

**Job Management Partner 1/Performance
Management - Remote Monitor for Platform
Description, User's Guide and Reference**

3020-3-R39(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-9S2C-BJ92 Job Management Partner 1/Performance Management - Base version 09-00 (for Linux AS 4 (x86), Linux ES 4 (x86), Linux AS 4 (AMD64 & Intel EM64T), Linux ES 4 (AMD64 & Intel EM64T), Linux 5 (x86), Linux 5 Advanced Platform (x86), Linux 5 (AMD/Intel 64), Linux 5 Advanced Platform (AMD/Intel 64))

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-GC97 Job Management Partner 1/Performance Management - Remote Monitor for Platform version 09-00 (for Windows Server 2003)

P-2A2C-GC97 Job Management Partner 1/Performance Management - Remote Monitor for Platform version 09-00 (for Windows Server 2008)

P-9S2C-GC92 Job Management Partner 1/Performance Management - Remote Monitor for Platform version 09-00 (for Linux AS 4 (x86), Linux ES 4 (x86), Linux AS 4 (AMD64 & Intel EM64T), Linux ES 4 (AMD64 & Intel EM64T), Linux 5 (x86), Linux 5 Advanced Platform (x86), Linux 5 (AMD/Intel 64), Linux 5 Advanced Platform (AMD/Intel 64))

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■ **Edition history**

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Preface

This manual describes the functions of JP1/Performance Management - Remote Monitor for Platform and the records that are collected by it.

In this manual, Job Management Partner 1 is abbreviated to *JP1*.

Intended readers

This manual is intended for the following readers:

- Users who want to know about the functions of JP1/Performance Management - Remote Monitor for Platform and the records collected by it
- Users who wish to configure and operate a system using JP1/Performance Management and to collect Windows or UNIX performance data

This manual assumes that the user is familiar with Windows or UNIX.

For details about the methods for configuring and operating a system using JP1/Performance Management, 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.

This manual is applicable to both Windows and UNIX operating systems (OSs). Any information specific to one of the OSs only is indicated as such in the manual.

PART 1: Overview

Part 1 provides an overview of JP1/Performance Management - Remote Monitor for Platform.

PART 2: Setup and Operation

Part 2 describes the procedures for installing, setting up, uninstalling, releasing the setup of, backing up, restoring, and operating JP1/Performance Management - Remote Monitor for Platform in a cluster system.

PART 3: Reference

Part 3 describes the monitoring templates, records, and messages for JP1/Performance Management - Remote Monitor for Platform.

PART 4: Troubleshooting

Part 4 describes the procedures for handling problems in JP1/Performance Management - Remote Monitor for Platform.

Related publications

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

Publications related to 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))
- *Job Management Partner 1/Performance Management - Agent Option for Platform Description, User's Guide and Reference* (3020-3-R48(E)), for Windows systems
- *Job Management Partner 1/Performance Management - Agent Option for Platform Description, User's Guide and Reference* (3020-3-R49(E)), for UNIX systems

Publications related to 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 Hitachi products and other products:

Abbreviation		Full name or meaning	
AIX		AIX 5L V5.3	
		AIX V6.1	
Hyper-V		Microsoft(R) Hyper-V(TM)	
HP-UX	HP-UX (IPF) or HP-UX 11i (IPF)	HP-UX 11i V2 (IPF)	
		HP-UX 11i V3 (IPF)	
Internet Explorer		Microsoft(R) 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/NETM/DM		Job Management Partner 1/NETM/DM Client	
		Job Management Partner 1/NETM/DM Manager	
		Job Management Partner 1/NETM/DM 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/Intel64)	Red Hat Enterprise Linux(R) 5 Advanced Platform (AMD/Intel64)
		Linux 5 (AMD/Intel64)	Red Hat Enterprise Linux(R) 5 (AMD/Intel64)
		Linux AS 4 (AMD64 & Intel EM64T)	Red Hat Enterprise Linux(R) AS 4 (AMD64 & Intel EM64T)

Abbreviation		Full name or meaning	
		Linux ES 4 (AMD64 & Intel EM64T)	Red Hat Enterprise Linux(R) ES 4 (AMD64 & Intel EM64T)
	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)
		Linux AS 4 (x86)	Red Hat Enterprise Linux(R) AS 4 (x86)
		Linux ES 4 (x86)	Red Hat Enterprise Linux(R) ES 4 (x86)
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 JP1/AJS	PFM - Agent for JP1/AJS2	Job Management Partner 1/Performance Management - Agent Option for JP1/AJS2
	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

Abbreviation		Full name or meaning	
PFM - Base		Job Management Partner 1/Performance Management - Base	
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	PFM - RM for Platform (UNIX)	Job Management Partner 1/Performance Management - Remote Monitor for Platform (for UNIX systems)
		PFM - RM for Platform (Windows)	Job Management Partner 1/Performance Management - Remote Monitor for Platform (for Windows systems)
PFM - Web Console		Job Management Partner 1/Performance Management - Web Console	
Solaris	Solaris 9	Solaris 9 (SPARC)	
	Solaris 10	Solaris 10 (SPARC)	
		Solaris 10 (x64)	
		Solaris 10 (x86)	
Windows Server 2003	Windows Server 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)	Microsoft(R) Windows Server(R) 2003, Enterprise Edition	
		Microsoft(R) Windows Server(R) 2003, Standard Edition	
		Microsoft(R) Windows Server(R) 2003 R2, Enterprise Edition	

Abbreviation	Full name or meaning
	Microsoft(R) Windows Server(R) 2003 R2, Standard Edition
Windows Server 2008	Microsoft(R) Windows Server(R) 2008 Enterprise
	Microsoft(R) Windows Server(R) 2008 Standard

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

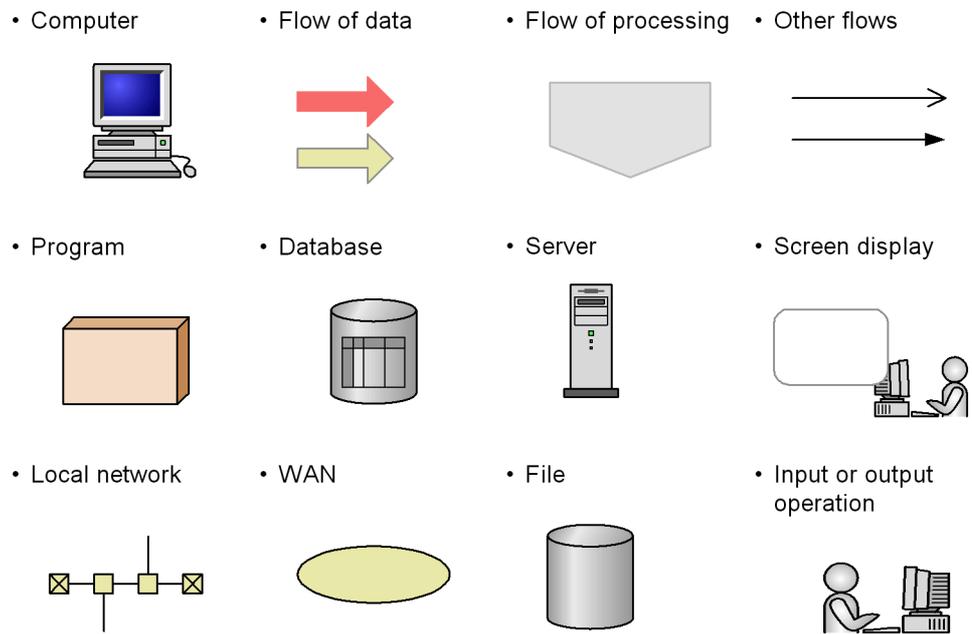
This manual also uses the following abbreviations:

Abbreviation	Full name or meaning
CPU	Central Processing Unit
CSV	Comma Separated Value
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name System
FQDN	Fully Qualified Domain Name
GUI	Graphical User Interface
HTML	Hyper Text Markup Language
IP	Internet Protocol
IPv4	Internet Protocol Version 4
IPv6	Internet Protocol Version 6
LAN	Local Area Network
MSDTC	Microsoft Distributed Transaction Coordinator
NIC	Network Interface Card
ODBC	Open Database Connectivity
OS	Operating System
PDF	Portable Document Format
RAM	Random Access Memory

Abbreviation	Full name or meaning
RAS	Remote Access Service
SNMP	Simple Network Management Protocol
TCP	Transmission Control Protocol
TCP/IP	Transmission Control Protocol/Internet Protocol
UAC	User Access Control
Web	World Wide Web
WMI	Windows Management Instrumentation

Conventions: Diagrams

This manual uses the following conventions in diagrams:



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	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: <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.
<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: <i>copy source-file target-file</i> • 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 for mathematical expressions

This manual uses the following symbols in mathematical expressions:

Symbol	Meaning
x	Multiplication sign
/	Division sign

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: Meaning of "folder" and "directory"

- As a rule, if the *folders* in Windows are basically the same as the *directories* in UNIX, they are referred to as directories in this manual.

Conventions: Performance Management installation folders

In this manual, the *installation folder* means the Windows Performance Management installation folder.

The default Windows Performance Management installation folders are as follows:

Installation folders for Performance Management programs other than PFM - Web Console

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

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

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

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

Installation folder for PFM - Web Console

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

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

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

`system-drive\Program Files (x86)\Hitachi\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 to 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 *OpenView* and the function for linking to these products is referred to as *OpenView linkage*.

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

- HP Network Node Manager i Software v8.10

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Chapter

1. Overview of PFM - RM for Platform

This chapter provides an overview of PFM - RM for Platform.

- 1.1 Purposes of performance monitoring using PFM - RM for Platform
- 1.2 Features of PFM - RM for Platform
- 1.3 Collecting and managing performance data
- 1.4 How to monitor performance

1.1 Purposes of performance monitoring using PFM - RM for Platform

This section describes the purposes of using PFM - RM for Platform to monitor performance.

PFM - RM for Platform remotely monitors the performance of application servers. Performance monitoring is indispensable for maintaining stable system operations.

Specifically, performance monitoring involves the following tasks:

- Finding the causes of system overloading and identifying the effects of overloading on the system resources
- Monitoring the system to see whether it is running normally

By installing PFM - RM for Platform and monitoring system performance, you can determine the causes of system overloads and identify their effects on the system resources.

To use PFM - RM for Platform, you need PFM - Manager, PFM - Base, and PFM - Web Console. However, if you install PFM - RM for Platform on the same host as for PFM - Manager, there is no need to install PFM - Base.

1.1.1 Finding the causes of system overload and identifying its effects on the system resources

If the system load is high for specific reasons, you must restore the system to its normal status in order to minimize adverse effects on the entire system. Therefore, finding the causes of system overloads and identifying their effects on the system resources are important tasks for maintaining stable system operation.

If a performance problem arises, resulting in high system loading, possible causes are as follows:

- There is a memory shortage.
- A program is monopolizing use of specific resources.
- A subsystem has failed or is configured incorrectly.
- There is fluctuation in loading among subsystems.

Obtaining the statuses of the following system resources will assist in correcting these causes:

- Processor
- Memory
- Disk

- Network

PFM - RM for Platform can identify the system resources that are linked to the causes of system overloads by changing various conditions of performance monitoring (such as the number of users that are connected concurrently) and monitoring performance continuously.

Identifying the status of system resources is also useful for evaluating future system operation, such as when you change or adjust the system configuration or when you plan to upgrade the system's resources.

1.1.2 Monitoring to see if the system is running normally

To maintain stable system operation, it is important not only to correct the causes of system overloads but also to check routinely to see if the system is running normally.

You can determine whether the system is running normally by monitoring operation of the following:

- System-provided processes
- Invalid system processes
- Services required by the system

To monitor operation of processes and services, you must use PFM - Agent for Platform. For details about how to monitor processes and services, see the manual *Job Management Partner 1/Performance Management - Agent Option for Platform Description, User's Guide and Reference*.

1.2 Features of PFM - RM for Platform

The following are the principal features of PFM - RM for Platform:

- Monitors multiple hosts without an agent
- Collects and manages performance data by attribute
- Stores performance data
- Uses the collected performance data effectively
- Integrates monitoring and analysis of performance data for multiple monitored hosts
- Easy setting of alarms and reports
- Is applicable to cluster systems

The subsections below describe these features.

1.2.1 Monitoring multiple hosts without installing agents

PFM - RM for Platform can be used to monitor performance remotely.

Remote monitoring is a function for monitoring the operation status of remote servers from a local host without having to install an agent at each application server.

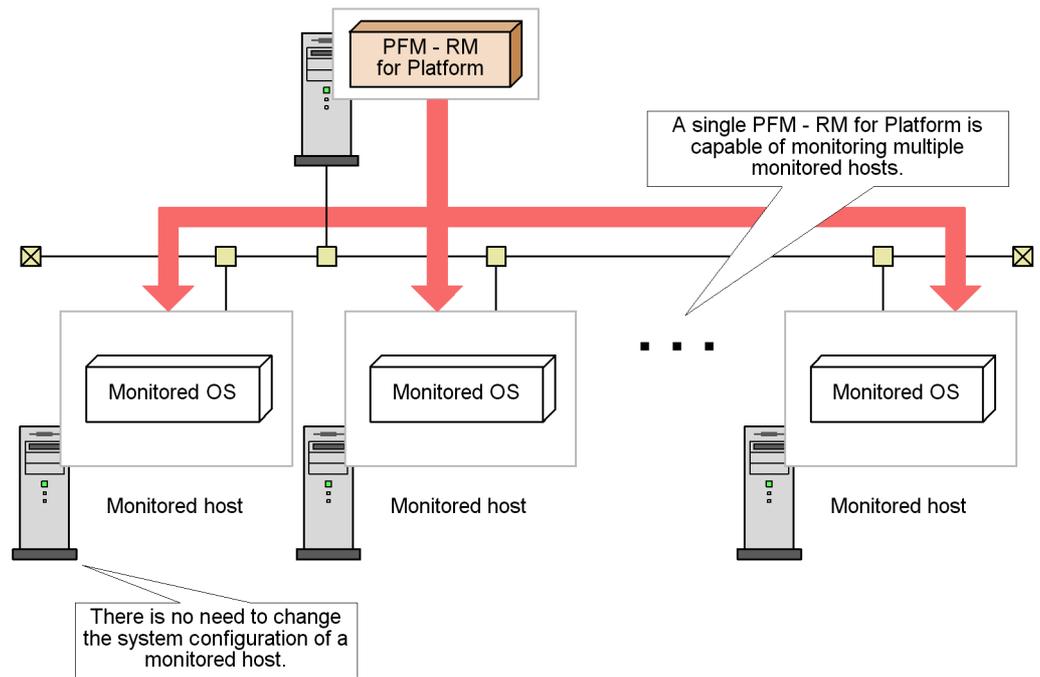
This function enables you to monitor performance data without having to change the system configuration of the monitored application servers (hosts), because there is no need to install PFM - RM for Platform at the application servers. A single PFM - RM for Platform can collect and manage performance data for multiple hosts.

