is run.

Table A-1: Memory requirements

Status of PFM - Agent for Enterprise Applications	Required memory size (MB)				
	Windows Server 2003	Windows Server 2008	HP-UX	Solaris	AIX
Operation in initial status	37	44	70	60	40
Operation in other than initial status	$(37+a+b) \times \text{number-of-instances}$	$(44+a+b) \times \text{number-of-instances}$	$(70+a+b) \times \text{number-of-instances}$	$(60+a+b) \times \text{number-of-instances}$	$(40+a+b) \times \text{number-of-instances}$

Legend:

a: Amount of memory space required by the `jr3alget` command when the CCMS Alert Monitor Command (`PD_ALMX`) record is collected. For details about the memory requirements for commands, see *A.1(2) Memory requirements during command execution*.

b: Amount of memory space required by the `jr3slget` command when the System Log Monitor Command (`PD_SLMX`) record is collected. For details about the memory requirements for commands, see *A.1(2) Memory requirements during command execution*.

(2) Memory requirements during command execution

The following table shows the formulas for estimating memory requirements when the

commands provided by PFM - Agent for Enterprise Applications are executed.

Table A-2: Memory requirements during command execution

Command	Required memory size per command execution (MB)				
	Windows Server 2003	Windows Server 2008	HP-UX	Solaris	AIX
jr3alget	$15 + 0.005 \times a$	$17 + 0.005 \times a$	$12 + 0.006 \times a$	$16 + 0.005 \times a$	$8 + 0.006 \times a$
jr3slget	$13 + 0.001 \times b$	$15 + 0.001 \times b$	$12 + 0.002 \times b$	$16 + 0.001 \times b$	$8 + 0.001 \times b$

Legend:

a: Total number of CCMS alerts that have occurred at the target monitor

b: Total number of system logs that have occurred within the extraction period

The extraction period depends on whether the `-lasttime` option is specified:

- When the `-lasttime` option is specified: Time elapsed since the time of the previous execution of the command
- When the `-lasttime` option is omitted: Time elapsed since 00:00:00 on the date of command execution

A.2 Disk space requirements

The required disk space varies depending on the number of records that store performance data.

The following subsections provide estimates of the disk space required for PFM - Agent for Enterprise Applications.

(1) Disk space requirements for the entire system

The table below shows the estimated disk space requirements for the entire system.

The term *initial status* refers to the status in which only one instance of PFM - Agent for Enterprise Applications with Store version 2.0 is set up to collect only WorkLoad Summary Interval (PI) and Work Process Summary (PD) records.

Table A-3: Disk space requirements for the entire system

Status of PFM - Agent for Enterprise Applications	Disk space requirements (MB)			
	Windows Server 2003, Windows Server 2008	HP-UX	Solaris	AIX
During installation	30	50 ^{#1}	25 ^{#1}	30 ^{#1}
Operation in initial status	110	$a + 120$	$a + 120$	$a + 120$
Operation in other than initial status	$30 + 20 \times \text{number-of-instances} + b + c + W$	$a + 30 + 20 \times \text{number-of-instances} + b + c + W$	$a + 30 + 20 \times \text{number-of-instances} + b + c + W$	$a + 30 + 20 \times \text{number-of-instances} + b + c + W$

Legend:

a: Disk space for installation

b: Size of the system log information storage file (SYSLOG file) that is created in order to collect the System Log Monitor Command (PD_SLMX) record.^{#2} For details about setting the file size, see 5.3 *Environment parameters file*. If multiple instances are configured, this value is the sum of the sizes of the system log information storage files (SYSLOG files) for all instances.

c: Size of the CCMS alert information storage file (ALERT file) that is created in order to collect the CCMS Alert Monitor Command (PD_ALMX) record.^{#3} For details about setting the file size, see 6.3 *Environment parameters file*. If multiple instances are configured, this value is the sum of the sizes of the CCMS alert information storage files (ALERT files) for all instances.

W: Disk space required for the database. This is the sum of the disk space requirements for all record types. For details about the formula for estimating the disk space requirement for each record type, see A.2(2) *Disk space requirements for the Store database*. If multiple instances are configured, this value is the sum of the disk space requirements for the Store database for all instances.

#1

During installation, there is a temporary need for twice as much disk space as the size of the program.

#2

The default is 1 (megabyte).

The formula for estimating the size of the CCMS alert information storage file is shown below. Convert the obtained value (in bytes) to kilobytes (1 kilobyte = 1,024 bytes) and then set the resulting value. Note that 1 megabyte equals 1,024 kilobytes.

In Windows:

$$28 + 421 \times n \text{ (bytes)}$$

In UNIX:

$$27 + 420 \times n \text{ (bytes)}$$

Legend:

n : Number of rows of CCMS alerts to be collected

#3

The default is 1 (megabyte).

The formula for estimating the size of the system log information storage file is shown below. Convert the obtained value (in bytes) to kilobytes (1 kilobyte = 1,024 bytes) and then set the resulting value. Note that 1 megabyte equals 1,024 kilobytes.

In Windows:

$$28 + 308 \times n \text{ (bytes)}$$

In UNIX:

$$27 + 307 \times n \text{ (bytes)}$$

Legend:

n : Number of rows of system logs to be collected

(2) Disk space requirements for the Store database

The disk space requirements for the Store database depend on the Store version. This subsection describes the disk space requirements for each Store version.

Note

- When performance data is stored in the Store database, several fields are added. These fields are already included in the required disk space, so there is no need to estimate additional disk space for them.
 - Common fields added to each record

The following table describes the common fields that are added to each record:

PFM - View name	PFM - Manager name	Description
Agent Host	DEVICEID	Name of host where PFM - Agent is running
Agent Instance	PROD_INST	Instance name of PFM - Agent
Agent Type	PRODID	Product ID of PFM - Agent
Date	DATE	Record creation date (Greenwich Mean Time)
Date and Time	DATETIME	Combination of the date (DATE) and time (TIME) fields
Drawer Type	DRAWER_TYPE	For a record of the PI record type, the data summarization interval (minute, hour, day, week, month, year)
GMT Offset	GMT_ADJUST	Difference (in seconds) between Greenwich Mean Time and local time
Time	TIME	Record creation time (Greenwich Mean Time)

- Fields added when data of the PI record type is summarized

These are the fields whose PFM - View name and PFM - Manager name are suffixed with the character strings shown below. The following table shows the fields that are added when data of the PI record type is summarized:

PFM - View name	PFM - Manager name	Description
<i>PFM - View-name</i> (Total)	<i>PFM - Manager-name</i> _TOTAL	Total value for the field
<i>PFM - View-name</i> (Total)	<i>PFM - Manager-name</i> _TOTAL_SEC	Total value for the field (applicable to utime type)
<i>PFM - View-name</i> (Max)	<i>PFM - Manager-name</i> _HI	Maximum value for the field
<i>PFM - View-name</i> (Min)	<i>PFM - Manager-name</i> _LO	Minimum value for the field
--	<i>PFM - Manager-name</i> _COUNT	Number of records collected

- Fields added when data is exported from the Store database by the `jpctool db dump (jpcctrl dump)` command

When the `jpctool db dump (jpcctrl dump)` command is used to export data from the Store database, the fields listed below are output. These fields are also added when data is stored in the Store database. Do not use these fields in operations because they are reserved for internal use by PFM -

Agent for Enterprise Applications.

- *record-ID*_DATE_F
- *record-ID*_DEVICEID_F
- *record-ID*_DRAWER_TYPE_F
- *record-ID*_DRAWER_COUNT
- *record-ID*_DRAWER_COUNT_F
- *record-ID*_INST_SEQ
- *record-ID*_PRODID_F
- *record-ID*_PROD_INST_F
- *record-ID*_RECORD_TYPE
- *record-ID*_RECORD_TYPE_F
- *record-ID*_SEVERITY
- *record-ID*_SEVERITY_F
- *record-ID*_TIME_F
- *record-ID*_UOWID
- *record-ID*_UOWID_F
- *record-ID*_UOW_INST
- *record-ID*_UOW_INST_F
- *record-ID*_PFM - Manager-name_SEC
- *record-ID*_PFM - Manager-name_MSEC

- The number of instances for each record that collects historical data can be estimated using the following table.

Table A-4: Number of instances per record

Record name	Monitoring target of the record	Number of instances
Background Processing (PI_BTCP)	Status and processing efficiency of the background system in the entire SAP system	1 (because this is a single-instance record)
Background Service (PI_BTC)	Background service	1 (because this is a single-instance record)
CCMS Alert Monitor Command (PD_ALMX)	Result of extracting CCMS alert information in the SAP system	1 (because this is a single-instance record)

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Record name	Monitoring target of the record	Number of instances
Dialog Service (PI_DIA)	Dialog service	1 (because this is a single-instance record)
Enqueue Service (PI_ENQ)	Enqueuing service	1 (because this is a single-instance record)
SAP Buffer Summary (PI_BUFF)	Summary of the SAP buffer	1 (because this is a single-instance record)
SAP Instance Summary (PD_SRV)	Summary of the SAP instance	Number of instances (servers) in the connection-target SAP system (number of instances (servers) displayed by transaction code SM51)
SAP Memory Summary (PI_MEM)	Summary of the SAP memory	1 (because this is a single-instance record)
Spool Service (PI_SPO)	Spool service	1 (because this is a single-instance record)
System Log Monitor Command (PD_SLMX)	Result of extracting system log information in the SAP system	1 (because this is a single-instance record)
Update1 Service (PI_UPD1)	V1 update service	1 (because this is a single-instance record)
Update2 Service (PI_UPD2)	V2 update service	1 (because this is a single-instance record)
User defined Monitor (Perf.) (PI_UMP)	Monitor information	Number of MTEs that follow the specified monitor name and monitor set name, and whose MTE type is a performance attribute
Work Process Summary (PD)	Overview of a work process	Number of work processes in the connection-target instance (which can be verified by transaction code SM50)
WorkLoad Summary Interval (PI)	Workload time of the dialog task	1 (because this is a single-instance record)

- Note that when the `jpctool db backup (jpcctrl backup)` or `jpctool db dump (jpcctrl dump)` command is executed, disk space of approximately twice the space calculated in the following table is required for the back up files or export files.

(a) Disk space requirements for Store database version 1.0

This subsection describes the disk space requirements for the Store database (Store version 1.0).

All records of one record type are stored in the same file in the Store database. The following table shows the disk space requirements of the Store database (Store version 1.0) for both record types.