In Performance Management, a host that is monitored by PFM - RM for Platform is called a *monitored host*.

For details about the OSs supported as monitored hosts by PFM - RM for Platform, see *2.1.1 Before installing (for Windows)* or *2.2.1 Before installing (for UNIX)*.

The following figure illustrates monitoring of multiple monitored hosts by PFM - RM for Platform.

Figure 1-1: Monitoring by PFM - RM for Platform



Legend:

 : Performance monitoring

1.2.2 Collecting and managing performance data by attribute

In PFM - RM for Platform, performance data is collected in a format called *records*. A record is a unit for storing collected performance data in a database.

The types of performance data that can be collected have already been defined in PFM - RM for Platform. You use PFM - Web Console to select the records you wish to have collected. For details about how to use PFM - Web Console to select the records to be collected, see the chapter that describes management of operation monitoring data in the *Job Management Partner 1/Performance Management User's Guide*.

Records are classified into two types, according to the characteristics of the performance data to be collected.

- Product Interval record type

For records of the Product Interval record type, the system collects performance data for a specified interval, such as the CPU usage rate over 5 minutes. You can

use these records to analyze changes or trends in the system status over time.

The Product Interval record type is referred to hereafter as the *PI record type*.

- **Product Detail record type**

For records of the Product Detail record type, the system collects performance data that indicates the system status at a specific point in time, such as detailed information about a host that is currently being monitored. You can use these records to obtain a snapshot of the system status at a particular time.

The Product Detail record type is referred to hereafter as the *PD record type*.

Each record is further divided into smaller units called *fields*. In Performance Management, records and fields are referred to collectively as a *data model*. For details about each record, see *5. Records*.

1.2.3 Storing performance data

Collected performance data is stored in PFM - RM for Platform's database in the format of records. This database is called the *Store database*. You can use the performance data stored in the Store database to analyze trends in the operation status of the monitored hosts over time, such as from a point in the past up to the current time.

You use PFM - Web Console to set how performance data stored in the Store database is to be managed. For details about using PFM - Web Console to manage performance data, see the chapter that describes management of operation monitoring data in the *Job Management Partner 1/Performance Management User's Guide*.

1.2.4 Using collected performance data effectively

PFM - RM for Platform enables you to use the performance data collected from monitored hosts effectively, such as for analyzing and identifying trends in the operation status of the hosts.

(1) Graphically displaying the operation status at monitored hosts

By using PFM - Web Console, you can process and display in a graphical format various types of performance data collected by PFM - RM for Platform, such as the CPU usage rate. Because this feature enables you to check trends and changes in collected and summarized performance data graphically, you can easily analyze the operation status of multiple hosts.

In Performance Management, data that is processed and displayed in a graphical format is called a *report*. There are two types of reports:

- *Real-time reports*

A real-time report indicates the current status of monitored hosts.

This type of report is used to check the current status of the system and for possible problems. Performance data that is current at the time when such a report

is displayed is depicted in a real-time report.

■ *Historical reports*

A historical report indicates the status of monitored hosts over a period of time, such as from some point in the past up to the present.

This type of report is used to analyze trends in the operation status of the system. Collected performance data stored in PFM - RM for Platform's Store database is used to display historical reports.

(2) Taking appropriate action in the event of an operational problem at a monitored host

In the event of a problem at a monitored host, such as insufficient system resources, you can take appropriate action on the basis of judgment conditions and threshold values set by PFM - RM for Platform.

For example, you could define that a 90% usage rate of the physical CPU is to be set as the threshold value for a failure condition and that an email notification is to be sent when the threshold value is reached. Whenever this failure condition occurs, the system administrator will be notified of the problem in a timely manner.

If you set a judgment condition, as in this example, the appropriate action is taken automatically, thereby enabling the problem to be resolved at an early stage.

In Performance Management, the operation that is to be taken when a specified threshold value is reached is called an *action*. The following types of actions can be set:

- Sending an email
- Executing a command
- Issuing an SNMP trap
- Issuing a JP1 event

Defining a threshold together with an action constitutes an *alarm*. You use PFM - Web Console to set the alarms for the various type of performance data. For details about how to set alarms, see the chapter that describes operation monitoring by alarms in the *Job Management Partner 1/Performance Management User's Guide*.

When PFM - Web Console is used to set alarms, a table of the individual alarms is associated with PFM - RM for Platform. This table is called an *alarm table*; the association of an alarm table to PFM - RM for Platform is called *binding*.

Once an alarm table has been bound to PFM - RM for Platform, then whenever an item of performance data collected by PFM - RM for Platform reaches a threshold defined as an alarm, the defined action is executed.

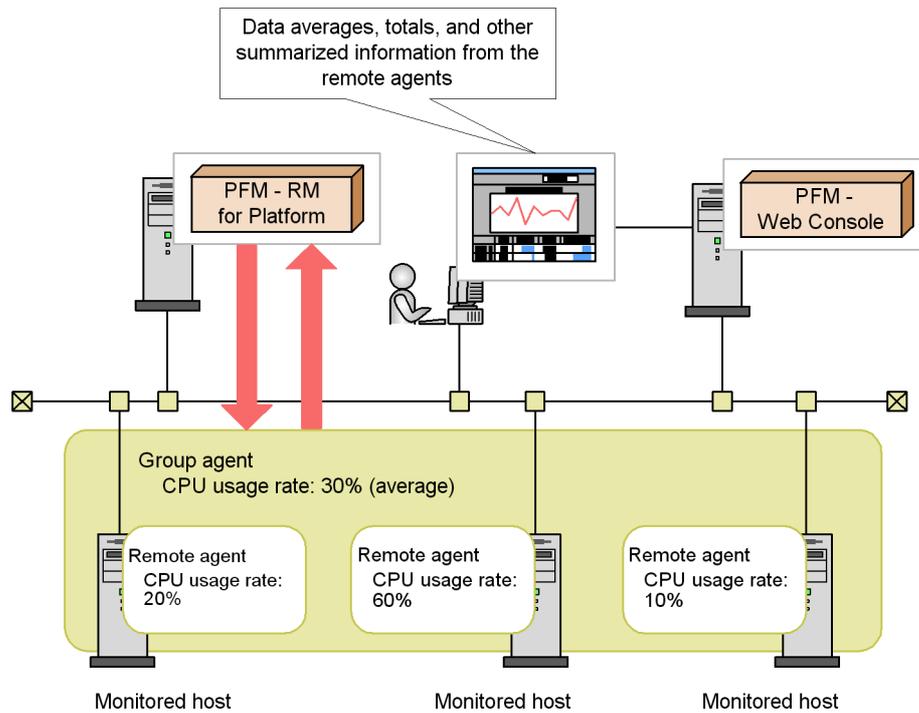
1.2.5 Integrating monitoring and analysis of performance data for multiple monitored hosts

PFM - RM for Platform can not only monitor and analyze performance data for each monitored host, but it can also monitor and analyze the performance data for all monitored hosts in an integrated manner.

PFM - RM for Platform treats each monitored host as a *remote agent*; the integration of remote agents is called a *group agent*.

The following figure shows the concept of remote agents and group agents.

Figure 1-2: Concept of remote agents and group agents



Legend:

 and  : Concept in Performance Management

 : Monitoring and collecting data

The information that is collected as a group agent includes performance data values for multiple monitored hosts, such as averages, totals, maximums, and minimums.

The remote agents that can be integrated as a group agent must belong to the same instance. Therefore, to integrate performance data, you must set the applicable monitored hosts in the same instance environment. For example, if you set instances as described below, you can visually analyze information for all the integrated monitored hosts:

- Setting, in the same instance, multiple guest OSs running in a virtual environment
- Setting, in the same instance, multiple servers that are operated for load distribution purposes

For details about remote agents and group agents, see the chapter that describes management of PFM - RM agents in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

1.2.6 Easy setting of alarms and reports

In order to use reports and alarms and to analyze and obtain the operation status and trends of hosts, you must first define the required monitoring items. In Performance Management, this definition is called a *monitoring template*, and it is provided by PFM - RM for Platform.

A monitoring template enables you to easily prepare for monitoring of the operation status of monitored hosts without having to create complex definitions. For details about the monitoring template, see *4. Monitoring Template*.

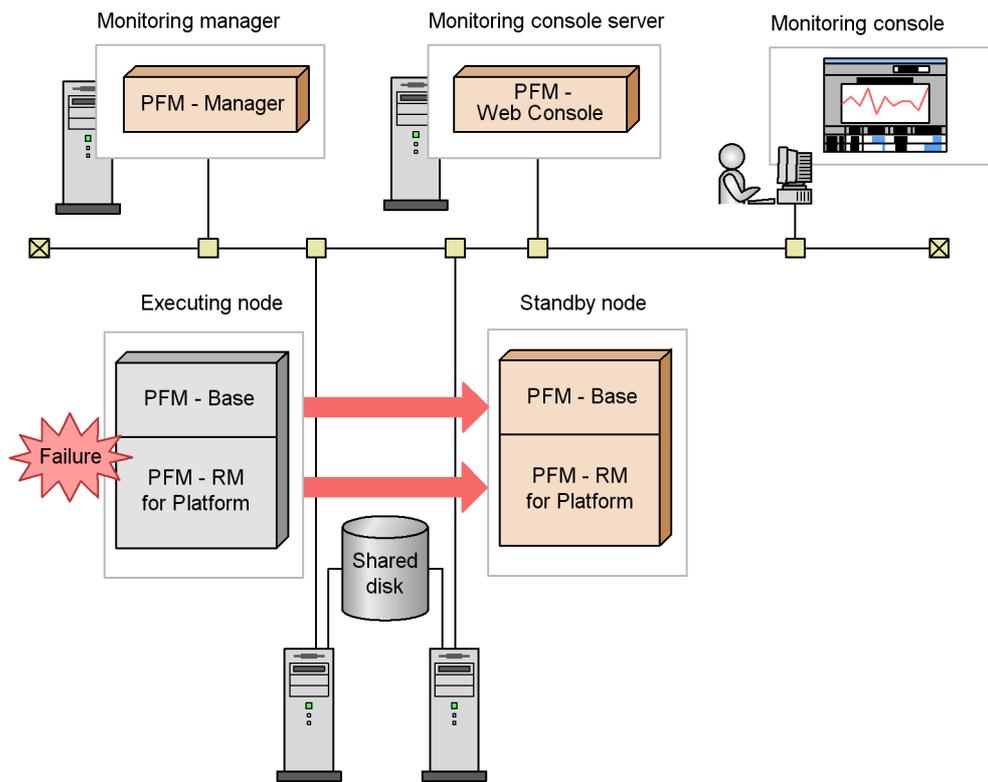
1.2.7 Applicable to cluster systems

You can also use PFM - RM for Platform in a cluster system.

Use of a cluster system enables you to configure a highly reliable system that is able to continue to operate even in the event of a system problem. This enables you to achieve 24-hour/day operation and monitoring by Performance Management.

The following figure shows an example of the operation of Performance Management in the event of a problem on a monitored host in a cluster system.

Figure 1-3: Example of operation in the event of a problem on a monitored host in a cluster system



Legend:
 : Failover

This example configures two environments with the same settings. It includes an *executing node* as the host used for normal operation and a *standby node* as the host used in the event of a failure.

For details about PFM - RM for Platform operation in a cluster system, see 3. *Operation in a Cluster System*.

1.3 Collecting and managing performance data

This section describes the collection and management of performance data.

The performance data collected by PFM - RM for Platform is stored in records of either the PI record type or the PD record type, depending on the characteristics of the data to be collected.

The record type determines the collection and management methods, such as when performance data is collected and whether the performance data is stored in the Store database. For details about the collection and management methods for each record type, see the chapter that describes the Performance Management functions in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

You use PFM - Web Console to set the performance data management methods. For details about setting the methods, see the chapter that describes management of operation monitoring data in the *Job Management Partner 1/Performance Management User's Guide*.

1.4 How to monitor performance

This section describes how to monitor performance.

Performance Management monitors the system operation status using baseline values as threshold values. The *baseline* is the performance data values that are assumed to be free of problems for system operation. Before you start monitoring performance, you must select a baseline on the basis of measurement results.

You should select an appropriate baseline by measuring system performance as follows:

- Measure system performance when the system is operating at peak status.
We recommend that you select the baseline by measuring system performance when there are heavy loads in the operating environment.
- When you change system resources or the operating environment, measure the baseline again.

The baseline may be affected significantly by the system configuration. When you change the system configuration, you should measure the baseline again.

The subsections below present examples of monitoring the performance of the following system resources:

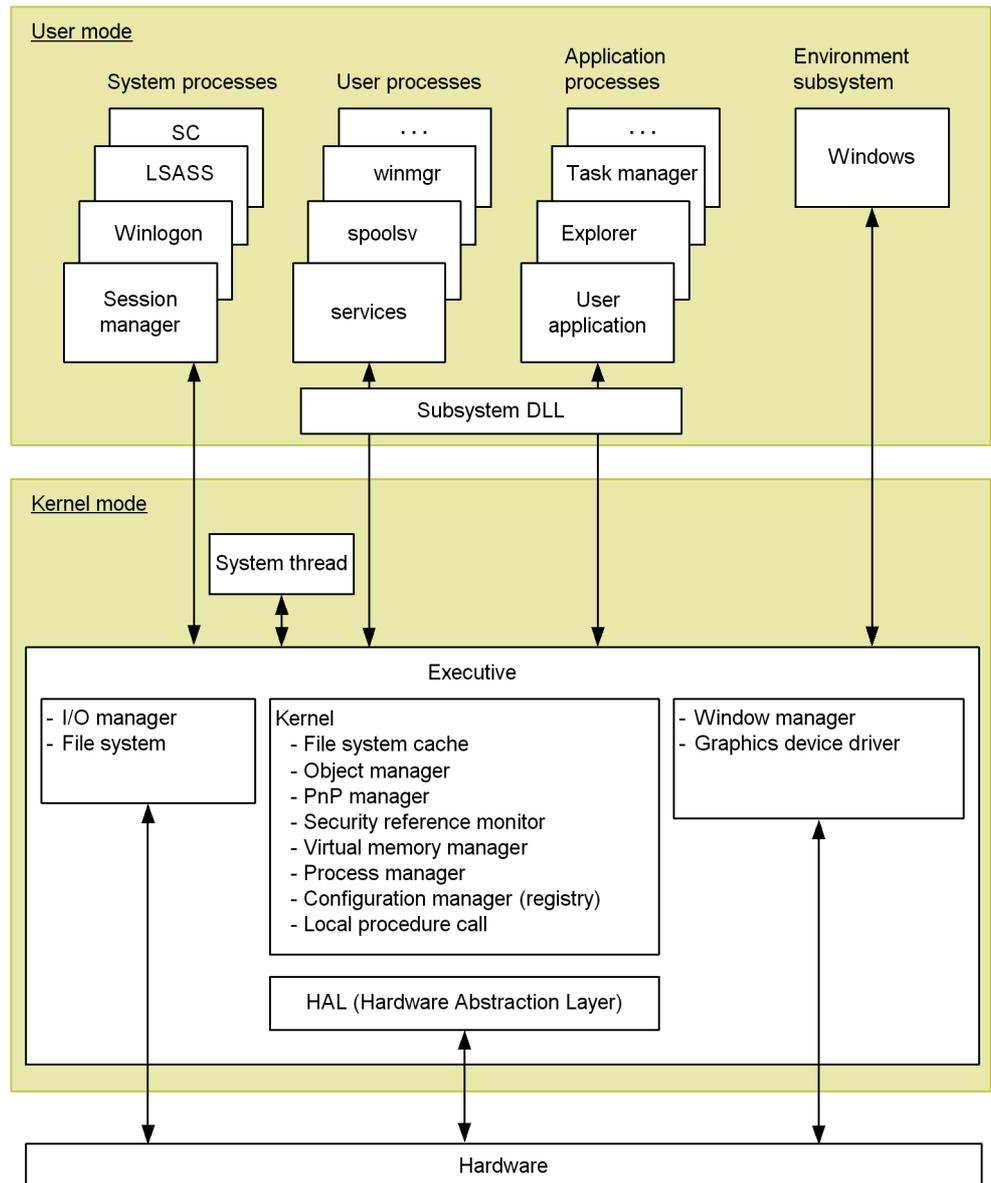
- Processor
- Memory
- Disk
- Network

1.4.1 Example of monitoring a processor

By monitoring processes, you can determine performance trends over the entire system.

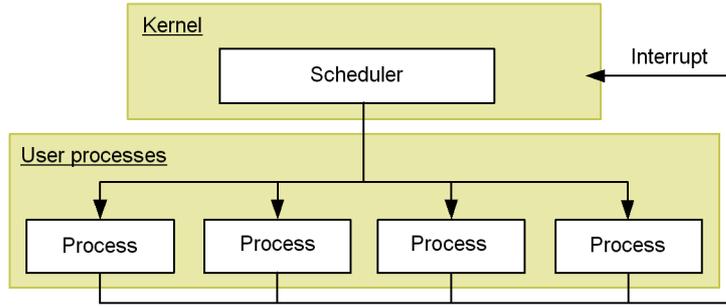
Windows processes consist of two types of processor access modes, called the user mode and the kernel mode. The following figure shows the concept of Windows processes.

Figure 1-4: Concept of Windows processes



UNIX processes consist of operations by kernel processes and operations by user processes. The following figure shows the concept of UNIX processes.

Figure 1-5: Concept of UNIX processes



(1) Overview of processor monitoring

Execution of jobs such as processes involves scheduling by the OS and allocation to the CPU. The queue request count that indicates the number of jobs waiting for CPU allocation tends to be proportional to the volume of loading in the entire system. Therefore, in general, you can obtain the processor usage status by monitoring the CPU usage rate and queue request count.

The following table lists and describes the records and fields that are used by PFM - RM for Platform for monitoring the processor.

Table 1-1: Records and fields used for processor monitoring

No.	Record	Field	Description of value	Interpretation of value
1	PI	Processor Queue Length	Queue request count	When this value continuously exceeds the threshold value, the processor might be busy.
2		Run Queue Avg 5 min	Average number of threads waiting in the execution queue	When this value is large, there might be a problem with processor utilization efficiency.
3		CPU %	CPU usage rate	When this value continuously exceeds the threshold value, the processor might be responsible for a system bottleneck.
4		System %	CPU usage rate in the kernel mode	When this value is large and the CPU % field of the PI record continuously exceeds the threshold value, there might be problems in a specific application process, such as a service or a system process.

No.	Record	Field	Description of value	Interpretation of value
5		User %	CPU usage rate in the user mode	When this value is large and the CPU % field of the PI record continuously exceeds the threshold value, there might be problems in a specific application process, such as a service.
6		Idle %	CPU idle rate	When this value is high, there might be no load on the CPU.
7		Interrupt Counts/sec	Hardware interrupt count (per second)	When the value of this field has increased greatly while the system workload is light, there might be a hardware interrupt problem, such as a slow device resulting in processor overloading.
8	PI_CPU#	CPU %	A processor's CPU usage rate	When this value continuously exceeds the threshold value, the processor might be responsible for a system bottleneck.
9		System %	CPU usage rate for a processor executed in the kernel mode	When this value is large and the CPU % field of the PI_CPU record continuously exceeds the threshold value, there might be problems in a specific application process, such as a service or a system process.
10		User %	CPU usage rate for a processor executed in the user mode	When this value is large and the CPU % field of the PI record continuously exceeds the threshold value, there might be problems in a specific application process, such as a service.
11		Interrupt Counts/sec	Hardware interrupt count (per second) for a processor	When the value of this field has increased greatly while the system workload is light, there might be a hardware interrupt problem, such as a slow device resulting in processor overloading.

#

Each field of the PI_CPU record is used to monitor the performance of one processor.

In a multiprocessor environment, the average value of all CPU usage rates is treated as the CPU usage rate for the system. Therefore, to obtain an accurate CPU usage rate, check the value for each CPU. To identify a process causing a bottleneck, check the CPU usage rate for each process.

You must use PFM - Agent for Platform to check the CPU usage rate for each process. For details about how to monitor processes, see the manual *Job Management Partner 1/Performance Management - Agent Option for Platform Description, User's Guide and Reference*, for Windows systems, or *Job Management Partner 1/Performance Management - Agent Option for Platform Description, User's Guide and Reference*, for UNIX systems.

(2) Example of a monitoring template for monitoring a processor

This subsection describes an example of alarms and reports that are provided as a monitoring template for monitoring a processor.

PFM - RM for Platform provides alarms and reports, such as the CPU Usage alarm and the CPU Used Status (Multi-Agent) report. To obtain more detailed performance information for a processor, you must monitor various aspects of the processor.

(a) Alarms

The following table lists and describes the processor-related alarms.

Table 1-2: Examples of alarms related to processor monitoring

No.	Alarm	Record	Field	Abnormal condition	Warning condition	Interpretation of value
1	CPU Usage	PI	CPU %	>= 90	>= 80	A processor usage rate of 80% or higher is treated as the warning or abnormal status. When this value becomes greater than the threshold value set in the warning or abnormal condition, the process might be causing a system bottleneck. If you find a process that makes excessive use of the processor, you must check the status of the process and then take appropriate action. If there is no process that is using the processor excessively, you might need to consider upgrading the processor or adding a new processor.

No.	Alarm	Record	Field	Abnormal condition	Warning condition	Interpretation of value
2	Kernel CPU		System %	> 75	> 50	<p>A CPU usage rate in the kernel mode of higher than 50% is treated as the warning or abnormal status.</p> <p>When this value becomes greater than the threshold value set in the warning or abnormal condition, there might be a problem in the OS or system operating procedures.</p> <p>Check to see if more processes than the kernel scheduling can overcome have been created or deleted in a short period of time, or if there is a process that uses the processor excessively, and then take appropriate action.</p> <p>If there is no process that is using the processor excessively, you might need to consider upgrading the processor or adding a new processor.</p>
3	Processor Queue		Processor Queue Length	>= 10	>= 2	<p>A consecutive queue request count of 2 or greater is treated as the warning or abnormal status.</p> <p>When this value becomes greater than the threshold value set in the warning or abnormal condition, the process might be causing a system bottleneck.</p> <p>If you find a process that makes excessive use of the processor, you must check the status of the process and take appropriate action. If there is no process that is using the processor excessively, you might need to consider upgrading the processor or adding a new processor.</p>

No.	Alarm	Record	Field	Abnormal condition	Warning condition	Interpretation of value
4	Run Queue		Run Queue Avg 5 min	> 8	> 4	<p>An average thread count greater than 4 in the execution queue is treated as the warning or abnormal status.</p> <p>When this value becomes greater than the threshold value set in the warning or abnormal condition, there might be a problem in the OS or system operating procedures or with a specific application.</p> <p>Check to see if more processes than the kernel scheduling can overcome have been created or deleted in a short period of time, or if there is a process that uses the processor excessively, and then take appropriate action.</p> <p>If there is no process that is using the processor excessively, you might need to consider upgrading the processor or adding a new processor.</p>
5	User CPU		User %	> 85	> 65	<p>A CPU usage rate higher than 65% in the user mode is treated as the warning or abnormal status.</p> <p>When this value becomes greater than the threshold value set in the warning or abnormal condition, there might be a problem with a specific application.</p> <p>Check to see if more processes than the kernel scheduling can overcome have been created or deleted in a short period of time, or if there is a process that uses the processor excessively, and then take appropriate action.</p> <p>If there is no process that is using the processor excessively, you might need to consider upgrading the processor or adding a new processor.</p>

(b) Reports

The following table lists and describes the processor-related reports.

Table 1-3: Examples of reports related to processor monitoring

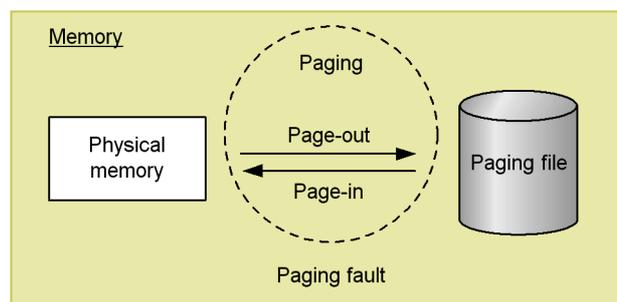
No.	Report name	Information displayed in the report
1	CPU Used Status (Multi-Agent)	Displays the CPU usage status in multiple systems.
2	CPU Used Status	Displays the CPU usage status in the system.
3	CPU Per Processor Status	Displays the processor usage status for each processor.

1.4.2 Example of monitoring memory

By monitoring memory, you can detect a shortage of physical memory or illegal operations by processes.

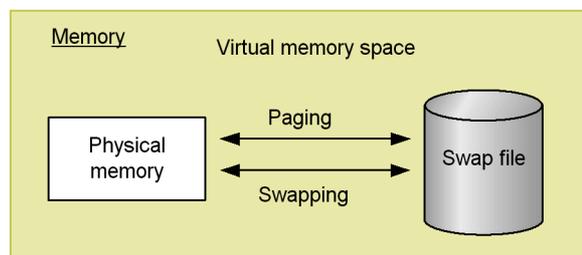
In Windows, memory consists of a physical memory and a paging file. The following figure shows the concept of memory in Windows.

Figure 1-6: Concept of memory in Windows



In UNIX, memory consists of a physical memory and a swap file. The following figure shows the concept of memory in UNIX.

Figure 1-7: Concept of memory in UNIX



(1) Overview of memory monitoring

In general, if there is a memory shortage in the physical memory and paging file (swap

file), which use physical areas in RAM, the entire system's performance is affected adversely. However, a memory shortage alone is not always the cause of a bottleneck in the system.

Of the large amount of memory referenced by programs, the areas that are not accessed for more than a specific amount of time are saved in the paging file and loaded into the physical memory as needed. Because the speed of accessing this paging file (swap file) is much lower than the speed of accessing the physical memory, the efficiency of memory utilization is compromised.

Therefore, paging and page faults can be the cause of impaired system processing speed.

- *Paging and swapping*

Paging and swapping refer to the movement of codes and data between the physical memory and the paging file (swap file). Loading data from the paging file (swap file) into the physical memory is called *page-in*, and saving data from the physical memory into the paging file (swap file) is called *page-out*.

- *Page faults*

Page faults refers to accessing an area that does not exist in the physical memory.

We recommend that you monitor the efficiency of memory utilization, such as paging and page faults, as well as the memory usage. Note that paging occurs even during normal processing. Measure the baseline during stable system operation to determine an appropriate threshold value.

The following table lists and describes the records and fields that are used for monitoring the memory.