Table A-5: Disk space requirement for the Store database for each record type

Record type	Formula for determining disk space requirement (MB)
PI record type	$X_1 + \dots + X_a + 3,500 \times a$
PD record type	$Y_1 + \dots + Y_b + 700 \times b$

Legend:

X: Disk space for each record of the PI record type that collects historical data

X can be calculated by the following formula:

$$X = \{d \times e + (c + 1,900) \times \{(d \times e)/(65,250 - c) + 1\}^{\#1}\} \times f \times 1.5$$

Y: Disk space for each record of the PD record type that collects historical data

Y can be calculated by the following formula:

$$Y = \{d \times g + (c + 1,900) \times \{(d \times e)/(65,250 - c) + 1\}^{\#1} \times (g/e)^{\#2}\} \times 1.5$$

a: Number of records of the PI record type that collect historical data

b: Number of records of the PD record type that collect historical data

c: Size of the fixed part of each record that collects historical data^{#3}

d: Size of the variable part of each record that collect historical data^{#3}

e: Number of instances for each record that collects historical data (1 for a single instance record)^{#4}

f: Number of stored records for each record that collects historical data^{#5}

g: Maximum number of stored records for each record that collects historical data^{#6}

#1

In the $\{(d \times e)/(65,250 - c) + 1\}$ calculation, the part following the decimal point is discarded.

#2

In the (*g/e*) calculation, the part following the decimal point is discarded.

#3

For details about the fixed and variable parts of each record, see 9. *Records*.

#4

The number of instances per record can be estimated from Table A-4.

#5

For records of the PI record type, the collected data is summarized automatically over a fixed period (hour, day, week, month, year). Thus, you must take into consideration the number of records (minutes, hours, days, weeks, months, years) to be stored over the applicable period. The following table shows the default values for the retention period and the number of records:

Data type	Retention period	Number of records (if collection interval is 1 minute)
Minute-by-minute	1 day	1,440
Hourly	7 days	168
Daily	1 year	366
Weekly	1 year	52
Monthly	1 year	12
Yearly	Unlimited	(years-collected) x 1

#6

For details about the maximum number of stored records, see *F.1 List of Agent Store service properties*.

(b) Disk space requirements for Store database version 2.0

This subsection describes the disk space requirements for the Store database (Store version 2.0).

The following describes how to estimate the disk space requirements and the number of files and directories.

- Disk space requirements

The disk space requirement for the Store database is the sum of the disk space requirements for both record types. For the PI record type, the disk space

requirement is the sum of the disk space requirements for all the summary types.

Disk space requirement per record type (bytes)

$$X = \{(e + 2) \times f + (d + 60) \times \{((e + 2) \times f) / (65,250 - d) + 1\}^{\#1}\} \times a / b \times (c + 1) \times 1.1$$

a: The value depends on the record type and summary type. See Table A-6.

b: The value depends on the record type and summary type. See Table A-6.^{#2}

c: Value set as the retention period for historical data.^{#3} The unit depends on the record type and summary type. For details about the units, see Table A-6.

d: Size of the fixed part of each record that collects historical data^{#4}

e: Size of the variable part of each record that collects historical data^{#4}

f: Number of instances for each record that collects historical data (1 for a single-instance record)^{#5}

f: If the value of *f* is 2 or greater, use a multiple of 4. For example, if the value of *f* is 2, use *f* = 4. If the value of *f* is 1, use *f* = 1.

Table A-6: Values to be set in variables a, b, and c

Record type	Summary type	a	b	c
PI	Minute	1,440	$1 + (g - 1) / 60^{\#2}$	Retention period (days)
	Hour	24	$1 + (g - 1) / 3,600^{\#2}$	Retention period (days)
	Day	7	$1 + (g - 1) / 86,400^{\#2}$	Retention period (weeks)
	Week	1	$1 + (g - 1) / 604,800^{\#2}$	Retention period (weeks)
	Month	1	$1 + (g - 1) / 2,592,000^{\#2}$	Retention period (months)
	Year	1	$1 + (g - 1) / 31,622,400^{\#2}$	Retention period (years)
PD	--	1,440	$g / 60$	Retention period (days)

Legend:

g: Value set as the historical data collection interval (seconds)

--: Not applicable

#1

Round off the calculation result of $\{(e \times f) / (65,250 - d) + 1\}$.

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#2

Round off the calculation result of b for the PI record type.

#3

For the default retention period for Store version 2.0, see Tables A-7 and A-8.

#4

For the sizes of the fixed and variable parts of each record, see the record sizes in 9. *Records*.

#5

The number of instances for each record can be estimated from Table A-4.

Table A-7: Retention period of PI records (default value)

Data type	Retention period
Minute-by-minute	1 day
Hourly	7 days
Daily	54 weeks
Weekly	54 weeks
Monthly	12 months
Yearly	Unlimited

Table A-8: Retention period of PD records (default value)

Record name	Retention period (days)
CCMS Alert Monitor Command (PD_ALMX)	2
SAP Instance Summary (PD_SRV)	5
System Log Monitor Command (PD_SLMX)	2
Work Process Summary (PD)	5

■ Number of files

$$N = 20 + 2 \times ($$

$$(A_{11} + A_{12} + \dots + A_{1m} + m) +$$

$$(A_{21} + A_{22} + \dots + A_{2m} + m) +$$

$$(A_{31} + A_{32} + \dots + A_{3m} + m) +$$

$$\begin{aligned}
 & (A41 + A42 + \dots + A4m + m) + \\
 & (A51 + A52 + \dots + A5m + m) + \\
 & (11 \times m) + \\
 & (B1 + B2 + \dots + Bn + n) \\
 &)
 \end{aligned}$$

m : Number of records collected as PI records

n : Number of records collected as PD records

From $A11$ to $A1m$: Retention period setting for each minute-by-minute record of the PI record type (days)

From $A21$ to $A2m$: Retention period setting for each hourly record of the PI record type (days)

From $A31$ to $A3m$: Retention period setting for each daily record of the PI record type (weeks)

From $A41$ to $4m$: Retention period setting for each weekly record of the PI record type (weeks)

From $A51$ to $A5m$: Retention period setting for each monthly record of the PI record type (months)

From $B1$ to Bn : Retention period setting for each record of the PD record type (days)

■ Number of directories

The following shows the formula for estimating the number of directories (N) created for the Store database:

$$N = 25 + 2 \times ((A1max) + (A2max) + (A3max) + (A4max) + (A5max) + 11 + (Bmax))$$

$A1max$: Maximum value of the retention period setting for data whose summary type is *Minute* for a record of the PI record type (days)

$A2max$: Maximum value of the retention period setting for data whose summary type is *Hour* for a record of the PI record type (days)

$A3max$: Maximum value of the retention period setting for data whose summary type is *Day* for a record of the PI record type (weeks)

$A4max$: Maximum value of the retention period setting for data whose summary type is *Week* for a record of the PI record type (weeks)

$A5max$: Maximum value of the retention period setting for data whose summary type is *Month* for a record of the PI record type (months)

Bmax: Maximum value of the retention period setting for each record of the PD record type (days)

- Number of files opened by the Store service

The following shows the formula for estimating the number of files (*N*) opened by the Store service:

$$N = 20 + 2 \times (6 \times l + m)$$

l: Number of records collected as PI records

m: Number of records collected as PD records

(3) Disk space requirements during command execution

The tables below show the disk space requirements for executing the commands provided by PFM - Agent for Enterprise Applications.

(a) jr3alget command

The following table shows the disk space requirements for executing the jr3alget command in the same directory.

Table A-9: Disk space requirements for executing the jr3alget command

File	Disk space requirements (kilobytes)
CCMS alert information storage file	1,024 ^{#1, #2}
jr3alget.dat (data log file)	512 ^{#1}
jr3alget.log (message log file)	512 ^{#1}
Other files (total)	1

#1

This is the default value. For details about the file size settings, see 6.4 Using a command to extract CCMS alert information.

#2

The formula for estimating the size of the CCMS alert information storage file is shown below. Convert the obtained value in bytes to kilobytes and then set that value (1 kilobyte = 1,024 bytes).

In Windows:

$$28 + 421 \times n \text{ (bytes)}$$

In UNIX:

$$27 + 420 \times n \text{ (bytes)}$$

Legend:

n : Number of rows of CCMS alerts to be collected

(b) jr3slget command

The following table shows the disk space requirements for executing the `jr3slget` command in the same directory.

Table A-10: Disk space requirements for executing the jr3slget command

File	Disk space requirements (kilobytes)
System log information storage file	1,024 ^{#1, #2}
<code>jr3slget.dat</code> (data log file)	512 ^{#1, #3}
<code>jr3slget.log</code> (message log file)	512 ^{#1}
Other files (total)	1

#1

This is the default value. For details about file size settings, see *5.4 Using a command to extract system log information*.

#2

The formula for estimating the size of the system log information storage file is shown below. Convert the obtained value in bytes to kilobytes and then set that value (1 kilobyte = 1,024 bytes).

In Windows:

$$28 + 308 \times n \text{ (bytes)}$$

In UNIX:

$$27 + 307 \times n \text{ (bytes)}$$

Legend:

n : Number of rows of system logs to be collected

#3

The formula for estimating the size of `jr3slget.dat` (data log file) is shown below. Convert the obtained value in bytes to kilobytes and then set that value (1 kilobyte = 1,024 bytes).

In Windows:

$$9,280 + 1,542 \times d + 257 \times n \text{ (bytes)}$$

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In UNIX:

$$9,243 + 1,536 \times d + 256 \times n \text{ (bytes)}$$

Legend:

d: System log collection period (number of days)

n: Number of rows of system logs to be collected

A.3 Disk space requirements for cluster use

The disk space requirements for cluster use are the same as for non-cluster system operation. For details about the disk space requirements, see *A.2 Disk space requirements*.

B. Kernel Parameters

PFM - Agent for Enterprise Applications does not require adjustment of kernel parameters.

For details about how to adjust the kernel parameters for using PFM - Manager in a UNIX environment, see the appendix that lists the kernel parameters in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

C. List of Identifiers

To operate PFM - Agent for Enterprise Applications or to extract performance data from the Store database of PFM - Agent for Enterprise Applications, identifiers are required so that the system can identify PFM - Agent for Enterprise Applications. The following table shows the identifiers of PFM - Agent for Enterprise Applications.

Table C-1: Identifiers of PFM - Agent for Enterprise Applications

Use	Name	Identifier	Description
Commands, etc.	Product ID	M	The product ID is part of the service ID. The service ID is required for commands that perform operations, such as checking the system configuration of the Performance Management series and backing up performance data. For details about the service ID, see the naming rules in the appendix in the <i>Job Management Partner 1/Performance Management Planning and Configuration Guide</i> .
	Service key	agtm or EAP	This identifier is needed in order to use commands to start and stop PFM - Agent for Enterprise Applications. For details about the service key, see the appendix in the <i>Job Management Partner 1/Performance Management Planning and Configuration Guide</i> .
ODBC	Product type identifier	R3	The product type identifier is needed in order to use SQL statements to extract data. For details, see the chapter that describes operation analysis linked with ODBC-based application programs in the <i>Job Management Partner 1/Performance Management User's Guide</i> .
Help	Help ID	pcam	This is the identifier for PFM - Agent for Enterprise Applications help.

D. List of Processes

This appendix lists the processes of PFM - Agent for Enterprise Applications.

For details about the processes of PFM - Manager, PFM - Web Console, and PFM - Base, see the appendix in the manual *Job Management Partner 1/Performance Management Reference*.