Table 1-4: Records and fields used for monitoring the memory

No.	Record	Field	Description of value	Interpretation of value
1	PI	Paging Pages/sec	Paging count (per second)	When the threshold value is exceeded continuously, the memory might be causing a system bottleneck due to frequent paging. Exceeding the threshold value temporarily is acceptable.
2		Page Fault Counts/sec	Number of page faults (per second)	When the threshold value is exceeded continuously, the memory might be causing a system bottleneck due to frequent page faults.
3		Total Mem Mbytes	Capacity of physical memory	Check the capacity of the physical memory.

No.	Record	Field	Description of value	Interpretation of value
4		Free Mem Mbytes	Free physical memory capacity	Check the free physical memory space.
5		Used Mem Mbytes	Amount of physical memory used	When this value is high, a large amount of physical memory might be in use.
6		Used Mem %	Physical memory usage rate	When this value is high, a large amount of physical memory might be in use.
7		Total Swap Mbytes	Capacity of virtual memory	Check the capacity of virtual memory.
8		Free Swap Mbytes	Free virtual memory capacity	Check the free virtual memory space.
9		Used Swap Mbytes	Amount of virtual memory used	When the threshold value is exceeded continuously, you might need a larger physical memory.
10		Used Swap %	Virtual memory usage rate	When the threshold value is exceeded continuously, you might need to expand the paging file.

A memory shortage can also occur due to defective programs.

Take appropriate action as necessary, such as identifying a process that unnecessarily uses a large amount of memory or whose memory usage increases continuously without limit, or monitor each process's memory usage.

You must use PFM - Agent for Platform to monitor each process's memory usage. For details about how to monitor processes, see the manual *Job Management Partner 1/ Performance Management - Agent Option for Platform Description, User's Guide and Reference* for Windows systems or *Job Management Partner 1/Performance Management - Agent Option for Platform Description, User's Guide and Reference* for UNIX systems.

(2) Example of a monitoring template for monitoring memory

This subsection describes an example of alarms and reports that are provided as a monitoring template for monitoring memory.

PFM - RM for Platform provides alarms and reports, such as the Available Memory alarm and the `Memory Used Status (Multi-Agent)` report. To obtain more detailed performance information for the memory, you must monitor various aspects of the memory.

(a) Alarms

The following table lists and describes the memory-related alarms.

Table 1-5: Examples of alarms related to memory monitoring

No.	Alarm	Record	Field	Abnormal condition	Warning condition	Interpretation of value
1	Available Memory	PI	Free Mem Mbytes	< 3	< 4	Free physical memory capacity below 4 is treated as the warning or abnormal status. When this value becomes smaller than the threshold value set in the warning or abnormal condition, a shortage of physical memory might have occurred. If you find a process that makes excessive use of the memory, you must check the status of the process and then take appropriate action. If there is no process that is using the memory excessively, you must take an action such as expanding the memory.
2	Page Faults		Page Fault Counts/sec	>= 5	>= 4	A page fault count of 4 or greater per second is treated as the warning or abnormal status. When this value becomes greater than the threshold value set in the warning or abnormal condition, a memory shortage might have occurred.
3	Pagescans		Page Scan Counts/sec	> 150	> 100	A page scan count per second that exceeds 100 is treated as the warning or abnormal status. When this value becomes greater than the threshold value set in the warning or abnormal condition, a memory shortage might have occurred.
4	Swap Outs		Swapped-Out Pages/sec	> 200	> 100	If more than 100 pages are swapped out per second by swap-out processing, the system treats it as the warning or abnormal status. When this value becomes greater than the threshold value set in the warning or abnormal condition, a memory shortage might have occurred.

No.	Alarm	Record	Field	Abnormal condition	Warning condition	Interpretation of value
5	Used Swap Mbytes		Used Swap Mbytes	$\geq 1024^{\#1}$	$\geq 1024^{\#2}$	If the amount of virtual memory used exceeds the value of the Total Swap Mbytes field, the system treats it as the warning or abnormal status. When this value becomes greater than the threshold value set in the warning or abnormal condition, a memory shortage might have occurred.

#1

Set a value that is about 90% of the value of the Total Swap Mbytes field.

#2

Set the same value as for the Total Mem Mbyte field.

(b) Reports

The following table lists and describes the memory-related reports.

Table 1-6: Examples of reports related to memory monitoring

No.	Report name	Information displayed in the report
1	Memory Used Status (Multi-Agent)	Displays the status of physical memory usage in multiple systems.
2	Memory Used Status	Displays the status of physical memory usage in the system.
3	Pool Nonpaged Status	Displays the size of physical memory that cannot be paged out.
4	System Overview	Displays the operation status of the system.

1.4.3 Example of monitoring the disk

By monitoring the disk, you can detect a shortage of disk resources and identify a bottleneck caused by the disk. If you monitor the disk continuously, you can also identify trends in increasing disk usage, which can help you determine the system configuration and the timing of expansion.

(1) Overview of disk monitoring

The disk stores programs and the data used by the programs. If a shortage of free space occurs on the disk, not only does the system's response become slower but problems such as data loss also occur. A shortage of free disk space may also lead to other types

of performance deterioration, such as a reduction in process response speed.

If there is not enough free disk space, a response wait status might occur when programs input data from the disk and output data to the disk. If the disk is suspected of being responsible for a bottleneck, such as because of a shortage of free disk space, first check if the disk has become fragmented. Next, check if an unreasonably large amount of disk space is being used by invalid files and if sufficient free space has been allocated.

The following table lists and describes the records and fields that are used for monitoring the disk.

Table 1-7: Records and fields used for disk monitoring

No.	Record	Field to be used	Description of value	Interpretation of value
1	PI_PDSK	Busy %	Disk busy rate	When the threshold value is exceeded continuously, there might be a concentration of processing that uses the disk.
2		Avg Disk Time	Average disk I/O operation time	When the threshold value is exceeded continuously, there might be a concentration of processing that uses the disk.
3		Total MBytes/sec	Number of bytes transferred between disks (per second)	When this value is high, the system is considered to be running efficiently.
4	PI_LDSK	Free Mbytes %	Free disk space percentage	When this value is low, there might be a shortage of disk capacity.
5		Free Mbytes	Free disk space	When this value is low, there might be a shortage of disk capacity.

(2) Example of a monitoring template for monitoring the disk

This subsection describes examples of alarms and reports that are provided as a monitoring template for monitoring the disk.

PFM - RM for Platform provides alarms and reports, such as the Disk Busy % alarm and the Avg Disk Time Status report. To obtain more detailed performance of the disk, you must monitor various aspects of the disk.

(a) Alarms

The following table lists and describes the disk-related alarms.

Table 1-8: Examples of alarms related to disk monitoring

No.	Alarm	Record	Field	Abnormal condition	Warning condition	Interpretation of value
1	Disk Busy %	PI_PDSK	ID	<> _Total	<> _Total	A disk busy rate of 80% or higher is treated as the warning or abnormal status. When this value becomes greater than the threshold value set in the warning or abnormal condition, disk access might be busy.
2			Busy %	>= 90	>= 80	
3	Disk Service Time	PI_PDSK	Avg Disk Time	> 0.1	> 0.06	An average disk I/O operation that exceeds 0.06 second is treated as the warning or abnormal status. When this value becomes greater than the threshold value set in the warning or abnormal condition, a very large I/O operation might have occurred.
4	Disk Space	PI_LDSK	Free Mbytes %	< 5	< 15	A free disk space percentage rate that is less than 15% is treated as the warning or abnormal status. When this value becomes less than the threshold value set in the warning or abnormal condition, a shortage of free disk space might have occurred. You need to take an appropriate action, such as deleting unneeded files, compressing files, optimizing the disk, or expanding the disk.
5	I/O Wait Time	PI	Wait %	> 80	> 60	A disk I/O wait time that exceeds 60% is treated as the warning or abnormal status. When this value becomes greater than the threshold value set in the warning or abnormal condition, a delay in I/O operations might have occurred, such as a delay in database update processing.

No.	Alarm	Record	Field	Abnormal condition	Warning condition	Interpretation of value
6	Disk Free Size	PI_LDSK	ID	<> _Total	<> _Total	Unused disk space of less than 10,240 megabytes is treated as the warning or abnormal status. When this value becomes less than the threshold value set in the warning or abnormal condition, a shortage of unused disk space might have occurred. You need to take an appropriate action, such as deleting unneeded files, compressing files, optimizing the disk, or expanding the disk.
7			Free Mbytes	< 5120	< 10240	

(b) Reports

The following table lists and describes the disk-related reports.

Table 1-9: Examples of reports related to disk monitoring

No.	Report name	Information displayed in the report
1	Avg Disk Time Status	Displays the average I/O operation time for the physical disk.
2	Free Megabytes - Logical Disk	Displays information about the logical disk space being used.
3	Physical Disk Busy Status	Displays the percentage of time during which the disk was busy.

1.4.4 Example of monitoring the network

By monitoring network information, you can check the status of response speeds for system-provided functions. Also, continuous monitoring of the network, such as of the amount of data transfer in the network, can assist in evaluating the network configuration and planning for future expansion.

(1) Overview of network monitoring

Identifying a bottleneck in the network requires examination of various factors, such as hardware, client operations, and data transfer rates between servers and clients.

PFM - RM for Platform provides alarms and reports, such as the Network Received alarm and the Network Data report. To obtain more detailed information on network performance, you must monitor various aspects of the network.

The following table lists and describes the records and fields that are used for monitoring the network.

Table 1-10: Records and fields used for network monitoring

No.	Record	Field	Description of value	Interpretation of value
1	PI_NET	Total Bytes/sec	Amount of data transferred (per second)	If NIC is always used to transfer data and this value is often equal to or less than the threshold value, NIC might be causing the bottleneck. When this value is typically greater than the threshold value, a large amount data can be transferred successfully.
2		Rcvd Bytes/sec	Amount of data received (per second)	If NIC is always used to receive data and this value is often equal to or less than the threshold value, NIC might be causing the bottleneck. When this value is typically greater than the threshold value, a large amount data can be received successfully.
3		Sent Bytes/sec	Amount of data sent (per second)	If NIC is always used to send data and this value is often equal to or less than the threshold value, NIC might be causing the bottleneck. When this value is typically greater than the threshold value, a large amount data can be sent successfully.

(2) Example of a monitoring template for monitoring the network

This subsection describes an example of alarms and reports that are provided as a monitoring template for monitoring the network.

PFM - RM for Platform provides alarms and reports, such as the Network Received alarm and the Network Data report.

(a) Alarms

The following table lists and describes the network-related alarms.

Table 1-11: Examples of alarms related to network monitoring

No.	Alarm	Record	Field	Abnormal condition	Warning condition	Interpretation of value
1	Network Received	PI_NET	Rcvd Bytes/sec	≥ 50000 ^{#1}	≥ 50000 ^{#2}	When the amount of data received per second exceeds about 50% of the NIC bandwidth, the system treats it as the warning or abnormal status. When this value becomes greater than the threshold value set in the warning or abnormal condition, you need to take appropriate action, such as upgrading NIC or the physical network.

1. Overview of PFM - RM for Platform

#1

Set a value that is about 70% of the NIC bandwidth.

#2

Set a value that is about 50% of the NIC bandwidth.

(b) Reports

The following table lists and describes the network-related reports.

Table 1-12: Examples of reports related to network monitoring

No.	Report name	Information displayed in the report
1	Network Data	Displays the status of communication between networks.

Chapter

2. Installation and Setup

This chapter describes the procedures for installing and setting up PFM - RM for Platform.

- 2.1 Installation and setup (in Windows)
- 2.2 Installation and setup (in UNIX)
- 2.3 Uninstallation and unsetup (in Windows)
- 2.4 Uninstallation and unsetup (in UNIX)
- 2.5 Changing the PFM - RM for Platform system configuration
- 2.6 Changing the PFM - RM for Platform operation method
- 2.7 Starting the command prompt
- 2.8 Backing up and restoring PFM - RM for Platform
- 2.9 Settings for using a Web browser to reference manuals

2.1 Installation and setup (in Windows)

This section describes the procedures for installing and setting up PFM - RM for Platform in a Windows environment.

2.1.1 Before installing (for Windows)

This subsection describes issues to be considered before you install PFM - RM for Platform.

(1) *Prerequisite OS*

PFM - RM for Platform can run on the following operating system (OS):

- Windows Server 2003
- Windows Server 2008

(2) *Setting up a network environment*

To use Performance Management to run PFM - RM for Platform, you must set up a network environment, such IP addresses and port numbers.

(a) *Setting IP addresses*

You must set up the environment for PFM - RM for Platform in such a manner that an IP address can be determined from the host name. PFM - RM for Platform will not start in an environment in which IP addresses cannot be resolved.

In Performance Management, a host such as a PFM - RM for Platform host that is used in the Performance Management system is called a *monitoring host*.

You use one of the following methods to set host names and IP addresses:

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

For the monitoring host name, use either the real host name or the alias name.

- Using the real host name

In a Windows environment, specify the name in such a manner that the IP address can be resolved from the host name that is obtained from the result of executing the `hostname` command.

Note that Performance Management supports DNS, but not FQDN. This means that when you set the IP address, you must use the host name obtained by the `hostname` command without the domain name.

- Using an alias name

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

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

Notes about setting IP addresses

- If you use Performance Management in multiple LAN environments, use the `jpchosts` file to set IP addresses. For details about using the `jpchosts` file to set IP addresses, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.
- Performance Management will not run on a host where IP addresses are assigned dynamically by DHCP. You must set fixed IP addresses for all monitoring hosts.

(b) Setting port numbers

You must assign a port number to each service of the programs used in Performance Management. Set up the network in such a manner that the port numbers assigned to PFM - RM for Platform can be used for communication.

The table below lists and describes the default port number assigned to various services. For other services, an unused port number is assigned automatically each time the service starts.

Table 2-1: Default port numbers for services (for Windows)

No.	Supported function	Service name	Parameter	Port number	Description
1	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.

2. Installation and Setup

No.	Supported function	Service name	Parameter	Port number	Description
2	OpenView linkage facility	NNM Object Manager	jp1pcovsvr	22292	Port number used for communication between the map manager and the 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.
3	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.
4	Monitoring console communication function	View Server	jp1pcvsvr	22286	Port number used by the View Server service of PFM - Manager. This port number is set at the host where PFM - Manager is installed.
5	Web service function	Web Service	--	20358	Port number used by the Web Service service of PFM - Web Console.
6	Web container function	Web Console	--	20359 20360	Port number used by the Web Console service of PFM - Web Console.

Legend:

--: Not applicable

When you use Performance Management in an environment that includes a firewall, you must use fixed port numbers. For details about how to use fixed port numbers, see the chapter that describes installation and setup in the *Job Management Partner 1/ Performance Management Planning and Configuration Guide*.

(3) OS user permissions required for installation

When you install PFM - RM for Platform, make sure that you use an account that has Administrator permissions.

(4) Prerequisite programs

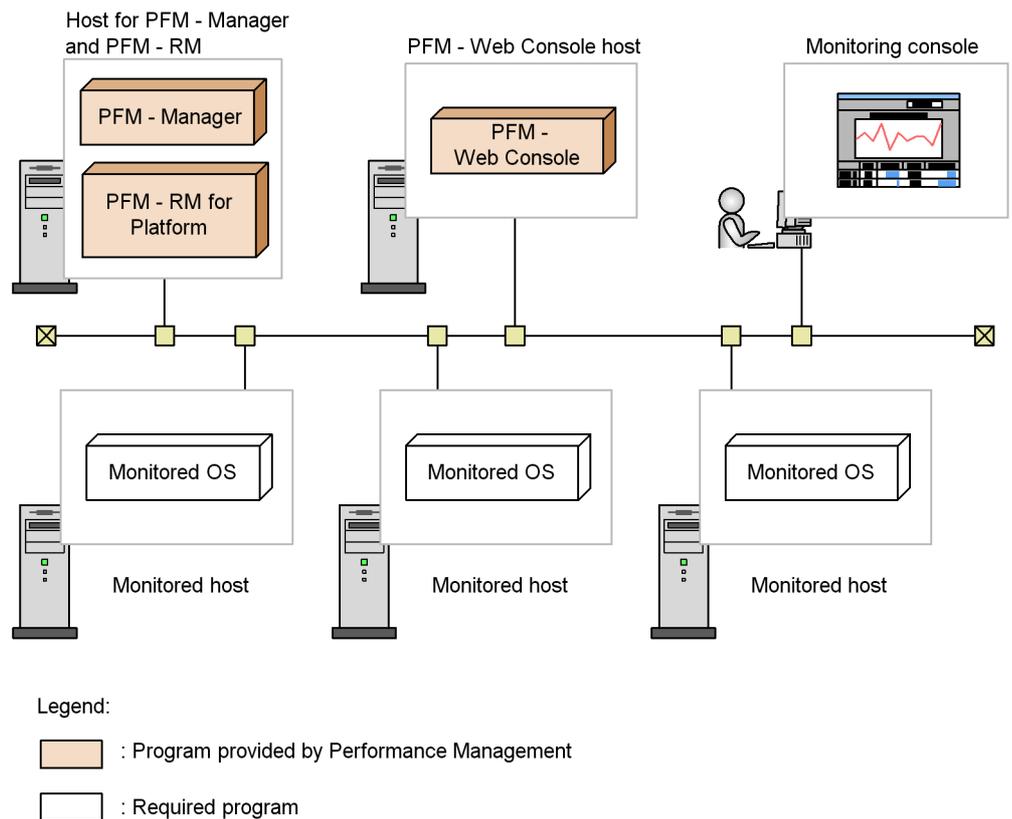
This subsection describes the configuration of programs required in order to install PFM - RM for Platform.

There are two major types of program configurations, as described below. Evaluate the program configurations from the perspective of your system environment.

When installing PFM - RM for Platform on the PFM - Manager host

With this program configuration, PFM - RM for Platform is installed on the same host as PFM - Manager. The following figure shows the program configuration.

Figure 2-1: Program configuration (when PFM - RM for Platform and PFM - Manager are installed on the same host (for Windows))

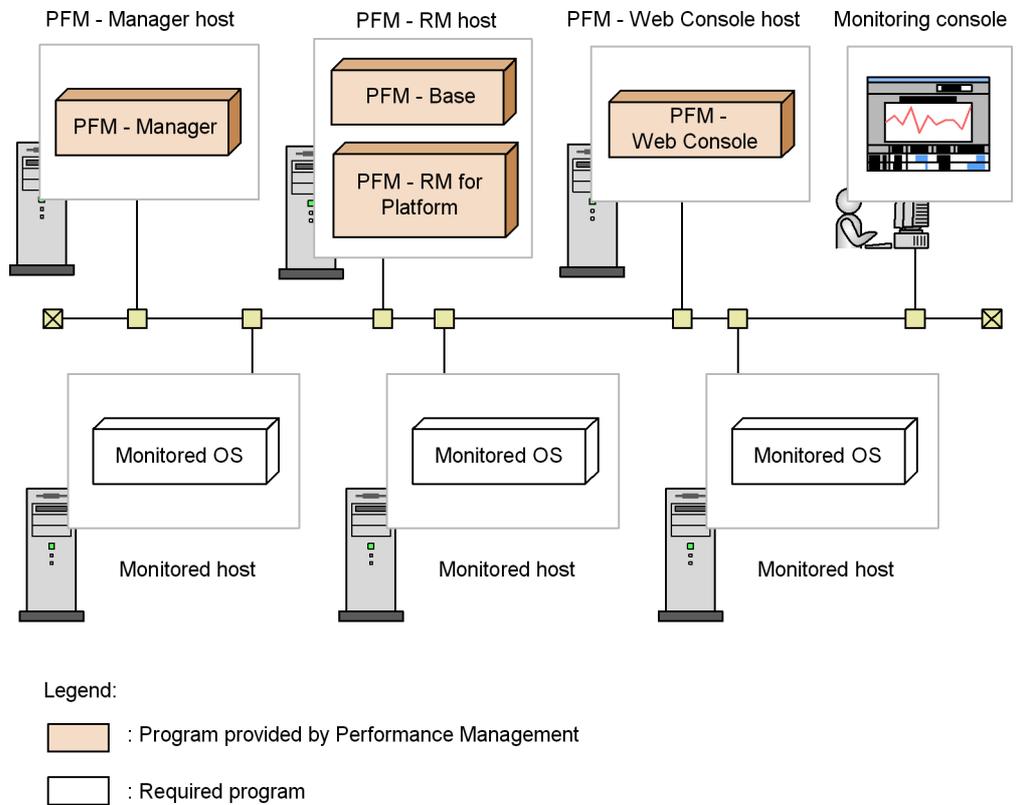


When installing PFM - RM for Platform on a host other than the PFM - Manager host

With this program configuration, PFM - RM for Platform is installed on a host

other than the PFM - Manager host. If you use this program configuration, you must install PFM - Base on the same host as for PFM - RM for Platform. The following figure shows the program configuration.

Figure 2-2: Program configuration (when PFM - RM for Platform and PFM - Base are on the same host (for Windows))



(a) Prerequisite OSs for monitored hosts

A monitored host must be using one of the following OSs:

- Windows Server 2003
- Windows Server 2008

(b) Prerequisite programs for Performance Management

PFM - Manager or PFM - Base must be available on the host where PFM - RM for Platform is installed.

If you install PFM - RM for Platform on a host where PFM - Manager is available,

PFM - Base is not required. If you install multiple PFM - RMs on a host where PFM - Base is available, you need only one PFM - Base.

You also need PFM - Web Console in order to use PFM - RM for Platform to monitor the operation of monitored hosts.

(5) Environment settings required for collecting performance data (for Windows)

PFM - RM for Platform uses WMI to collect performance data from monitored hosts. Performance data cannot be collected if WMI connection settings have not been specified. Therefore, you must specify WMI settings at the PFM - RM host as well as at the monitored hosts.

The following describes the required WMI settings.

(a) Setting the user accounts

To use WMI, you need accounts for the PFM - RM host and for the monitored hosts.

- PFM - RM host account

To set up the host account, specify the values appropriate to the `RMHost_User`, `RMHost_Password`, and `RMHost_Domain` settings shown in Table 2-3. You specify this account when you set up an instance.

If you run PFM - RM for Platform in a cluster system, set up the account for the PFM - RM host so that it is possible to log on to both the executing system and the standby system by specifying the same user name and password.

- Monitored host accounts

To set up a monitored host account, specify the values appropriate to the `User`, `Password`, and `Domain` settings shown in Table 2-5. You specify such an account when you set up each monitoring target.

Note that a monitored host account must be set as a member of the Administrators, Performance Log Users, or Performance Monitor Users group.

Notes about setting up user accounts

If the OS of the monitored host is Windows Server 2008, the UAC security function is enabled, and an account other than Built-in Administrator is used, then this account must be set as a member of the Performance Log Users or Performance Monitor Users group.

(b) Setting the WMI service

Set the WMI service startup option for monitored hosts to a value other than **Disabled**. If it is set to **Disabled**, performance data will not be collected.

(c) WMI connection settings

Specify the WMI connection settings at both the PFM - RM host and the monitored

hosts. For details about the WMI connection settings, see *2.1.5 WMI connection setting method*.

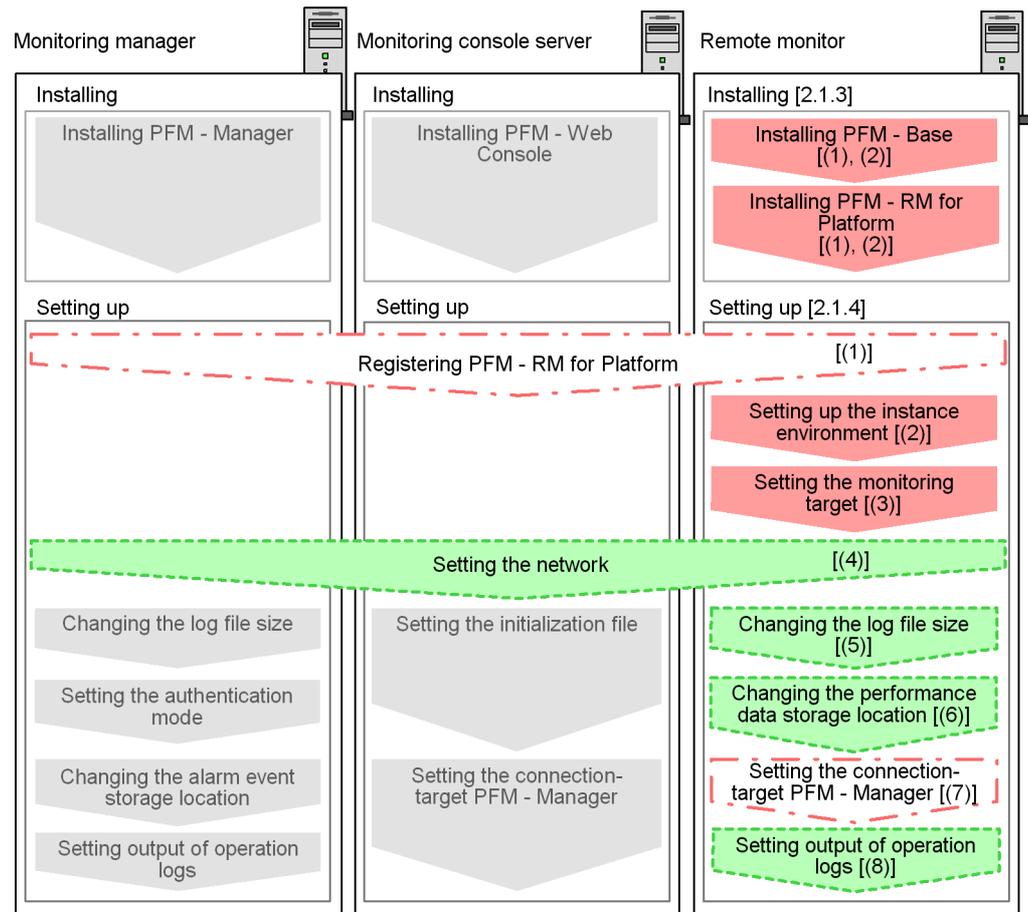
2.1.2 Installation and setup procedures (for Windows)

This subsection describes the procedures for installing and setting up PFM - RM for Platform.

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*.

The following figure shows the procedures for installing and setting up PFM - RM for Platform.

Figure 2-3: Installation and setup procedures (for Windows)



Legend:

-  : Required setup item
-  : Setup item that is required depending on the situation
-  : Optional setup item
-  : Item whose procedure is described in the *Job Management Partner 1/ Performance Management Planning and Configuration Guide*
- [] : Reference

Note:

These procedures are applicable when PFM - RM for Platform is installed on a host other than the PFM - Manager host.

2.1.3 Installation procedure (for Windows)

This subsection describes how to install PFM - RM for Platform in a Windows environment.

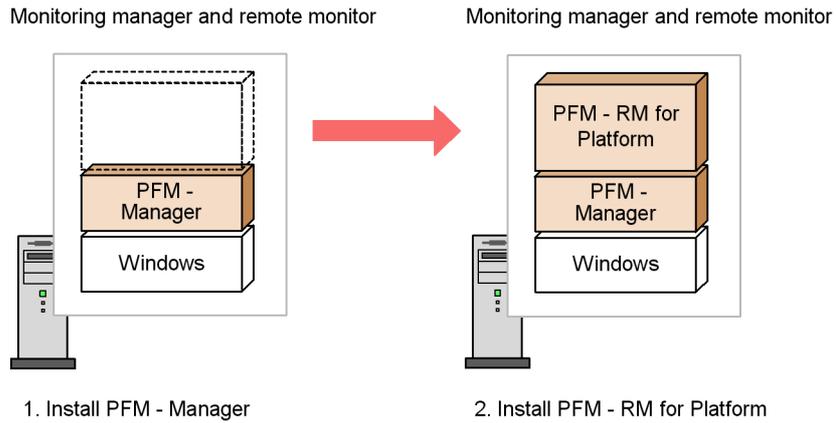
(1) Program installation sequence

This subsection describes the order in which PFM - RM for Platform and its prerequisite programs are to be installed.