The following table lists the processes of PFM - Agent for Enterprise Applications. The value in parentheses following each process name is the number of processes that can run concurrently.

Note

The number of processes that can be running is the same as for PFM - Agent on a logical host.

Table D-1: Processes of PFM - Agent for Enterprise Applications (Windows)

Process name (processes-count)	Function
<code>jpcagtm.exe (n)</code>	Process of the Agent Collector service. One <code>jpcagtm</code> process is started for each instance of PFM - Agent for Enterprise Applications.
<code>jpcsto.exe (n)</code>	Process of the Agent Store service. One <code>jpcsto</code> process is started for each instance of PFM - Agent for Enterprise Applications.
<code>jr3alget.exe (1) #1</code>	Process for collecting CCMS alert information
<code>jr3slget.exe (1) #1</code>	Process for collecting system log information
<code>stpqlpr.exe (1) #2</code>	Process for backup/export of the Store database

#1

This is a child process of the `jpcagtm` process.

#2

This is a child process of the `jpcsto` process.

Table D-2: Processes of PFM - Agent for Enterprise Applications (UNIX)

Process name (processes-count)	Function
<code>jpcagtm(n)</code>	Process of the Agent Collector service. One <code>jpcagtm</code> process is started for each instance of PFM - Agent for Enterprise Applications.
<code>jpcsto(n)</code>	Process of the Agent Store service. One <code>jpcsto</code> process is started for each instance of PFM - Agent for Enterprise Applications.
<code>jr3alget.exe(1)</code> #1	Process for collecting CCMS alert information
<code>jr3slget.exe(1)</code> #1	Process for collecting system log information
<code>stpqlpr(1)</code> #2	Process for backup/export of the Store database.

#1

This is a child process of the `jpcagtm` process.

#2

This is a child process of the `jpcsto` process.

E. List of Port Numbers

This appendix lists the port numbers of Performance Management.

For details about the port numbers for PFM - Manager and PFM - Base and for details about the firewall passage directions, see the appendix in the manual *Job Management Partner 1/Performance Management Reference*.

You can change a port number to match your system environment. For details about how to change a port number, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*. The TCP/IP protocol is used.

Note

Performance Management supports static NAT (Basic NAT) that performs 1-to-1 address conversion. It does not support dynamic NAT or NAT (IP Masquerade, NAT+) that includes a port conversion function.

E.1 Port numbers of Performance Management

The following table shows the port numbers used by Performance Management:

Table E-1: Port numbers used by Performance Management

Port number	Parameter	Service name	Usage
--#1	jp1pcstom[<i>nnn</i>] ^{#2}	Agent Store service	Used to record performance data and acquire historical reports.
--#1	jp1pcagtm[<i>nnn</i>] ^{#2}	Agent Collector service	Used to bind alarms and acquire real-time reports.

#1

Each time the service is restarted, port numbers that are not being used by the system are assigned automatically.

#2

When multiple instances of the service are created, a sequential number (*nnn*) is appended to the second and subsequent instances. The first instance does not have a sequential number.

E.2 Firewall passage directions

If there is a firewall between PFM - Manager and PFM - Agent for Enterprise

Applications, you must set fixed port numbers for all services of PFM - Manager and the PFM - Agent. To enable communications to pass through the firewall for all services, the port numbers that you set must comply with the directions shown in the following table.

Table E-2: Firewall passage directions (between PFM - Manager and PFM - Agent)

Service name	Parameter	Passage direction
Agent Store service	jp1pcstom[<i>nnn</i>] [#]	Agent <-- Manager
Agent Collector service	jp1pcagtm[<i>nnn</i>] [#]	Agent <-- Manager

Legend:

Manager: PFM - Manager host

Agent: PFM - Agent host

<--: Direction in which communications (connection) begin, from the right-hand item to the left-hand item.

#

When multiple instances of the service are created, a sequential number (*nnn*) is appended to the second and subsequent instances. The first instance does not have a sequence number.

When communications (connection) begin, the service receiving the connection request (pointed to by the arrow) uses the port number listed in Table E-1 as the reception port. The service sending the connection request uses an available port assigned by the OS as the transmission port. The range of port numbers used depends on the OS.

For Agent <-- Manager above, set the firewall in such a manner that the transmission port used temporarily by the Manager can pass the reception port of the Agent.

Note

To execute the `jpctool db dump (jpcctrl dump)` command or `jpctool service list (jpcctrl list)` command on a PFM - Agent host, use one of the following methods:

- Specify the `proxy` option of the `jpctool db dump (jpcctrl dump)` or `jpctool service list (jpcctrl list)` command to communicate through PFM - Manager. For details about the `proxy` option of the `jpctool db dump (jpcctrl dump)` or `jpctool service list (jpcctrl list)` command, see the chapter that describes commands in the manual *Job Management Partner 1/Performance Management Reference*.

- For each PFM - Agent host, set port numbers in the directions shown in the table below so that communication can pass through the firewall.

Service name	Parameter	Passage directions
Agent Store service	jp1pcstom[<i>nnn</i>]#	Agent <--> Agent
Agent Collector service	jp1pcagtm[<i>nnn</i>]#	Agent <--> Agent

Legend:

Agent: PFM - Agent host

<-->: Directions in which communications (connections) begin: from the left-hand item to the right-hand item, and from the right-hand item to the left-hand item.

#

When multiple instances of the service are created, a sequential number (*nnn*) is appended to the second and subsequent instances. The first instance does not have a sequential number.

F. Properties of PFM - Agent for Enterprise Applications

This appendix lists the properties of the Agent Store and Agent Collector services of PFM - Agent for Enterprise Applications that are displayed in PFM - Web Console.

F.1 List of Agent Store service properties

The following table lists the properties of the Agent Store service of PFM - Agent for Enterprise Applications.

Table F-1: Properties of the Agent Store service of PFM - Agent for Enterprise Applications

Folder name	Property name	Description
--	First Registration Date	Displays the first date and time the service was recognized by PFM - Manager.
	Last Registration Date	Displays the most recent date and time the service was recognized by PFM - Manager.
General	--	Stores information such as host names and directories. You cannot change properties stored in this folder.
	Directory	Displays the name of the current directory where the service is running.
	Host Name	Displays the name of the physical host where the service is running.
	Process ID	Displays the service's process ID.
	Physical Address	Displays the IP address and port number of the host where the service is running.
	User Name	Displays the name of the user that executed the service process.
	Time Zone	Displays the time zone in which the service is used.
System	--	Stores information about the operating system where the service is running. You cannot change properties stored in this folder.
	CPU Type	Displays the CPU type.
	Hardware ID	Displays the hardware ID.
	OS Type	Displays the type of operating system.
	OS Name	Displays the name of the operating system.

Folder name		Property name	Description
		OS Version	Displays the version of the operating system.
Network Services		--	Stores information about the Performance Management communication common library. You cannot change properties stored in this folder.
		Build Date	Displays the creation date of the Agent Store service.
		INI File	Displays the name of the directory containing the <code>jpcns.ini</code> file.
Network Services	Service	--	Stores information about the service. You cannot change properties stored in this folder.
		Description	Displays the host name in the following format: <i>instance-name_host-name</i>
		Local Service Name	Displays the service ID.
		Remote Service Name	Displays the service ID of the Master Manager service at the connection-target PFM - Manager host.
		EP Service Name	Displays the service ID of the Correlator service at the connection-target PFM - Manager host.
Retention		--	Sets the data retention period. For details, see the chapter that describes management of operation monitoring data in the <i>Job Management Partner 1/ Performance Management User's Guide</i> .
		Product Interval - Minute Drawer	Sets the retention period for records of the PI record type that are collected each minute. The following periods can be selected: <ul style="list-style-type: none"> • Minute • Hour • Day • 2 Days • 3 Days • 4 Days • 5 Days • 6 Days • Week • Month • Year

Folder name	Property name	Description
	Product Interval - Hour Drawer	Sets the retention period for records of the PI record type that are collected hourly. The following periods can be selected: <ul style="list-style-type: none"> • Hour • Day • 2 Days • 3 Days • 4 Days • 5 Days • 6 Days • Week • Month • Year
	Product Interval - Day Drawer	Sets the retention period for records of the PI record type that are collected daily. The following periods can be selected: <ul style="list-style-type: none"> • Day • 2 Days • 3 Days • 4 Days • 5 Days • 6 Days • Week • Month • Year
	Product Interval - Week Drawer	Sets the retention period for records of the PI record type that are collected weekly. The following periods can be selected: <ul style="list-style-type: none"> • Week • Month • Year
	Product Interval - Month Drawer	Sets the retention period for records of the PI record type that are collected monthly. The following periods can be selected: <ul style="list-style-type: none"> • Month • Year
	Product Interval - Year Drawer	Sets the retention period for records of the PI record type that are collected annually. This retention period is fixed to Year .

Folder name		Property name	Description
		Product Detail - <i>record-ID-of-PD-record-type</i>	Sets the number of records to save, for records of the PD record type. You can specify an integer in the range from 0 to 2,147,483,647 (inclusive). Note: An error message is displayed if you specify an out-of-range value or a non-numeric character.
RetentionEx		--	Sets the data retention period for Store version 2.0. For details, see the chapter that describes managing operation monitoring data in the <i>Job Management Partner 1/Performance Management User's Guide</i> .
RetentionEx	Product Interval - <i>record-ID-of-PI-record-type</i>	--	Sets the retention period for records of the PI record type.
		Period - Minute Drawer (Day)	Sets the retention period for performance data that is collected minute-by-minute for each record ID of the PI record type. The permitted retention period (number of days) is an integer in the range from 0 to 366.
		Period - Hour Drawer (Day)	Sets the retention period for performance data that is collected hourly for each record ID of the PI record type. The permitted retention period (number of days) is an integer in the range from 0 to 366.
		Period - Day Drawer (Week)	Sets the retention period for performance data that is collected daily for each record ID of the PI record type. The permitted retention period (number of weeks) is an integer in the range from 0 to 522.
		Period - Week Drawer (Week)	Sets the retention period for performance data that is collected weekly for each record ID of the PI record type. The permitted retention period (number of weeks) is an integer in the range from 0 to 522.
		Period - Month Drawer (Month)	Sets the retention period for performance data that is collected monthly for each record ID of the PI record type. The permitted retention period (number of months) is an integer in the range from 0 to 120.
		Period - Year Drawer (Year)	Sets the retention period for performance data that is collected yearly for each record ID of the PI record type. The value 10 is always displayed. The retention period is unlimited.