When installing PFM - RM for Platform on the PFM - Manager host

Install PFM - Manager first and then install PFM - RM for Platform.

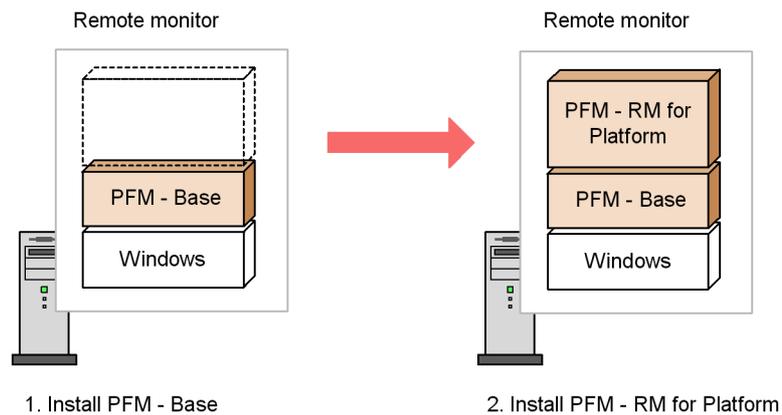
Figure 2-4: Program installation sequence (when PFM - RM for Platform and PFM - Manager are on the same host (for Windows))



When installing PFM - RM for Platform on a host other than the PFM - Manager host

Install PFM - Base first and then install PFM - RM for Platform.

Figure 2-5: Program installation sequence (when PFM - RM for Platform and PFM - Base are on the same host (for Windows))



Legend:

 : Program provided by Performance Management

 : Required program

If you install multiple PFM - RMs on the same host, you can install the individual PFM - RMs in any order.

(2) Installation procedure

This subsection describes how to install PFM - RM for Platform.

The two ways to install PFM - RM for Platform in a Windows environment are by using the provided CD-ROM or by using 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*, for Windows systems.

Precautions regarding all operating systems

If any Performance Management programs and services are running on the host where the program is to be installed, stop all the active programs and services. For details about how to stop services, see the chapter that describes starting and stopping Performance Management in the *Job Management Partner 1/Performance Management User's Guide*.

Precautions regarding installation in a Windows Server 2008 environment

If user account control functionality (UAC) is enabled on the operating system,

the User Account Control dialog box might be displayed during installation. If this dialog box is displayed, click the **Continue** button to continue installation, or click the **Cancel** button to cancel installation.

To install from the provided CD-ROM:

1. At the host where PFM - RM for Platform is to be installed, log on as a user with Administrator permissions.
2. Stop all services of Performance Management programs that are running.

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

Note concerning the services to be stopped

You must stop all Performance Management services on physical and logical hosts. For details about how to stop services, see the chapter that describes starting and stopping Performance Management in the *Job Management Partner 1/Performance Management User's Guide*.

3. Insert the provided CD-ROM.

The installer starts. Install the program by entering necessary information, in accordance with the installer's instructions.

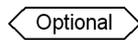
Note

You can specify a desired Performance Management program installation folder and program folder the first time you install each Performance Management program on the target host; the exception to this capability is for PFM - Web Console.

During any subsequent installation procedure, the installation folder and program folder specified during the initial installation are specified.

2.1.4 Setup procedure (for Windows)

This subsection describes how to set up PFM - RM for Platform.



indicates the following setup items:

- Setup item required depending on the environment in use
- Setup item for changing a default setting

(1) Registering PFM - RM for Platform

To achieve central management of PFM - RM for Platform in the Performance Management system, you must register PFM - RM for Platform into PFM - Manager and PFM - Web Console.

You must register PFM - RM for Platform at the following times:

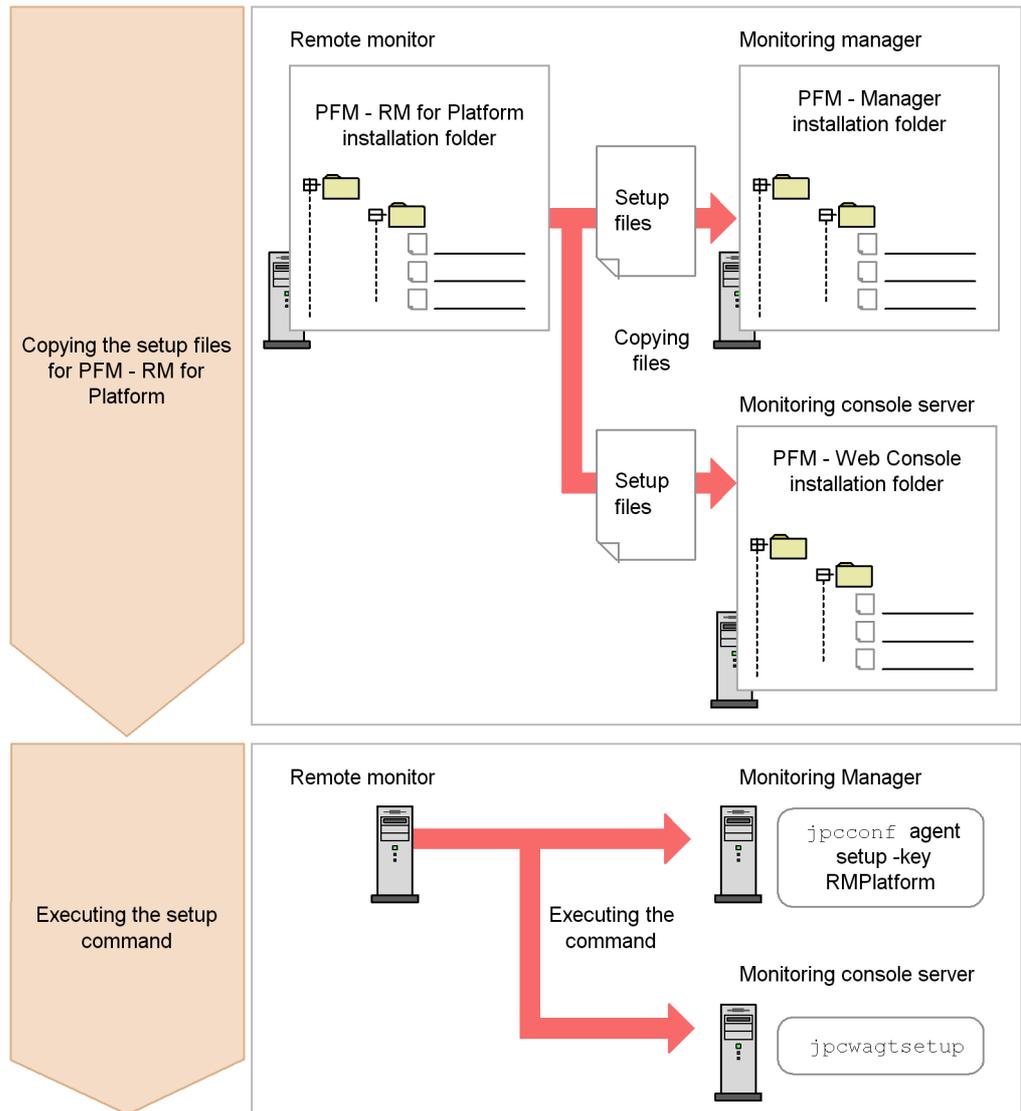
- Whenever you add a new PFM - RM for Platform to the Performance Management system.

Note: If a PFM - RM for Platform has already been registered and you are adding a new PFM - RM for Platform of the same version, there is no need to register the new PFM - RM for Platform.

- When you update the Data model version for the registered PFM - RM for Platform.

The following figure shows the procedure for registering PFM - RM for Platform.

Figure 2-6: Procedure for registering PFM - RM for Platform (for Windows)



Notes about registering PFM - RM for Platform

- Register PFM - RM for Platform before you set up an instance environment.
- If you install different versions of PFM - RM for Platform on separate hosts, set up old versions before you set up new versions.

- If you install PFM - RM for Platform on the same host as where PFM - Manager is installed, the `jpccconf agent setup` command executes automatically.
- When PFM - RM for Platform is registered, folders named `RM Platform` are created on the **Reports** and **Alarms** pages of PFM - Web Console. If you have already created a folder or file named `RM Platform` on the **Reports** page, you must rename it before starting the registration procedure.

The following subsections describe how to register PFM - RM for Platform.

(a) Copying the setup files for PFM - RM for Platform

Copy the setup files from the PFM - RM host to the hosts where PFM - Manager and PFM - Web Console are installed.

To copy the setup files:

1. Stop PFM - Web Console.

If PFM - Web Console is running, stop it.

2. Copy the setup files in the binary mode.

Copy the files from the PFM - RM host to the PFM - Manager and PFM - Web Console hosts.

The following table lists the source file storage locations and the copy destination locations.

Table 2-2: Setup files to be copied (for Windows)

No.	Source (setup files for PFM - RM for Platform)	Target		
		Program name	OS	Target folder
1	<i>PFM-RM-for-Platform-installation-folder\setup\jpcagt7w.EXE</i>	PFM - Manager	Windows	<i>PFM-Manager-installation-folder\setup</i>
2	<i>PFM-RM-for-Platform-installation-folder\setup\jpcagt7u.Z</i>		UNIX	<i>/opt/jp1pc/setup/</i>
3	<i>PFM-RM-for-Platform-installation-folder\setup\jpcagt7w.EXE</i>	PFM - Web Console	Windows	<i>PFM-Web-Console-installation-folder\setup</i>
4	<i>PFM-RM-for-Platform-installation-folder\setup\jpcagt7u.Z</i>		UNIX	<i>/opt/jp1pcwebcon/setup/</i>

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

At the PFM - Manager host, execute the setup command for PFM - RM for Platform.

Execute the following command:

```
jpccconf agent setup -key RMPlatform
```

Notes about executing the command

Before you execute the command, stop all Performance Management programs and services. An error may occur if the `jpccconf agent setup` command is executed before all Performance Management programs and services have stopped completely. If an error has occurred, re-execute the `jpccconf agent setup` command.

After you have executed the setup command at the PFM - Manager host, you may delete the setup files for PFM - RM for Platform that were copied to the PFM - Manager.

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

At the PFM - Web Console host, execute the setup command for PFM - RM for Platform.

Execute the following command:

```
jpcwagtsetup
```

After you have executed the setup command at the PFM - Web Console host, you may delete the setup files for PFM - RM for Platform that were copied to the PFM - Web Console.

(2) Setting up an instance environment

Set up an instance environment for PFM - RM for Platform at the PFM - RM host. To set multiple instance environments, repeat this procedure.

Notes about setting instance environments

Before you set instance environments, make sure that the procedure described in *2.1.1(5) Environment settings required for collecting performance data (for Windows)* has been completed and the correct environment has been set up.

The table below lists and describes the instance environment setting items. Check this information before you start the operation.

Table 2-3: Instance environment setting items for PFM - RM for Platform (for Windows)

No.	Item name	Description	Setting	Default	Whether updatable by the jpcconf inst setup command
1	Interval	Specifies a collection interval for the collection process.	Specify a value in the range from 60 to 3,600 (seconds).	300	U
2	Std_Category ^{#1}	Specifies whether the collection process is to collect basic information (PI and PI_CPU records).	Specify one of the following values: <ul style="list-style-type: none"> Y: Collect N: Do not collect 	Y	U
3	Disk_Category ^{#1}	Specifies whether the collection process is to collect disk information (PI_PDSK and PI_LDSK records).	Specify one of the following values: <ul style="list-style-type: none"> Y: Collect N: Do not collect 	Y	U
4	Network_Category ^{#1}	Specifies whether the collection process is to collect network information (PI_NET record).	Specify one of the following values: <ul style="list-style-type: none"> Y: Collect N: Do not collect 	Y	U
5	RMHost_User	Specifies the user account ^{#2} used at the PFM - RM host.	From 1 to 256 bytes of characters can be specified. The tab character cannot be used.	--	U
6	RMHost_Password	Specifies the password for the account used at the PFM - RM host. The characters entered in this item are not displayed on the screen. If you specify this password, you will be prompted to confirm by re-entering the same password.	From 1 to 256 bytes of characters can be specified. The tab character cannot be used.	--	U

No.	Item name	Description	Setting	Default	Whether updatable by the jpcconf inst setup command
7	RMHost_Domain	Specifies the domain name to which the account used at the PFM - RM host belongs. <ul style="list-style-type: none"> If this account belongs to a workgroup, specify nothing. 	From 1 to 256 bytes of characters can be specified. The tab character cannot be used.	No domain name is specified.	U
8	Log_Size	Specifies the maximum size of one agent log file. #3	Specify a value in the range from 1 to 32 (megabytes). A value of 3 or greater is recommended.	3	U

Legend:

U: Updatable

--: Not set by default

#1

The Std_Category, Disk_Category, and Network_Category settings take precedence over the collection settings for the individual records.

For example, if you set Std_Category to N (do not collect), a PI record is handled as follows:

- The PI record information is not recorded in the Store database.
- If an attempt is made to display a real-time report based on PI records, the KAVJS5001-I error message is displayed.
- If an alarm is bound to a PI record, that alarm will not function.

#2

If you run PFM - RM for Platform in a cluster system, specify an account that can log onto both the executing node and the standby node using the same user name and password.

#3

The following formula can be used to estimate the agent log file size:

$$\text{Agent log (kilobytes)} = ((a \times 24 \times 3600)/b \times 4)/(4 \times 1024)$$

Legend:

a: Number of days agent logs are stored

b: Interval value of the instance

For agent logs, the maximum number of files collected for each instance is (8 + the number of monitoring targets x 4). If there is not enough free space on the hard disk, agent logs result in an output error. For details about agent logs, see 7.3 *Log information*.

Use the `jpccconf inst setup` command to set up an instance environment.