Folder name		Property name	Description
	Product Detail - <i>record-ID-of-PD</i> <i>-record-type</i>	Period (Day)	Sets the retention period for performance data for each record ID of the PD record type. The permitted retention period (number of days) is an integer in the range from 0 to 366.
Disk Usage		--	This directory stores the amounts of disk space used by each database. Displayed disk space usage values are current as of the time of the display. You cannot change the properties stored in this directory.
		Product Interval	Displays the disk space used by records of the PI record type.
		Product Detail	Displays the disk space used by records of the PD record type.
		Product Alarm	Displays the disk space used by records of the PA record type. PFM - Agent for Enterprise Applications does not use this property.
		Product Log	Displays the disk space used by records of the PL record type. PFM - Agent for Enterprise Applications does not use this property.
		Total Disk Usage	Displays the total amount of disk space used by the entire database.
Configuration		--	Displays the properties of the Agent Store service.
		Store Version	Displays the version of the Store database. <ul style="list-style-type: none"> • For Store version 1.0: 1 . 0 • For Store version 2.0: 2 . 0

Legend:

--: Not applicable

F.2 List of Agent Collector service properties

The following table lists the properties of the Agent Collector service of PFM - Agent for Enterprise Applications.

Table F-2: Properties of the Agent Collector service of PFM - Agent for Enterprise Applications

Folder name	Property name	Description
--	First Registration Date ^{#1}	Displays the first date and time the service was recognized by PFM - Manager.
	Last Registration Date ^{#1}	Displays the most recent date and time the service was recognized by PFM - Manager.
	Data Model Version	Displays the version of data model.
General	--	Stores information such as host names and directories. You cannot change properties stored in this folder.
	Directory	Displays the name of the current directory where the service is running.
	Host Name	Displays the name of the physical host where the service is running.
	Process ID	Displays the service's process ID.
	Physical Address	Displays the IP address and port number of the host where the service is running.
	User Name	Displays the name of the user that executed the service process.
	Time Zone	Displays the time zone in which the service is used.
System	--	Stores information about the operating system where the service is running. You cannot change properties stored in this folder.
	CPU Type	Displays the CPU type.
	Hardware ID	Displays the hardware ID.
	OS Type	Displays the type of operating system.
	OS Name	Displays the name of the operating system.
	OS Version	Displays the version of the operating system.
Network Services	--	Stores information about the Performance Management communication common library. You cannot change properties stored in this folder.
	Build Date	Displays the creation date of the Agent Collector service.

Folder name		Property name	Description
		INI File	Displays the name of the directory containing the <code>jpcns.ini</code> file.
Network Services	Service	--	Stores information about the service. You cannot change properties stored in this folder.
		Description	Displays the host name in the following format: <i>instance-name_host-name</i>
		Local Service Name	Displays the service ID.
		Remote Service Name	Displays the service ID of the Agent Store service to which the Agent Collector service connects.
		AH Service Name	Displays the service ID of the Action Handler service on the same host.
JP1 Event Configurations		--	Sets the JP1 event issuance conditions.
		<i>each-service</i>	Selects either Yes or No from the list item for the Agent Collector, Agent Store, Action Handler, and Status Serve services to specify whether JP1 system events are to be issued for each service.
		JP1 Event Send Host	Specifies the connection-target event server name of JP1/Base. The specified server event must be running on the logical host or physical host on the same machine as for the Action Handler service. The permitted value is from 0 to 255 bytes of single-byte characters. You can use alphanumeric characters, the period (.), and the hyphen (-). If the specified value is outside the permitted range, the system assumes that no value is specified. If no value is specified, the host on which the Action Handler service is running is assumed to be the host that issues events. If <code>localhost</code> is specified, the system assumes that the physical host is specified.
		Monitoring Console Host	Specifies the PFM - Web Console host to be started when PFM - Web Console's browser is started at the time of monitor startup by JP1/IM - Manager. The permitted value is from 0 to 255 bytes of single-byte characters. You can use alphanumeric characters, the period (.), and the hyphen (-). If the specified value is outside the permitted range, the system assumes that no value is specified. If no value is specified, the system assumes the connection-target PFM - Manager host.

Folder name		Property name	Description
		Monitoring Console Port	Specifies the port number of the PFM - Web Console that is to be started (HTTP requested port number). The permitted value range is from 1 to 65,535. If the specified value is outside the permitted range, the system assumes that no value is specified. If no value is specified, 20358 is set.
JP1 Event Configurations	Alarm	JP1 Event Mode	Sets whether JP1 system events or JP1 user events are to be issued when the alarm status changes. <ul style="list-style-type: none"> • JP1 User Event: Issues JP1 user events. • JP1 System Event: Issues JP1 system events.
Detail Records		--	Stores the properties of records of the PD record type. The record IDs of the collected records are displayed in a bold typeface.
Detail Records	<i>record-ID</i> ^{#2}	--	Stores the properties of a record.
		Description	Displays a description of the record. You cannot change this property.
		Log	Select Yes or No from the list to specify whether the record is to be logged into (stored in) the Store database. If this value is set to Yes and Collection Interval is set to a value greater than 0, the record is logged into the database.
		Collection Interval	Specifies the data collection interval. You can specify a value from 0 to 2,147,483,647 seconds (inclusive) in increments of 1. If you specify 0 for the property, 0 seconds is assumed, in which case no data is collected.
		Collection Offset	Specifies the offset value (in seconds) for starting data collection. The specified value must not exceed the value specified for Collection Interval and must be in the range from 0 to 32,767 seconds (inclusive). The storage time for data collection does not depend on the Collection Offset value and is the same time as the Collection Interval.
		LOGIF	Specifies the conditions for storing records in the database. Only records that satisfy the conditions are stored in the database. This property displays the conditional expression (character string) that was created in the LOGIF Expression Editor window, which is displayed by clicking LOGIF in the lower frame of the service property window, which is displayed by clicking the Services tab in PFM - Web Console.

Folder name		Property name	Description
Interval Records		--	Stores the properties of records of the PI record type. The record IDs of the collected records are displayed in a bold typeface.
Interval Records	<i>record-ID</i> ^{#2}	--	Stores the properties of a record.
		Description	Displays a description of the record. You cannot change this property.
		Log	Select Yes or No from the list to specify whether the record is to be logged into (stored in) the Store database. If this property is set to Yes and Collection Interval is set to a value greater than 0, the record is logged into the database.
		Collection Interval	Sets the data collection interval. You can specify a value from 0 to 2,147,483,647 seconds (inclusive) in increments of 1. If you specify 0 for the property, 0 seconds is assumed, in which case no data is collected.
		Collection Offset	Sets the offset value (in seconds) for starting data collection. The specified value must not exceed the value specified for Collection Interval and must be in the range from 0 to 32,767 seconds (inclusive). The storage time for data collection does not depend on the Collection Offset value and is the same time as the Collection Interval.
		LOGIF	Sets the conditions for storing records in the database. Only records that satisfy the conditions are stored in the database. This property displays the conditional expression (character string) that was created in the LOGIF Expression Editor window, which is displayed by clicking LOGIF in the lower frame of the service property window, which is displayed by clicking the Services tab in PFM - Web Console.
Log Records		--	Stores the properties of records of the PL record type. Because PFM - Agent for Enterprise Applications does not support this record type, do not use this property.

Folder name		Property name	Description
Restart Configurations		--	Sets automatic restart conditions for PFM services. This property is supported by PFM - Manager and PFM - Base 09-00 or later. For details about the automatic PFM service restart function, see the chapter that describes the functions of Performance Management in the <i>Job Management Partner 1/Performance Management Planning and Configuration Guide</i> .
		Restart when Abnormal Status	Sets whether services are to be restarted automatically if the Status Server service cannot acquire the status of Action Handler, Agent Collector, and Agent Store services successfully.
		Restart when Single Service Running	Sets whether the other service is to be restarted automatically if only the Agent Store service or Agent Collector service is running.
Restart Configurations	Action Handler	Auto Restart	Sets whether the automatic restart function is to be used on the Action Handler service.
		Auto Restart - Interval (Minute)	Sets the interval in minutes at which the service operation status is to be checked when the automatic restart function is used.
		Auto Restart - Repeat Limit	Sets the number of times a restart attempt is to be made consecutively when the automatic restart function is used.
		Scheduled Restart	Sets whether the scheduled restart functionality is to be used on the Action Handler service.
		Scheduled Restart - Interval	Sets a restart interval when the scheduled restart functionality is used.
		Scheduled Restart - Interval Unit	Sets the unit for the restart interval when the scheduled restart functionality is used.
		Scheduled Restart - Origin - Year	Specifies an integer in the range from 1971 to 2035 as the year in which restart is to be executed.
		Scheduled Restart - Origin - Month	Specifies an integer in the range from 1 to 12 as the month in which restart is to be executed.
		Scheduled Restart - Origin - Day	Specifies an integer in the range from 1 to 31 as the day of the month on which restart is to be executed.
		Scheduled Restart - Origin - Hour	Specifies an integer in the range from 0 to 23 as the time (hour) at which restart is to be executed.

Folder name		Property name	Description
		Scheduled Restart - Origin - Minute	Specifies an integer in the range from 0 to 59 as the time (minute) at which restart is to be executed.
	Agent Collector	Auto Restart	Sets whether the automatic restart function is to be used on the Agent Collector service.
		Auto Restart - Interval (Minute)	Sets the interval in minutes at which the service operation status is to be checked when the automatic restart function is used.
		Auto Restart - Repeat Limit	Sets the number of times a restart attempt is to be made consecutively when the automatic restart function is used.
		Scheduled Restart	Sets whether the scheduled restart functionality is to be used on the Agent Collector service.
		Scheduled Restart - Interval	Sets a restart interval when the scheduled restart functionality is used.
		Scheduled Restart - Interval Unit	Sets the unit for the restart interval when the scheduled restart functionality is used.
		Scheduled Restart - Origin - Year	Specifies an integer in the range from 1971 to 2035 as the year in which restart is to be executed.
		Scheduled Restart - Origin - Month	Specifies an integer in the range from 1 to 12 as the month in which restart is to be executed.
		Scheduled Restart - Origin - Day	Specifies an integer in the range from 1 to 31 as the day of the month on which restart is to be executed.
		Scheduled Restart - Origin - Hour	Specifies an integer in the range from 0 to 23 as the time (hour) at which restart is to be executed.
		Scheduled Restart - Origin - Minute	Specifies an integer in the range from 0 to 59 as the time (minute) at which restart is to be executed.
		Agent Store	Auto Restart
	Auto Restart - Interval (Minute)		Sets the interval in minutes at which the service operation status is to be checked when the automatic restart function is used.
	Auto Restart - Repeat Limit		Sets the number of times a restart attempt is to be made consecutively when the automatic restart function is used.
	Scheduled Restart		Sets whether the scheduled restart functionality is to be used on the Agent Store service.

Folder name		Property name	Description
		Scheduled Restart - Interval	Sets the restart interval when the scheduled restart functionality is used.
		Scheduled Restart - Interval Unit	Sets the unit for the restart interval when the scheduled restart functionality is used.
		Scheduled Restart - Origin - Year	Specifies an integer in the range from 1971 to 2035 as the year in which restart is to be executed.
		Scheduled Restart - Origin - Month	Specifies an integer in the range from 1 to 12 as the month in which restart is to be executed.
		Scheduled Restart - Origin - Day	Specifies an integer in the range from 1 to 31 as the day of the month on which restart is to be executed.
		Scheduled Restart - Origin - Hour	Specifies an integer in the range from 0 to 23 as the time (hour) at which restart is to be executed.
		Scheduled Restart - Origin - Minute	Specifies an integer in the range from 0 to 59 as the time (minute) at which restart is to be executed.
Agent		--	Stores the properties for the settings of PFM - Agent specific to SAP system.
Agent	Target	--	Displays an overview of the SAP system being monitored. You cannot change properties stored in this directory.
		SID	Displays the ID of the SAP system being monitored.
		SERVER	Displays the name of the SAP instance being monitored.
	Destination	--	Displays information needed to connect to the SAP system. You cannot change properties stored in this folder.
		ASHOST	Displays the host name of the connection-target application server. Normally, the name of the local host is displayed.
		SYSNR	Displays the system number of the SAP system.
		CLIENT	Displays the client name to which the SAP user belongs (system number assigned to the connection-target dialog instance).
		USER	Displays the SAP user name.

Folder name		Property name	Description
		EXTPWD	Displays whether an extended password is to be used to connect to the SAP system. <ul style="list-style-type: none"> Y: Uses an extended password. N: Does not use an extended password.
		PASSWD	Displays asterisks (*) for the password of the SAP user.
		LANG	Displays the language of the SAP user or of the connection-target SAP system. It is always EN.
		CODEPAGE	Displays the code page that is used to connect to the SAP system. This information is always blank.
	Mode	--	Displays the operating mode of the Agent Collector service. You cannot change properties stored in this folder.
		DELAYCONNECT	Displays when the SAP system is to be connected: <ul style="list-style-type: none"> Y: Connect to the SAP system only when performance data is collected. In this case, the Agent Collector service is started regardless of the operating status of the SAP system during connection establishment. N: Connect to the SAP system when the Agent Collector service starts. In this case, the Agent Collector service is not started if the SAP system is inactive during connection establishment.
		KEEPCONNECT	Displays whether the SAP system is to remain connected after collection of performance data is completed. It is always Y. <ul style="list-style-type: none"> Y: Maintain the connection. N: Do not maintain the connection.
	PI_UMP	MONITOR_SET	Specifies the monitor set name for the SAP system monitor information that is to be the monitoring target for User defined Monitor (Perf.) (PI_UMP) records. You can specify a character string of 1 to 60 bytes of alphanumeric characters.
		MONITOR	Specifies the monitor set name for the SAP system monitor information that is to be the monitoring target for User defined Monitor (Perf.) (PI_UMP) records. You can specify a character string of 1 to 60 bytes of alphanumeric characters.

Legend:

--: Not applicable

#1

If you display the Properties - [Service] dialog box from the Performance Management - View window, the `First Registration Date` and `Last Registration Date` properties are not displayed. To view these property values, display the Properties - [Service] dialog box from the Administration Tool window.

#2

The folder name shows the record ID without the database ID. For details about the record ID of each record, see *9. Records*.

G. List of Files and Directories

This appendix lists the files and directories of PFM - Agent for Enterprise Applications for each OS.

The installation directory of Performance Management is displayed for each OS.

In Windows:

You can specify any folder as the installation directory of Performance Management. The following are the default installation directory folders:

- For supported operating systems other than Windows Server 2003 (x64) or the 64-bit version of Windows Server 2008

system-drive\Program Files\Hitachi\jplpc\

- For Windows Server 2003 (x64) or the 64-bit version of Windows Server 2008

system-drive\Program Files(x86)\Hitachi\jplpc\

G.1 In Windows

The following table lists the files and folders for the Windows version of PFM - Agent for Enterprise Applications.

Table G-1: Files and folders for PFM - Agent for Enterprise Applications (Windows)

Folder name	Filename	Description
<i>installation-folder</i> \agtm\	--	Base folder of PFM - Agent for Enterprise Applications
	readme.txt	README.TXT
<i>installation-folder</i> \agtm\agent\	--	Base folder of the Agent Collector service
	jpcagtm.exe	Executable program of the Agent Collector service
<i>installation-folder</i> \agtm\agent\ <i>instance-name</i> \	--	Base folder of the Agent Collector service (for each instance) ^{#1}
	jpcagt.ini	Agent Collector service startup initialization file (for each instance) ^{#1}
	jpcagt.ini.model	Model file for the Agent Collector service startup initialization file (for each instance) ^{#1}

Folder name	Filename	Description
	jr3alget.ini	Environment parameters file for CCMS Alert Monitor Command (PD_ALMX) records ^{#1}
	jr3slget.ini	Environment parameters file for System Log Monitor Command (PD_SLMX) records ^{#1}
<i>installation-folder</i> \agtm\agent\ <i>instance-name</i> \log\	--	Storage folder for internal log files of the Agent Collector service (for each instance) ^{#1}
	ALERT	Storage file for CCMS alert information (default) ^{#3}
	ALERT ofs	Management file for CCMS alert information (default) ^{#3}
	jr3alget.log	Message log file storing the CCMS alert information extraction history ^{#3}
	jr3alget.dat	Data log file storing the CCMS alert information extraction history ^{#3}
	jr3alget.last time	Timestamp file containing the previous date and time that CCMS alert information was extracted ^{#3}
	SYSLOG	Storage file for system log information (default) ^{#4}
	SYSLOG ofs	Management file for the system log information storage file (default) ^{#4}
	jr3slget.log	Message log file storing the system log information extraction history ^{#4}
	jr3slget.dat	Data log file storing the system log information extraction history ^{#4}
	jr3slget.last time	Timestamp file containing the previous date and time that system log information was extracted ^{#4}
<i>installation-folder</i> \agtm\evtrap\	--	Root directory of SAP event management function
	jr3alget	CCMS alert extraction and conversion command

G. List of Files and Directories

Folder name	Filename	Description
	jr3alget.ini.sample	Model file for the jr3alget command's environment parameters file
	jr3slget	System log extraction and conversion command
	jr3slget.ini.sample	Model file for the jr3slget command's environment parameters file
<i>installation-folder\agtm\lib\</i>	--	Storage folder for message catalogs
<i>installation-folder\agtm\store\</i>	--	Base directory of the Agent Store service
	*.DAT	Definition file for a data model
<i>installation-folder\agtm\store\instance-name\</i>	--	Base folder of the Agent Store service (for each instance) ^{#1}
	*.DB	Performance data file (for each instance) ^{#2}
	*.IDX	Index file for performance data files (for each instance) ^{#2}
	*.LCK	Lock file for performance data files (for each instance) ^{#2}
	jpesto.ini	Startup-information file of the Agent Store service (for each instance) ^{#1}
	jpesto.ini.model	Model file for the startup-information file of the Agent Store service (for each instance) ^{#1}
	*.DAT	Definition file for a data model (for each instance) ^{#1}
<i>installation-folder\agtm\store\instance-name\backup\</i>	--	Default database backup folder (for each instance) ^{#1}
<i>installation-folder\agtm\store\instance-name\dump\</i>	--	Default database export folder (for each instance) ^{#1}
<i>installation-folder\agtm\store\instance-name\import\</i>	--	Default database export folder for Store version 2.0 (for each instance) ^{#5}
<i>installation-folder\agtm\store\instance-name\log\</i>	--	Storage folder for internal log files of the Agent Store service (for each instance) ^{#1}
<i>installation-folder\agtm\store\instance-name\partial\</i>	--	Default database partial backup folder for Store version 2.0 (for each instance) ^{#5}

Folder name	Filename	Description
<i>installation-folder</i> \agtm\store\ <i>instance-name</i> \STPD\	--	Base folder for performance data of the PD record type for Store version 2.0 (for each instance) ^{#5}
<i>installation-folder</i> \agtm\store\ <i>instance-name</i> \STPI\	--	Base folder for performance data of the PI record type for Store version 2.0 (for each instance) ^{#5}
<i>installation-folder</i> \agtm\store\ <i>instance-name</i> \STPL\	--	Base folder for performance data of the PL record type for Store version 2.0 (for each instance) ^{#5}
<i>installation-folder</i> \patch_files\agtm\	--	Storage folder for patch files
<i>installation-folder</i> \auditlog\	--	Default output folder for action log files
	jpcaudit <i>n</i> .log	Action log file ^{#6}
<i>installation-folder</i> \setup\	--	Storage folder for setup files
	jpcagtmu.Z	Archive file for PFM - Agent setup (UNIX)
	jpcagtmw.EXE	Archive file for PFM - Agent setup (Windows)
<i>environment-directory</i> ^{#7} \jplpc\agtm\agent\ <i>instance-name</i> \	--	Base folder of the Agent Collector service for logical host operation (for each instance) ^{#1}
	jpcagt.ini	Agent Collector service startup initialization file for logical host operation (for each instance) ^{#1}
	jpcagt.ini.model	Model file for the Agent Collector service startup initialization file for logical host operation (for each instance) ^{#1}
	jx3alget.ini	Environment parameters file for CCMS Alert Monitor Command (PD_ALMX) records for logical host operation ^{#1}
	jx3slget.ini	Environment parameters file for System Log Monitor Command (PD_SLMX) records for logical host operation ^{#1}
<i>environment-directory</i> ^{#7} \jplpc\agtm\agent\ <i>instance-name</i> \log\	--	Storage folder for internal log files of the Agent Collector service for logical host operation (for each instance) ^{#1}

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Folder name	Filename	Description
	ALERT	Storage file for CCMS alert information for logical host operation (default) ^{#3}
	ALERT.ofs	Management file for the CCMS alert information storage file for logical host operation (default) ^{#3}
	jr3alget.log	Message log file storing the CCMS alert information extraction history for logical host operation ^{#3}
	jr3alget.dat	Data log file storing the CCMS alert information extraction history for logical host operation ^{#3}
	jr3alget.last time	Timestamp file containing the previous date and time that CCMS alert information was extracted for logical host operation ^{#3}
	SYSLOG	Storage file for system log information for logical host operation (default) ^{#4}
	SYSLOG.ofs	Management file for the system log information storage file for logical host operation (default) ^{#4}
	jr3slget.log	Message log file storing the system log information extraction history for logical host operation ^{#4}
	jr3slget.dat	Data log file storing the system log information extraction history for logical host operation ^{#4}
	jr3slget.last time	Timestamp file containing the previous date and time that system log information was extracted for logical host operation ^{#4}
<i>environment-directory</i> ^{#7} \jplpc\agtm\store\ <i>instance-name</i> \	--	Base folder of the Agent Store service for logical host operation (for each instance) ^{#1}
	*.DB	Performance data file for logical host operation (for each instance) ^{#2}
	*.IDX	Index file for performance data files for logical host operation (for each instance) ^{#2}