To set up an instance environment:

1. Execute the `jpccconf inst setup` command.

The command sets an instance environment with an instance name of `inst1`:

```
jpccconf inst setup -key RMPlatform -inst inst1
```

For details about the `jpccconf inst setup` command, see the chapter that describes commands in the manual *Job Management Partner 1/Performance Management Reference*.

2. Set up an instance environment for PFM - RM for Platform.

Enter each instance environment setting for PFM - RM for Platform according to the command's instructions. For details about each instance environment setting, see Table 2-3. After you enter each setting, press the **Enter** key. To use a displayed default value, simply press the **Enter** key.

The following example sets all instance environment settings to the default values:

```
C:\Program Files\Hitachi\jplpc\tools>jpccconf inst setup -key
RMPlatform -inst inst1
Interval                [300]                :<Enter>
Std_Category            [Y]                  :<Enter>
Disk_Category           [Y]                  :<Enter>
Network_Category        [Y]                  :<Enter>

RMHost_User              :rmuser<Enter>
RMHost_Password          :rmpass#1<Enter>
Re-enter :rmpass#1<Enter>
RMHost_Domain            []                       :<Enter>
```

2. Installation and Setup

```

Log_Size (MB) [3] :<Enter>
KAVE05080-I The instance environment is now being created.
(servicekey#2=RMPlatform, inst=inst1)
KAVE05081-I The instance environment has been created.
(servicekey#2=RMPlatform, inst=inst1)

```

#1

Re-entry of the password is prompted. The entered password is not displayed on the screen.

#2

If PFM - Manager's product name display function is disabled, agt7 is displayed for servicekey.

When all the settings have been entered, the instance environment is configured. The following table shows the folder structure of an instance environment.

Table 2-4: Folder structure of an instance environment (for Windows)

No.	Storage folder	File name	Description
1	<i>PFM-RM-for-Platform-installation-folder#1\agt7\agent\instance-name</i>	jpcagt.ini	Service startup initialization file of Remote Monitor Collector
2		jpcagt.ini.lock	Lock file for the service startup initialization file of Remote Monitor Collector (for each instance)
3		jpcagt.ini.model#2	Sample of a service startup initialization file of Remote Monitor Collector
4		status.dat	Intermediate file for internal processing
5		tstatuses.dat	Virtual Agent status information#3
6		targetlist.ini	List of monitoring targets
7		grouplist.ini	List of groups
8		GARULES.DAT	Grouping rule description file
9		targets	Storage folder for remote agent
10		groups	Storage folder for group agent
11		log	Storage folder for log files

No.	Storage folder	File name	Description
12	<i>PFM-RM-for-Platform-installation-folder</i> ^{#1} \agt7\store\ <i>instance-name</i>	*.DB	Performance data file
13		*.IDX	Index files for performance data files
14		*.LCK	Lock files for performance data files
15		jpcsto.ini	Service startup initialization file of Remote Monitor Store
16		jpcsto.ini.model ^{#2}	Model file for the service startup initialization file of Remote Monitor Store
17		status.dat	Intermediate file for internal processing
18		*.DAT	Definition file for a data model
19		dump	Export folder
20		backup	Backup folder
21		partial	Partial backup folder
22		import	Import folder
23		log	Storage folder for log files

#1

If you run a logical host, replace *PFM-RM-for-Platform-installation-folder* with *environment-folder*\jpc. An environment folder is a folder on the shared disk that is specified when the logical host is created.

#2

Use these sample files when you want to restore the settings to their initial values from when the instance environment was configured.

#3

Created when the health check function is enabled.

To change an instance environment, re-execute the `jpcconf inst setup` command and then update each instance environment setting. For details about updating the instance environment settings, see *2.6.2 Updating an instance environment*.

You can change some settings by using PFM - Web Console to edit properties. For details about the information that can be changed by editing properties, see *E.1 List of*

properties of the Remote Monitor Store service.

In an instance environment, the service IDs and Windows service names are as follows:

Service IDs in an instance environment

- For the Remote Monitor Collector service
`7Ainstance-number instance-name [host-name]`
- For the Remote Monitor Store service
`7Sinstance-number instance-name [host-name]`
- For the Group Agent service
`7Ainstance-number instance-name [All@host-name]`

In PFM - RM for Platform, the instance name specified in the `jpccconf inst setup` command is displayed.

If the host name of the PFM - RM host is `host1`, and `inst1` is specified as the instance name, the service IDs will be as follows:

- For the Remote Monitor Collector service
`7A1inst1 [host1]`
- For the Remote Monitor Store service
`7S1inst1 [host1]`
- For the Group Agent service
`7A1inst1 [All@host1]`

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

Windows service names in an instance environment

- For the Remote Monitor Collector service
`PFM - RM for Platform instance-name`
- For the Remote Monitor Store service
`PFM - RM Store for Platform instance-name`

If `inst1` is specified as the instance name, the service names will be as follows:

- For the Remote Monitor Collector service
`PFM - RM for Platform inst1`

- For the Remote Monitor Store service

PFM - RM Store for Platform inst1

For details about the Windows service names, see the naming rules provided in the appendix in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*. For details about the Windows service names when a logical host is used for operation, see the chapter that describes cluster system configuration and operation in the *Job Management Partner 1/Performance Management User's Guide*.

(3) Setting the monitored host

Set information about the monitored host that was specified in (2) *Setting up an instance environment*. You can set multiple monitored hosts for a single instance. To set multiple monitored hosts, repeat this procedure.

Notes about setting a monitored host

- Before you set a monitored host, make sure that the procedure described in 2.1.1(5) *Environment settings required for collecting performance data (for Windows)* has been completed and the environment has been set up.
- Even if an invalid value is specified when setting the monitored host, the monitored host creation command terminates normally. However, if you start record collection with any invalid settings, performance data will not be collected. For details about troubleshooting when performance data is not collected, see 7.2.5(3) *PFM - RM for Platform was started, but no performance data is being collected*.

The table below lists and describes the settings for the monitored host. Check this information before you start operations.

Table 2-5: Settings for the monitored host in PFM - RM for Platform

No.	Item name	Description	Setting	Default	Whether updatable by the jpcconf target setup command
1	Target Host	Specifies the name of the monitored host. Specify a host name that can be resolved. ^{#1} The specified monitored host name is used during performance data collection and health checking. If JP1/IM or NNM is linked, this name is also used as the event host name.	From 1 to 32 bytes of alphanumeric characters and the hyphen (-) are permitted. The name cannot begin with a hyphen (-). The specified value must be unique within the instance. ^{#2}	--	U
2	User	Specifies the user ^{#3} used to connect to the monitored host.	From 1 to 256 bytes of characters are permitted. The tab character is not permitted.	--	U
3	Password	Specifies the password used to connect to the monitored host. This information is not displayed on the screen. When the password is specified, re-entry of the password is requested.	From 1 to 256 bytes of characters are permitted. The tab character is not permitted.	--	U
4	Domain	Specifies the name of the domain to which the monitored host belongs. If the host belongs to a workgroup, specify nothing.	From 0 to 256 bytes of characters are permitted. The tab character is not permitted.	No domain name is specified.	U

Legend:

U: Updatable

--: Not set by default

#1

To collect performance data and perform health checking, the name must be resolvable at least by the PFM - RM host.

If the JP1/IM linkage facility is used, the name must be resolvable by the JP1/IM

host. If the OpenView linkage facility is used, the name must be resolvable by the PFM - Manager host as well as the NNM host.

#2

All cannot be used because it is a reserved word for group agents.

#3

The specified user must be a member of the monitored host's Administrators, Performance Log Users, or Performance Monitor Users group.

If the OS of the monitored host is Windows Server 2008, the UAC security function is enabled, and an account other than Built-in Administrator is used, then that account must have been set as a member of the Performance Log Users or Performance Monitor Users group.

To set the monitored host, use the `jpccconf target setup` command.

To set the monitored host:

1. Execute the `jpccconf target setup` command.

In PFM - RM for Platform, we recommend that you specify the host name of the monitored host as the monitoring target.

The following example sets the monitored host `targethost1` with instance name `inst1` as the monitoring target:

```
jpccconf target setup -key RMPlatform -inst inst1 -target
targethost1
```

For details about the `jpccconf target setup` command, see the chapter that describes commands in the manual *Job Management Partner 1/Performance Management Reference*.

2. Set up the monitoring target for PFM - RM for Platform.

Enter settings for the monitored host according to the command's instructions. For details about the settings for the monitored host, see Table 2-5. After you enter each setting, press the **Enter** key to set it. To use a displayed default value, press the **Enter** key.

The following shows an example of setting up a monitoring target:

Monitored host to be set up:

- Host name: `targethost1`
- User: `user1`
- Password: `pass1`

- Domain: domain1

```
C:\Program Files\Hitachi\jplpc\tools>jpccconf target setup
-key RMPlatform -inst inst1 -target targethost1
Target Host      []          :targethost1<Enter>
User             :user1<Enter>
Password        :pass1#1<Enter>
                Re-enter :pass1#1<Enter>
Domain          []          :domain1<Enter>
KAVE05361-I The monitoring target is now being added.
(servicekey#2=RMPlatform, inst=inst1, target=targethost1)
KAVE05362-I The monitoring target has been added.
(servicekey#2=RMPlatform, inst=inst1, target=targethost1)
```

#1

Re-entry of the password is requested. The entered password is not displayed on the screen.

#2

If PFM - Manager's product name display function is disabled, agt7 is displayed for servicekey.

When entry of all settings is completed, an environment for the monitoring target is configured. The following table shows the folder structure of the monitoring target environment.

Table 2-6: Folder structure of the monitoring target environment

No.	Storage folder	File name	Description
1	<i>PFM-RM-for-Platform-installation-folder</i> #\ agt7\agent\ <i>instance-name</i> \targets	<i>monitoring-target-name.ini</i>	Monitoring target settings file
2		<i>monitoring-target-name.ini.model</i>	Sample of a monitoring target settings file
3	<i>PFM-RM-for-Platform-installation-folder</i> #\ agt7\agent\ <i>instance-name</i> \targets\ <i>monitoring-target-name</i>	--	Work folder for the monitoring target

Legend:

--: Not applicable

#

If you run a logical host, replace *PFM-RM-for-Platform-installation-folder* with *environment-folder\jplpc*.

The following service IDs are added by the monitoring target settings:

Service IDs to be added

- Remote Agent service

```
7Ainstance-number instance-name [monitoring-target-name@host-name]
```

The instance name and monitoring target name will be the values specified in the `jpccconf target setup` command.

If you specify `host1` as the host name of the PFM - RM host, `inst1` as the instance name, and `targethost1` as the monitoring target name, the service ID will be as follows:

```
7A1inst1 [targethost1@host1]
```

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

If you want to change information about the monitoring target, re-execute the `jpccconf target setup` command and update the information. For details about updating a monitoring target, see [2.6.3 Updating a monitoring target](#).

You can change some settings by using PFM - Web Console to edit properties. For details about the information that can be changed by editing properties, see [E.3 List of properties of remote agents and group agents](#).

(4) Network settings Optional

You must specify network settings only if you need to change the network environment settings for the network configuration where Performance Management is used.

There are two types of network environment settings, as described below. Change network settings as necessary.

- IP address setting

Set this information to use Performance Management in a network that is connected to multiple LANs. You set multiple IP addresses by defining the host names and IP addresses in the `jpchosts` file. Make sure that the specified `jpchosts` file is consistent throughout the entire Performance Management system.

For details about the IP address settings, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning*

and Configuration Guide.

- Port number setting

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 the port number settings, 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

The operation status of Performance Management is output to log files unique to Performance Management. This setting is required in order to change the size of these log files.

These unique log files are called the *common message log*.

For the common message log, two files with a size of 2,048 kilobytes each are used by default. For details about changing the common message log, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

(6) Changing performance data storage locations

These settings are required in order to change the following settings for the performance data that is managed by PFM - RM for Platform:

- Database storage location

By default,
PFM-RM-for-Platform-installation-folder\agt7\store\instance-name is set.

- Backup location

By default,
PFM-RM-for-Platform-installation-folder\agt7\store\instance-name\back
up is set.

- Partial backup location

By default,
PFM-RM-for-Platform-installation-folder\agt7\store\instance-name\part
ial is set.

- Export location

By default,
PFM-RM-for-Platform-installation-folder\agt7\store\instance-name\dump

is set.

- Import location

By default,

PFM-RM-for-Platform-installation-folder\agt7\store*instance-name*\import is set.

Note:

If you use a logical host for operation, replace

PFM-RM-for-Platform-installation-folder with *environment-folder*\jplpc.

For details about changing performance data storage locations, see *2.6.1 Changing performance data storage locations*.

(7) Setting the connection-target PFM - Manager

You must specify on the PFM - RM host information about the PFM - Manager that manages PFM - RM for Platform. The `jpccconf mgrhost define` command is used to make this setting.

Notes about setting the connection-target PFM - Manager

- Only one PFM - Manager can be set as the connection destination even when multiple PFM - RMs are installed on the same host. A different PFM - Manager cannot be specified for each PFM - RM.
- If PFM - RM for Platform and PFM - Manager are installed on the same host, then the PFM - Manager on the local host is the connection-target PFM - Manager. In this case, you cannot change the connection-target PFM - Manager to any other PFM - Manager. To connect to PFM - Manager on a remote host, install PFM - RM for Platform on a different host than for PFM - Manager.

To set the connection-target PFM - Manager:

1. Stop the Performance Management programs and services.

If any Performance Management programs and services are running on the local host, stop all of them before starting the setup procedure. If Performance Management programs and services are running during execution of the `jpccconf mgrhost define` command, a message is displayed that asks you to terminate them.

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

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

The following shows an example of command execution when the connection-target PFM - Manager is located on the `host01` host:

```
jpcconf mgrhost define -host host01
```

(8) Action log output settings

These settings are required in order to output action logs at the following times:

- When a PFM service starts
- When a PFM service stops
- When the PFM - Manager connection status is changed

An action log contains log information about exceeded threshold values caused by factors such as system overloads; its output is linked with the alarm function. For details about the action log output settings, see *I. Outputting Action Log Data*.