Folder name	Filename	Description
	*.LCK	Lock files for performance data files for logical host operation (for each instance) ^{#2}
	jpcsto.ini	Startup-information file of the Agent Store service for logical host operation (for each instance) ^{#1}
	jpcsto.ini.model	Model file for the startup-information file of the Agent Store service for logical host operation (for each instance) ^{#1}
	*.DAT	Data model definition file for logical host operation (for each instance) ^{#1}
<i>environment-directory</i> ^{#7} \jplpc\agtm\store\ <i>instance-name</i> \backup\	--	Default database backup folder for logical host operation (for each instance) ^{#1}
<i>environment-directory</i> ^{#7} \jplpc\agtm\store\ <i>instance-name</i> \dump\	--	Default database export folder for logical host operation (for each instance) ^{#1}
<i>environment-directory</i> ^{#7} \jplpc\agtm\store\ <i>instance-name</i> \import\	--	Default database import folder for Store version 2.0 for logical host operation (for each instance) ^{#5}
<i>environment-directory</i> ^{#7} \jplpc\agtm\store\ <i>instance-name</i> \log\	--	Storage folder for internal log files of the Agent Store service for logical host operation (for each instance) ^{#1}
<i>environment-directory</i> ^{#7} \jplpc\agtm\store\ <i>instance-name</i> \partial\	--	Default database partial backup folder for Store version 2.0 for logical host operation (for each instance) ^{#5}
<i>environment-directory</i> ^{#7} \jplpc\agtm\store\ <i>instance-name</i> \STPD\	--	Base folder for performance data of the PD record type for Store version 2.0 for logical host operation (for each instance) ^{#5}
<i>environment-directory</i> ^{#7} \jplpc\agtm\store\ <i>instance-name</i> \STPI\	--	Base folder for performance data of the PI record type for Store version 2.0 for logical host operation (for each instance) ^{#5}
<i>environment-directory</i> ^{#7} \jplpc\agtm\store\ <i>instance-name</i> \STPL\	--	Base folder for performance data of the PL record type for Store version 2.0 for logical host operation (for each instance) ^{#5}
<i>environment-directory</i> ^{#7} \jplpc\auditlog\	--	Default output folder for action log files for logical host operation
	jpcaudit <i>n</i> .log	Action log file for logical host operation ^{#6}

Legend:

--: Not applicable

#1

This is created by the execution of the `jpccconf inst setup (jpcinssetup)` command.

#2

This is created when the Agent Store service is started.

#3

This is created when a CCMS Alert Monitor Command (`PD_ALMX`) record is collected.

#4

This is created when a System Log Monitor Command (`PD_SLMX`) record is collected.

#5

This is created when Store version 2.0 is used to configure the Store database.

#6

n indicates a numeric value. You can use the `jpccomm.ini` file to change the number of log files.

#7

The environment directory is on the shared disk that was specified when the logical host was created.

G.2 In UNIX

The following table lists the files and directories for the UNIX version of PFM - Agent for Enterprise Applications.

Table G-2: Files and directories for PFM - Agent for Enterprise Applications (UNIX)

Directory name	File name	Description
/opt/jp1pc/agtm/	--	Base directory of PFM - Agent for Enterprise Applications
/opt/jp1pc/agtm/agent/	--	Base directory of the Agent Collector service
	jpccagtm	Executable program of the Agent Collector service

Directory name	File name	Description
/opt/jp1pc/agt/agent/ <i>instance-name</i> /	--	Base directory of the Agent Collector service (for each instance) ^{#1}
	jpgcagt.ini	Agent Collector service startup initialization file (for each instance) ^{#1}
	jpgcagt.ini.lock	Lock file for an Agent Collector service startup initialization file (for each instance) ^{#2}
	jpgcagt.ini.model	Model file for the Agent Collector service startup initialization file (for each instance) ^{#1}
	jr3alget.ini	Environment parameters file for CCMS Alert Monitor Command (PD_ALMX) records ^{#1}
	jr3slget.ini	Environment parameters file for System Log Monitor Command (PD_SLMX) records ^{#1}
/opt/jp1pc/agt/agent/ <i>instance-name</i> /log/	--	Storage directory for internal log files of the Agent Collector service (for each instance) ^{#1}
	ALERT	Storage file for CCMS alert information (default) ^{#4}
	ALERT.ofs	Management file for CCMS alert information (default) ^{#4}
	jr3alget.log	Message log file storing the CCMS alert information extraction history ^{#4}
	jr3alget.dat	Data log file storing the CCMS alert information extraction history ^{#4}
	jr3alget.lasttime	Timestamp file containing the previous date and time that CCMS alert information was extracted ^{#4}
	SYSLOG	Storage file for system log information (default) ^{#5}
	SYSLOG.ofs	Management file for the system log information storage file (default) ^{#5}
	jr3slget.log	Message log file storing the system log information extraction history ^{#5}
jr3slget.dat	Data log file storing the system log information extraction history ^{#5}	

G. List of Files and Directories

Directory name	File name	Description
	jr3slget.lasttime	Timestamp file containing the previous date and time that system log information was extracted ^{#5}
/opt/jplpc/agtm/evtrap/	--	Root directory of SAP event management function
	jr3alget	CCMS alert extraction and conversion command
	jr3alget.ini.sample	Model file for the jr3alget command's environment parameters file
	jr3slget	System log extraction and conversion command
	jr3slget.ini.sample	Model file for the jr3slget command's environment parameters file
/opt/jplpc/agtm/lib/	--	Storage directory for RFC library
	librfccm.*	SAP system's RFC library (shared library version)
/opt/jplpc/agtm/nls/	--	Storage folder for message catalogs
/opt/jplpc/agtm/store/	--	Base directory of the Agent Store service
	*.DAT	Definition file for a data model
/opt/jplpc/agtm/store/ <i>instance-name/</i>	--	Base directory of the Agent Store service (for each instance) ^{#1}
	*.DB	Performance data file (for each instance) ^{#3}
	*.IDX	Index file for performance data files (for each instance) ^{#3}
	*.LCK	Lock file for performance data files (for each instance) ^{#3}
	jpcsto.ini	Startup-information file of the Agent Store service (for each instance) ^{#1}
	jpcsto.ini.model	Model file for the startup-information file of the Agent Store service (for each instance) ^{#1}
	*.DAT	Definition file for a data model (for each instance) ^{#1}

Directory name	File name	Description
/opt/jplpc/agt/store/ <i>instance-name</i> /backup/	--	Default database backup directory (for each instance) ^{#1}
/opt/jplpc/agt/store/ <i>instance-name</i> /dump/	--	Default database export directory (for each instance) ^{#1}
/opt/jplpc/agt/store/ <i>instance-name</i> /import/	--	Default database import directory for Store version 2.0 (for each instance) ^{#6}
/opt/jplpc/agt/store/ <i>instance-name</i> /log/	--	Storage directory for internal log files of the Agent Store service (for each instance) ^{#1}
/opt/jplpc/agt/store/ <i>instance-name</i> /partial/	--	Default database partial backup directory for Store version 2.0 (for each instance) ^{#6}
/opt/jplpc/agt/store/ <i>instance-name</i> /STPD/	--	Base folder for performance data of the PD record type for Store version 2.0 (for each instance) ^{#6}
/opt/jplpc/agt/store/ <i>instance-name</i> /STPI/	--	Base folder for performance data of the PI record type for Store version 2.0 (for each instance) ^{#6}
/opt/jplpc/agt/store/ <i>instance-name</i> /STPL/	--	Base folder for performance data of the PL record type for Store version 2.0 (for each instance) ^{#6}
/opt/jplpc/patch_files/agt/	--	Storage directory for patch files
/opt/jplpc/auditlog/	--	Default output folder for action log files
	jpcauditn.log	Action log file ^{#7}
/opt/jplpc/setup/	--	Storage directory for setup files
	jpcagtmu.z	Archive file for PFM - Agent setup (UNIX)
	jpcagtmw.EXE	Archive file for PFM - Agent setup (Windows)
<i>environment-directory</i> ^{#8} / agent/ <i>instance-name</i> /	--	Base directory of the Agent Collector service for logical host operation (for each instance) ^{#1}
	jpcagt.ini	Agent Collector service startup initialization file for logical host operation (for each instance) ^{#1}

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Directory name	File name	Description
	jpcagt.ini.model	Model file for the Agent Collector service startup initialization file for logical host operation (for each instance) ^{#1}
	jr3alget.ini	Environment parameters file for CCMS Alert Monitor Command (PD_ALMX) records for logical host operation ^{#1}
	jr3slget.ini	Environment parameters file for System Log Monitor Command (PD_SLMX) records for logical host operation ^{#1}
<i>environment-directory</i> ^{#8} /jpc/agt/agent/instance-name/log/	--	Storage directory for internal log files of the Agent Collector service for logical host operation (for each instance) ^{#1}
	ALERT	Storage file for CCMS alert information for logical host operation (default) ^{#4}
	ALERT.ofs	Management file for the CCMS alert information storage file for logical host operation (default) ^{#4}
	jr3alget.log	Message log file storing the CCMS alert information extraction history for logical host operation ^{#4}
	jr3alget.dat	Data log file storing the CCMS alert information extraction history for logical host operation ^{#4}
	jr3alget.lasttime	Timestamp file containing the previous date and time that CCMS alert information was extracted for logical host operation ^{#4}
	SYSLOG	Storage file for system log information for logical host operation (default) ^{#5}
	SYSLOG.ofs	Management file for the system log information storage files for logical host operation (default) ^{#5}
	jr3slget.log	Message log file storing the system log information extraction history for logical host operation ^{#5}

Directory name	File name	Description
	jr3slget.dat	Data log file storing the system log information extraction history for logical host operation ^{#5}
	jr3slget.lasttime	Timestamp file containing the previous date and time that system log information was extracted for logical host operation ^{#5}
<i>environment-directory</i> ^{#8} / <i>jjplpc/agt/store/instance-name/</i>	--	Base directory of the Agent Store service for logical host operation (for each instance) ^{#1}
	*.DB	Performance data file for logical host operation (for each instance) ^{#3}
	*.IDX	Index file for performance data files for logical host operation (for each instance) ^{#3}
	*.LCK	Lock file for performance data files for logical host operation (for each instance) ^{#3}
	jpcsto.ini	Startup-information file of the Agent Store service for logical host operation (for each instance) ^{#1}
	jpcsto.ini.model	Model file for the startup-information file of the Agent Store service for logical host operation (for each instance) ^{#1}
	*.DAT	Data model definition file for logical host operation (for each instance) ^{#1}
<i>environment-directory</i> ^{#8} / <i>jjplpc/agt/store/instance-name/backup/</i>	--	Default database backup directory for logical host operation (for each instance) ^{#1}
<i>environment-directory</i> ^{#8} / <i>jjplpc/agt/store/instance-name/dump/</i>	--	Default database export directory for logical host operation (for each instance) ^{#1}
<i>environment-directory</i> ^{#8} / <i>jjplpc/agt/store/instance-name/import/</i>	--	Default database import directory for Store version 2.0 for logical host operation (for each instance) ^{#6}
<i>environment-directory</i> ^{#8} / <i>jjplpc/agt/store/instance-name/log/</i>	--	Storage directory for internal log files of the Agent Store service for logical host operation (for each instance) ^{#1}
<i>environment-directory</i> ^{#8} / <i>jjplpc/agt/store/instance-name/partial/</i>	--	Default database partial backup directory for Store version 2.0 for logical host operation (for each instance) ^{#6}

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Directory name	File name	Description
<i>environment-directory</i> ^{#8} / <i>jplpc/agt</i> m/ <i>store/instance-name/STPD/</i>	--	Base directory for performance data of the PD record type for Store version 2.0 for logical host operation (for each instance) ^{#6}
<i>environment-directory</i> ^{#8} / <i>jplpc/agt</i> m/ <i>store/instance-name/STPI/</i>	--	Base directory for performance data of the PI record type for Store version 2.0 for logical host operation (for each instance) ^{#6}
<i>environment-directory</i> ^{#8} / <i>jplpc/agt</i> m/ <i>store/instance-name/STPL/</i>	--	Base directory for performance data of the PL record type for Store version 2.0 for logical host operation (for each instance) ^{#6}
<i>environment-directory</i> ^{#8} / <i>jplpc/auditlog/</i>	--	Default output directory for the action log files for logical host operation
	<i>jpcauditn.log</i>	Action log file for logical host operation ^{#7}

Legend:

--: Not applicable

#1

This is created by the execution of the `jpccconf inst setup (jpcinssetup)` command.

#2

This file is used internally by PFM - Agent for Enterprise Applications. Do not change or delete it.

#3

This is created when the Agent Store service is started.

#4

This is created when a CCMS Alert Monitor Command (PD_ALMX) record is collected.

#5

This is created when a System Log Monitor Command (PD_SLMX) record is collected.

#6

This is created when Store version 2.0 is used to configure the Store database.

#7

n indicates a numeric value. You can use the `jpccomm.ini` file to change the number of log files.

#8

The environment directory is on the shared disk that was specified when the logical host was created.

H. Migration Steps and Notes on Migration

This appendix describes how to upgrade your PFM - Agent for Enterprise Applications.

You upgrade PFM - Agent for Enterprise Applications by overwriting the existing PFM - Agent for Enterprise Applications.

When PFM - Agent for Enterprise Applications is overwritten, the following items are updated automatically:

- Agent Store service's Store database file
- `ini` file
- Instance environment for PFM - Agent for Enterprise Applications

For details about migration from an old version of Performance Management (upgrading from 07-00 or earlier to 08-00), see the appendix in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

Note

If an old version of PFM - Agent for Enterprise Applications is uninstalled in order to upgrade it, the performance data collected by that version is also deleted and becomes unavailable to the new version.

I. Version Compatibility

PFM - Agent has a data model version as well as a product version.

Because the data model is always upward compatible, report and alarm definitions created by an old version can be used with the new version of the data model.

The following table shows the correspondence among versions for PFM - Agent for Enterprise Applications.

Table I-1: Cross-reference table of PFM - Agent for Enterprise Applications versions

PFM - Agent for Enterprise Applications version	Data model version	Alarm table version for the monitoring template
06-70	3.0	6.70
07-00	4.0	7.00
08-00	5.0	8.00
09-00	5.0	09.00

For details about version compatibility, see the appendix in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

J. Outputting Action Log Data

Performance Management action logs consist of historical information about actions that are linked with the alarm function for exceeded threshold values, such as system loading and start and stop of PFM services.

For example, action logs are output when PFM services start and stop, as well as when the connection status with PFM - Manager changes.

You can output action logs when the version of PFM - Manager or PFM - Base is 08-11 or later.

Action logs constitute a text file in CSV format. You can use them as analysis data by saving them periodically and processing them with a spreadsheet software program.

Output of action logs is set by `jpccomm.ini`. This appendix describes the information that is output as action logs by PFM - Agent and PFM - Base and how to make the settings for outputting action logs.

J.1 Types of events output to the action log

The table below lists and describes the types of events that are output to action logs and when action logs are output by PFM - Agent and PFM - Base. *Type of event* shows the identifiers used to classify the events that are output to action logs.

Table J-1: Types of events that are output to action logs

Type of event	Description	Timing of output by PFM - Agent and PFM - Base
StartStop	Event indicating the start and termination of software	<ul style="list-style-type: none"> Start and stop of PFM services Start and end of the stand-alone mode
ExternalService	Event indicating the result of communication between JP1 products and external services Event indicating occurrence of an abnormal communication	Change in the status of the connection with PFM - Manager
ManagementAction	Event indicating execution of a program's important action Event indicating execution of an action based on another audit category	Execution of an automatic action

J.2 Format for saving the action log files

This subsection describes the format for saving the action log files.

Action logs are output to the default file (current output file). When this file becomes

full, the action logs in the current output file are saved to a separate file (shift file).

To swap action log files:

1. Action logs are output sequentially to the current output file `jpcaudit.log`.
2. When the current output file becomes full, the action logs in that file are saved to a shift file.

The shift file name is the current output file name with a number appended to it. Each time the current output file becomes full, each shift file is renamed to *file-name-number + 1*. Therefore, an older file has a larger number at the end of the file name.

Example:

When the current output file `jpcaudit.log` becomes full, its contents are saved to the shift file `jpcaudit1.log`.

When the current output file becomes full again, its contents are moved to `jpcaudit1.log` and the existing shift file (`jpcaudit1.log`) is renamed to `jpcaudit2.log`.

When the number of log files reaches the maximum value (as specified in the `jpccomm.ini` file), the oldest log file is deleted.

3. The current output file is initialized and new action logs are written.

Whether action logs are to be output, their output destination, and the maximum number of storage files is specified in the `jpccomm.ini` file. For details about making the settings in the `jpccomm.ini` file, see *J.4 Settings for outputting action log data*.

J.3 Format of output action log data

Information about audit events is output to the Performance Management action logs. For action logs, one file is output for each host (physical and logical hosts). An action log's output destination host is as follows:

- When a service is executed: Action logs are output to the host where the service is running.
- When a command is executed: Action logs are output to the host that executed the command.

The following describes the output format, output destination, and output items for action logs.

(1) Output format

<p>CALFHM <i>x.x</i>, <i>output-item-1=value-1</i>, <i>output-item-2=value-2</i>, . . . , <i>output-item-n=value-n</i></p>
--

(2) Output destination

Table J-2: Default action log output directory

Platform	Default output directory
Windows	<i>installation-folder\auditlog\</i>
Windows (for logical host operation)	<i>environment-directory#\jp1pc\auditlog\</i>
UNIX	<i>/opt/jp1pc/auditlog/</i>
UNIX (logical host operation)	<i>environment-directory#\jp1pc/auditlog/</i>

#

The environment directory is on the shared disk that was specified when the logical host was created.

You can use the `jpccomm.ini` file to change the output destination of action logs. For details about how to make settings in the `jpccomm.ini` file, see *J.4 Settings for outputting action log data*.

(3) Output items

There are two types of output items:

- Common output items

Output items common to all JP1 products that output action logs

- Fixed output items

Optional items that are output by the individual JP1 products that output action logs

(a) Common output items

The table below lists and describes the common output items and their values, including the items that are output by PFM - Manager.

Table J-3: Common output items for action logs

No.	Output item		Value	Description
	Item name	Output attribute name		
1	Common specification identifier	--	CALFHM	Identifier indicating that this is the action log format

No.	Output item		Value	Description
	Item name	Output attribute name		
2	Common specification revision number	--	<i>x.x</i>	Revision number used for managing action logs
3	Sequence number	seqnum	<i>sequence-number</i>	Sequence number of action log records
4	Message ID	msgid	<i>KAVExxxx-x</i>	Product's message ID
5	Date and time	date	<i>YYYY-MM-DDThh:mm:ss.sssTZD#</i>	Output date, time, and time zone of the action log
6	Generated program name	progid	JP1PFM	Name of the program where the event occurred
7	Generated component name	compid	<i>service-ID</i>	Name of the component where the event occurred
8	Generated process ID	pid	<i>process-ID</i>	Process ID of the process where the event occurred
9	Generated location	ocp:host	<ul style="list-style-type: none"> • <i>host-name</i> • <i>IP-address</i> 	Location where the event occurred
10	Event type	ctgry	<ul style="list-style-type: none"> • StartStop • Authentication • ConfigurationAccess • ExternalService • AnomalyEvent • ManagementAction 	Category names used to classify the events that are output to action logs
11	Event result	result	<ul style="list-style-type: none"> • Success • Failure • Occurrence 	Result of the event

No.	Output item		Value	Description
	Item name	Output attribute name		
12	Subject identification information	subj:pid	<i>process-ID</i>	One of the following: <ul style="list-style-type: none"> • Process ID that is run by the user operation • Process ID that caused the event • User name that caused the event • Identification information assigned to users on a 1:1 basis
		subj:uid	<i>account-identifier</i> (PFM user/JP1 user)	
		subj:euid	<i>effective-user-ID</i> (OS user)	

Legend:

--: None

#

T indicates a separator in a date and time string.

ZD represents the time zone specifier. One of the following is output:

+hh:mm: Advanced from UTC by hh:mm

-hh:mm: Delayed from UTC by hh:mm

Z: Same as UTC

(b) Fixed output items

The table below lists and describes the fixed output items and their values, including the items that are output by PFM - Manager.

Table J-4: Fixed output items for action logs

No.	Output item		Value	Description
	Item name	Output attribute name		
1	Object information	obj	<ul style="list-style-type: none"> • <i>service-ID-of-PFM-Agent</i> • <i>user-name-added-or-deleted-or-updated</i> (PFM user) 	Operation target
		obj:table	<i>alarm-table-name</i>	
		obj:alarm	<i>alarm-name</i>	

No.	Output item		Value	Description
	Item name	Output attribute name		
2	Action information	op	<ul style="list-style-type: none"> • Start • Stop • Add • Update • Delete • Change Password • Activate (enable) • Inactivate (disable) • Bind • Unbind 	Action that caused the event
3	Permissions information	auth	<ul style="list-style-type: none"> • Administrator user Management • General user Ordinary Administrator • UNIX SuperUser 	Permissions of the user who performed the operation
		auth:mode	<ul style="list-style-type: none"> • PFM authentication mode pfm • JP1 authentication mode jp1 • OS user os 	Authentication mode of the user who performed the operation
4	Output source	outp:host	Host name of PFM - Manager	Host that output the action log
5	Instruction source	subjp:host	<ul style="list-style-type: none"> • <i>name-of-logon-host</i> • <i>name-of-executing-host</i> (only during execution of <code>jpctool alarm (jpcalarm)</code> command) 	Host that issued the operation instruction
6	Free description	msg	<i>message</i>	Message that is output in the event of an alarm and execution of automatic action

For the fixed output items, whether each output item exists depends on the output timing. The following subsections describe the message ID and fixed output items for each output timing.

■ **Start and end of PFM services (StartStop)**

- Output host: Host on which the corresponding service is running
- Output component: Each service that starts and stops

Item name	Attribute name	Value
Message ID	msgid	Start: KAVE03000-I Stop: KAVE03001-I
Action information	op	Start: Start Stop: Stop

■ **Start and end of the stand-alone mode (StartStop)**

- Output host: PFM - Agent host
- Output components: Agent Collector and Agent Store services

Item name	Attribute name	Value
Message ID	msgid	Start of the stand-alone mode: KAVE03002-I End of the stand-alone mode: KAVE03003-I

Note 1

Fixed output items are not output.

Note 2

When each service of PFM - Agent starts, it connects to the PFM - Manager host to perform tasks, such as registering node information and acquiring the most recent alarm definition information. If the service cannot connect to the PFM - Manager host, it starts (in the stand-alone mode) with only some of the functions enabled, such as collection of operation information. KAVE03002-I is then issued to notify the user that the service has started in the stand-alone mode. The service attempts repeatedly at a specified interval to connect to the PFM - Manager host. When the service successfully registers node information and acquires definition information, it ends the stand-alone mode and issues KAVE03003-I. Output of KAVE03002-I and KAVE03003-I in the action logs indicates that PFM - Agent was running in an incomplete status.

■ **Change in the status of connection to PFM - Manager (ExternalService)**

- Output host: PFM - Agent host
- Output component: Agent Collector and Agent Store services

Item name	Attribute name	Value
Message ID	msgid	Transmission of an event to PFM - Manager failed (queuing started): KAVE03300-I Re-transmission of an event to PFM - Manager was completed: KAVE03301-I

Note 1

Fixed output items are not output.

Note 2

If transmission of an event to PFM - Manager fails, the Agent Store service starts queuing events. Events are then queued until three events have been queued. KAVE03300-I is output when event transmission first fails and queuing starts. When connection with PFM - Manager is restored and transmission of queued events is completed, KAVE03301-I is output. Output of KAVE03300-I and KAVE03301-I in action logs indicates the period during which events were not transmitted in real-time to PFM - Manager.

Note 3

The Agent Collector service normally sends events to PFM - Manager via the Agent Store service. If the Agent Store service is stopped for some reason, the Agent Collector service sends events to PFM - Manager directly. When transmission of events to PFM - Manager fails, KAVE03300-I is output (KAVE03301-I is not output because queuing is not started). This action log indicates that there are events that were not sent to PFM - Manager.

■ **Execution of automatic action (ManagementAction)**

- Output host: Host that executed the action
- Output component: Action Handler service

Item name	Attribute name	Value
Message ID	msgid	Creation of a command execution process was successful: KAVE03500-I Creation of a command execution process failed: KAVE03501-W Email transmission was successful: KAVE03502-I Email transmission failed: KAVE03503-W
Free description	msg	Command execution <code>cmd=executed-command-line</code> is output. Email transmission <code>mailto=destination-email-address</code> is output.

Note

KAVE03500-I is output when a command execution process is created successfully. Once this occurs, the results of checking command execution and the execution results are not output to the action logs.

(4) Output example

The following shows an output example of action logs:

```
CALFHM 1.0, seqnum=1, msgid=KAVE03000-I,
date=2007-01-18T22:46:49.682+09:00,
progid=JP1PFM, compid=TA1host01, pid=2076,
ocp:host=host01, ctgry=StartStop, result=Occurrence,
subj:pid=2076,op=Start
```

J.4 Settings for outputting action log data

Use the `jpccomm.ini` file to specify the settings for outputting action logs. If you do not specify these settings, action logs will not be output. This subsection describes the settings and procedure for outputting action logs.

(1) How to specify settings

To specify settings for outputting action logs:

1. Stop all PFM services on the host.
2. Edit the `jpccomm.ini` file using a program such as a text editor.
3. Save the `jpccomm.ini` file and then close it.

(2) Details of the `jpccomm.ini` file

This subsection describes the `jpccomm.ini` file.

(a) Storage directory

Table J-5: jpccomm.ini file storage directory

Platform	Storage directory
Windows	<i>installation-folder</i>
Windows (for logical host operation)	<i>environment-directory</i> [#] \jp1pc\
UNIX	<i>/opt/jp1pc/</i>
UNIX (for logical host operation)	<i>environment-directory</i> [#] /jp1pc/

#

The environment directory is on the shared disk that was specified when the logical host was created.

(b) Format

The following information is defined in the `jpccomm.ini` file:

- Whether action logs are to be output
- Action log output destination
- Number of action log files to be saved
- Size of the action log files

The specification format is as follows:

`"item-name"=value`

The following table lists and describes the settings.

Table J-6: Settings and their initial values that are specified in the `jpccomm.ini` file

No.	Item	Description
1	[Action Log Section]	Specifies the section name. This item cannot be changed.
2	Action Log Mode	Specifies whether action logs are to be output. This item is mandatory. <ul style="list-style-type: none"> • Initial value 0 (Do not output) • Permitted values 0 (Do not output), 1 (Output) If any other value is specified, an error message is issued and action logs are not output.

No.	Item	Description
3	Action Log Dir	<p>Specifies the action log output destination.</p> <p>In a logical host environment, specify a directory on the shared disk. If the specified directory is not on the shared disk, action logs are output to each physical host that constitutes the logical host.</p> <p>If the specified path exceeds the maximum length or access to the specified directory fails, an error message is output to the common log and action logs are not output.</p> <ul style="list-style-type: none"> • Initial value None • Value assumed when the item is omitted (default) <ul style="list-style-type: none"> • In Windows <i>installation-folder\auditlog\</i> • In Windows (for logical host operation) <i>environment-directory#\jplpc\auditlog\</i> • In UNIX <i>/opt/jplpc/auditlog/</i> • In UNIX (for logical host operation) <i>environment-directory#/jplpc/auditlog/</i> <p># The environment directory is on the shared disk that was specified when the logical host was created.</p> <ul style="list-style-type: none"> • Permitted values Character strings from 1 to 185 bytes in size
4	Action Log Num	<p>Specifies the maximum number of log files. This is the total number of the current output file and the shift files.</p> <ul style="list-style-type: none"> • Initial value None • Value assumed when the item is omitted (default) 5 • Permitted values Integer in the range from 2 to 10 <p>If a nonnumeric character is specified, an error message is output and 5 is set as the default.</p> <p>If the specified value is outside the permitted range, an error message is output and the integer in the range from 2 to 10 that is closest to the specified value is set.</p>

No.	Item	Description
5	Action Log Size	<p>Specifies the log file size in kilobytes.</p> <ul style="list-style-type: none">• Initial value None• Value assumed when the item is omitted (default) 2048• Permitted values Integer in the range from 512 to 2,096,128. <p>If a nonnumeric character is specified, an error message is output and the default value of 2,048 is set.</p> <p>If the specified value is outside the permitted range, an error message is output and the integer in the range from 512 to 2,096,128 that is closest to the specified value is set.</p>

K. Version Changes

K.1 Changes in version 09-00

- The name *solution set* has been changed to *monitoring template*.
- The version of the alarm tables for the monitoring template has been changed from 8.00 to 09.00.
- The following messages have been added:
KAVF14152-E, KAVF14178-W, KAVF14179-W
- Due to the addition of commands with a new format that is compatible with the commands for version 08-11 or earlier, the commands for version 09-00 or later are now referred to as follows:
Commands for 09-00 or later (commands for 08-11 or earlier)
- The following alarm tables have been added to the monitoring template:
 - PFM SAP System Template Alarms 09.00
 - PFM SAP System Template Alarms [Background Processing] 09.00
 - PFM SAP System Template Alarms [Background Service] 09.00
 - PFM SAP System Template Alarms [Dialog Utilization] 09.00
- The following alarms have been added to the monitoring template:
 - SystemWideQueue
 - ServerSpecificQueue
 - Utilization %
 - QueueLength %
- The password rules (extended passwords) that have been extended in the SAP system based on SAP NetWeaver 7.0 or later are now supported.
- A description of the SAP user settings that are used by PFM - Agent for Enterprise Applications has been added.
- Setup has been simplified.
- The KAVF14257-E message has been added.
- A Store version can now be selected when a new instance is configured.
- A function for output of action logs has been added.
- A procedure for updating the Store version to 2.0 has been added.

- A method for using a command to change the storage location of performance data has been added.
- A method for registering PFM - Agent for Enterprise Applications into a UNIX version of PFM - Web Console has been added.

K.2 Changes in version 08-00

- The product name has been changed to JP1/Performance Management - Agent Option for Enterprise Applications.
- PFM - Web Console and PFM - Base have been added as supported products.
- The following OS has been removed:
Windows 2000
- The lists of files and folders have been changed due to changes in the organization of the Performance Management products.
- The version of alarm tables for the solution set has been changed from 07-00 to 08-00.

L. Glossary

ASCS instance (ABAP Central Services)

An SAP system instance. This is a unit of a cluster configuration when SAP NetWeaver 7.0 or later is used to run PFM - Agent for Enterprise Applications.

CCMS alert information extraction function

A PFM - Agent for Enterprise Applications function that extracts warnings (alert information) occurring in the Alert Monitor of the computer center management system (CCMS).

central instance

An SAP system instance with a dialog service to which PFM - Agent for Enterprise Applications connects. When SAP NetWeaver 2004 or earlier is used to run PFM - Agent for Enterprise Applications, the central instance is a unit of a cluster configuration.

database ID

Identifier of the database that is added to each of PFM - Agent's records. The database ID indicates the types of records that are stored in the corresponding database. The following are the database IDs:

- PI: Indicates a database for records of the PI record type
- PD: Indicates a database for records of the PD record type

dialog instance

An SAP system instance with a dialog service to which PFM - Agent for Enterprise Applications connects.

extended password

A password that is supported by an SAP system based on SAP NetWeaver 7.0 or later. In such an SAP system, the length of a password has been extended from 8 to 40 characters and the rules for alphabetic characters in a password have been changed from upper-case-only to case-sensitive.

monitor information collection function

A function for collecting SAP system monitor information according to user definitions and storing it as user-defined records for PFM - Agent for Enterprise Applications.

monitoring template

Predefined alarms and reports provided by PFM - Agent. A monitoring template

simplifies preparations for monitoring the operating status of PFM - Agent because complex definitions do not have to be created.

Performance Management

A collective name for a group of software programs that are used to monitor and analyze issues related to system performance. Performance Management consists of the following five program products:

- PFM - Manager
- PFM - Web Console
- PFM - Base
- PFM - Agent
- PFM - RM

service ID

A unique identifier that is added to each Performance Management program service. When a command is used to check the configuration of the Performance Management system or to back up an individual agent's performance data, this Performance Management program service ID is specified in the command.

The format of the service ID depends on the settings of the product name display function. For details, see the chapter that describes the functions of Performance Management in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

system log information extraction function

A PFM - Agent for Enterprise Applications function that extracts log information (system log) on the events and errors that occur in the SAP system. A system log is created for each application server.

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