2.1.5 WMI connection setting method

This subsection describes how to set WMI connection.

To connect WMI, settings for the following are required:

- DCOM

The DCOM setting must be made at both the PFM - RM host and the monitored hosts.

If you run the PFM - RM host in a cluster system, the DCOM setting must be made at both the executing node and the standby node. If you use Windows MSCS with cluster software, you must set up the resources of the distributed transaction coordinator (MSDTC); for details about specifying this setup, see the technical support information on the Microsoft home page.

- Firewall

Set the firewall on each monitored host, as necessary.

- WMI namespace

Set the WMI namespace on each monitored host, as necessary.

When you have finished making the settings, check that you can connect from the PFM - RM host to the monitored hosts.

Notes about WMI connection setting

- Data cannot be collected when **Disabled** is set as the startup type of the Windows Management Instrumentation service (service name: `WinMgmt`) that provides system administration information for the OS of a monitored host.

- A user who connects to a monitored host must be a member of the monitored host's Administrators, Performance Log Users, or Performance Monitor Users group. If the OS of the monitored host is Windows Server 2008, the UAC security function is enabled, and an account other than Built-in Administrator is used, then that account must be set as a member of the Performance Log Users or Performance Monitor Users group.

(1) DCOM setting

This subsection describes how to set DCOM at the PFM - RM host and the monitored hosts.

(a) Setting at the PFM - RM host

Set DCOM at the PFM - RM host.

To set DCOM:

1. From the Windows **Start** menu, choose **Run**.
2. Enter `dcomcnfg.exe` and then click the **OK** button.
The Component Services window appears.
3. Click **Component Services** and **Computers** to expand the tree.
4. Choose **My Computer**, and then from the right-click menu, choose **Properties**.
The My Computer Properties dialog box appears.
5. Choose the **Default Properties** tab, and then select **Enable Distributed COM on this computer**.
6. Click the **OK** button.
The My Computer Properties dialog box closes.
7. Restart the machine.

This step is not needed if you have not changed the setting of **Enable Distributed COM on this computer**.

(b) Setting at a monitored host

Set DCOM at each monitored host.

Some parts of the procedure may differ depending on the OS environment of a specific monitored host, as described below:

- If the OS of the monitored host is Windows Server 2003 with no service pack applied, there is no **Edit Limits** button, which means that there is no need to perform steps 6 through 11.
- If the OS of the monitored host is Windows Server 2008, the UAC security function is enabled, and an account other than Built-in Administrator is used, then

steps 6 through 11 must be executed. Perform these steps for a user or a users group that does not belong to the Users or Administrators group.

To set DCOM:

1. From the Windows **Start** menu, choose **Run**.
2. Enter `dcomcnfg.exe` and then click the **OK** button.
The Component Services dialog box appears.
3. Click **Component Services** and **Computers** to expand the tree.
4. Choose **My Computer**, and then from the right-click menu, choose **Properties**.
The My Computer Properties dialog box appears.
5. Choose the **Default Properties** tab, and then select **Enable Distributed COM on this computer**.
6. Choose the **COM Security** tab, and then click the **Edit Limits** button for **Access Permissions**.
The Access Permission dialog box appears.
Check to see if the user who connects to the monitored host or the group to which the user belongs is displayed in **Group or user names**:
If it is not displayed, click the **Add...** button, and then add the user or the group to which the user belongs.
7. In **Select Users or Groups**, select the user who connects to the monitored host or the user's group.
Check to see if **Allow** is selected in **Remote Access**. If this option is not selected, select it.
8. Click the **OK** button.
The Access Permission dialog box closes.
9. Choose the **COM Security** tab, and then click the **Edit Limits** button for **Launch and Activation Permissions**.
The Launch Permission dialog box appears.
Check to see if the user who connects to the monitored host or the group to which the user belongs is displayed in **Group or user names**:
If it is not displayed, click the **Add...** button, and then add the user or the group to which the user belongs.
10. In **Select Users or Groups**, select the user who connects to the monitored host or the user's group.

Check to see if **Allow** is selected for both **Remote Launch** and **Remote Activation**. If it is not selected, select it.

11. Click the **OK** button.

The Launch Permission dialog box closes and the My Computer Properties dialog box is displayed again.

12. Click the **OK** button.

The My Computer Properties dialog box closes.

13. Restart the machine.

This step is not needed if you have not changed the setting of **Enable Distributed COM on this computer**.

(2) Firewall setting

This setting is required when a Windows firewall is enabled.

To determine if the firewall setting is enabled or disabled, from the Windows **Start** menu, choose **Control Panel**, and then **Windows Firewall**.

If the OS of the monitoring target is Windows Server 2003 with no service pack applied, then the Windows firewall function is not supported, and this setting is not needed.

To set the firewall:

1. From the Windows **Start** menu, choose **Run**.

2. Enter `gpedit.msc` and then click the **OK** button.

The Group Policy Object Editor dialog box appears.

3. Click **Computer Configuration**, **Administrator Templates**, **Network**, **Network Connections**, and **Windows Firewall** to expand the tree.

4. Click **Standard Profile**,^{#1} and then in the right-hand pane, from the right-click menu of **Windows Firewall: Allow remote administration exception**,^{#2} choose **Properties**.

The Windows Firewall: Allow remote administration exception Prop... dialog box appears.

#1

If the host machine is a domain environment, this will be **Domain Profile**.

#2

If the OS of the monitored host is Windows Server 2008, this will be **Windows Firewall: Allow inbound remote administration exception**.

5. Choose the **Setting** tab, and then select **Enabled**.
6. Click the **OK** button.

The Windows Firewall: Allow remote administration exception Prop... dialog box closes.

(3) WMI namespace setting

If the user who connects to the monitored host does not have Administrator permissions, you must set the WMI namespace.

You must also set the WMI namespace when the user has Administrator permissions but the OS of the monitored host is Windows Server 2008 and neither of the conditions listed below is true. Perform the WMI namespace setting for a user or a users group that does not belong to the Users or Administrators group.

- The user is not a Built-in Administrator.
- The UAC security function is enabled.

To set the WMI namespace:

1. From the Windows **Start** menu, choose **Run**.
2. Enter `wmimgmt.msc` and then click the **OK** button.
The Windows Management Infrastructure (WMI) dialog box appears.
3. Choose **WMI Control (Local)**, and then from the right-click menu, choose **Properties**.
The WMI Control (Local) Properties dialog box appears.
4. Choose the **Security** tab, and then click **Root** and **CIMV2** to expand the tree.
5. Click the **Security** button.

The Security for ROOT\CIMV2 dialog box appears.

Check to see if the user who connects to the monitored host or the user's group is displayed in **Group or user names**. If it is not displayed, click the **Add...** button, and then add the user or the group to which the user belongs.

6. In **Select Users or Groups**, select the user who connects to the monitored host or the group to which the user belongs.
Check to see if **Allow** is selected for both **Enable Account** and **Remote Enable**. If it is not selected, select it.
7. Click the **OK** button.

The Security for ROOT\CIMV2 dialog box closes, and the WMI Control (Local) Properties dialog box is displayed again.

8. Click the **OK** button.

The WMI Control (Local) Properties dialog box closes.

(4) **Checking the WMI connection**

Use the `wbemtest.exe` Windows tool to check whether the PFM - RM host and a monitored host are connected. Execute this procedure at the PFM - RM host.

To check the WMI connection:

1. At the command prompt, execute the following command:

```
runas /user:<user-name> wbemtest
```

The Windows Management Instrumentation Tester dialog box appears.

For the user name, specify the values for `RMHost_User` and `RMHost_Domain`. If re-entry of the password is requested after the command executes, specify the value of `RMHost_Password`.

For details about `RMHost_User`, `RMHost_Domain`, and `RMHost_Password`, see Table 2-3.

2. Click the **Connect...** button.

The Connect... dialog box appears.

3. In **Namespace**, **User:**, **Password:**, and **Authority:**, enter the appropriate information.

The following describes each item.

- **Namespace**

Enter `\\monitored-host-name\root\cimv2`. For the name of the monitored host, specify the value of `Target Host`.

- **User:**

Enter the user name used to log on to the monitored host. For the user name, specify the value of `User`.

- **Password:**

Enter the user's password. For the user's password, specify the value of `Password`.

- **Authority:**

Enter `ntlm:domain-name-of-monitored-host`. If the monitored host is a workgroup, leave this field blank. For the domain name of the monitored host or the monitored host name, specify the value of `Domain`.

For details about `Target Host`, `User`, `Password`, and `Domain`, see Table 2-5.

4. Click the **Connect...** button.

If connection is established successfully, the Connect... dialog box closes and all buttons are enabled in the Windows Management Instrumentation Tester dialog box.

If an error dialog box is displayed, check the settings based on the error number. The error numbers and causes are described below.

Note that if you change the settings while running the `wbemtest.exe` tool and then attempt to re-establish connection, an error may result. In such a case, restart the tool and then check the connection.

- 0x8001011c

DCOM is not set at the PFM - RM host.

- 0x80070005

Possible cause of the error is one of the following:

- DCOM is not set at the PFM - RM host.
- DCOM is not set at the monitored host.
- The user name, password, or domain name used to connect to the monitored host is invalid.

- 0x80041003

At the monitored host, **Namespace** is not selected for WMI.

- 0x80041008

The value specified in **Authority**: does not begin with `ntlmdomain:`.

- 0x800706xx

Possible cause of the error is one of the following:

- The monitored host name is invalid.
- The monitored host is not running.
- The firewall was not set up at the monitored host.
- The password for the user who logs on to the monitored host has expired.

5. Click the **Enum Instances...** button.

The Class Info dialog box appears.

6. In **Enter superclass name**, enter `Win32_PerfRawData_PerfOS_System` and then click the **OK** button.

The Query Result dialog box appears.

Check to see if `Win32_PerfRawData_PerfOS_System=@` is displayed in the list. If an error dialog box is displayed or this value is not displayed in the list, the user who connects to the monitored host may not be a member of the Administrators, Performance Log Users, or Performance Monitor Users group.

Note that if you change the settings while running the `wbemtest.exe` tool and then attempt to re-execute enumeration of instances, an error may result. In such a case, restart the tool and then re-execute the checking.

2.1.6 Notes about installation and setup (for Windows)

This subsection provides notes about installing and setting up Performance Management in a Windows environment.

(1) Notes about registry

PFM - RM for Platform supports operation in an environment that is set up by the OS-provided standard method. If you have customized the OS environment, such as by using a registry editor to directly edit registry information, performance data may no longer be collected correctly even if such customization is disclosed in the Microsoft technical support information.

(2) 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.

(3) Notes about installing multiple Performance Management programs on the same host (for Windows)

In Performance Management, you can install PFM - Manager, PFM - Web Console, and PFM - RM for Platform on the same host. This subsection provides notes about installing multiple Performance Management programs on the same host.

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

- PFM - Manager and PFM - Base cannot be installed on the same host. If you need to install PFM - Manager on a host where PFM - Base and PFM - RM for Platform have been installed, perform the following procedure:
 1. Uninstall all Performance Management programs except PFM - Web Console.
 2. Install PFM - Manager.
 3. Install PFM - RM for Platform.
- If you need to install PFM - Base on a host where PFM - Manager and PFM - RM for Platform have been installed, perform the following procedure:

2. Installation and Setup

1. Uninstall all Performance Management programs except PFM - Web Console.
 2. Install PFM - Base.
 3. Install PFM - RM for Platform.
- If you install PFM - Manager on the PFM - RM host, the connection-target PFM - Manager for the PFM - RM for Platform is reset to the local host name. If this is the case, check the common message log because the setting results are output to the log.
 - If you install PFM - RM for Platform on the PFM - Web Console host, close all browser windows before you start the installation.
 - If you install a new Performance Management program, the status management function is enabled by default.

(4) Notes about upgrading (for Windows)

This subsection provides notes about upgrading PFM - RM for Platform.

- When you install a Performance Management program, stop all Performance Management programs and services on the local host before you start installation. Stop all services on both physical and logical hosts. For details about how to stop services, see the chapter that describes starting and stopping Performance Management in the *Job Management Partner 1/Performance Management User's Guide*.
- If you install PFM - RM for Platform on a host where Performance Management programs have already been installed, the PFM - RM for Platform installation folder will be the same as for the installed Performance Management programs. To change the installation folder, you must first delete all Performance Management programs except PFM - Web Console, and then re-install the programs.
- During upgrading, a space of twice the size of the Store database is required temporarily on the Store database storage disk because the existing Store database is upgraded automatically. Before you start upgrading, make sure that there is enough free space on the Store database storage disk.

(5) Notes about linking with other systems (for Windows)

This subsection provides notes about linking with other systems.

- If you install PFM - RM for Platform in an environment that is linked with NNM, stop the OpenView linkage facility and ovw before you start the installation. For details about the OpenView linkage facility, see the chapter that describes OpenView linkage in the *Job Management Partner 1/Performance Management User's Guide*.

(6) Notes about installing PFM - RM for Platform in a Windows environment

This subsection provides notes about installing PFM - RM for Platform in a Windows environment.

- If you install PFM - RM for Platform in an environment where no Performance Management program has been installed, make sure that there are no folders or files in the PFM - RM for Platform installation folder.
- If you install PFM - RM for Platform while Performance Management programs and services or other programs that reference Performance Management files (such as Windows Event Viewer) are running, a message prompting you to restart the system might be displayed. In such a case, restart the system according to the message to complete the installation.
- If you install PFM - RM for Platform in any of the statuses below, file expansion might fail:
 - Performance Management programs and services or other programs that reference Performance Management files (such as Windows Event Viewer) are running.
 - The disk capacity is insufficient.
 - The user does not have required folder permissions.

If installation has failed, terminate the programs that reference Performance Management files or take appropriate action, such as by resolving the problem of insufficient disk capacity or of folder permissions, and then re-install PFM - RM for Platform.

- If you upgrade PFM - RM for Platform in a cluster environment, you must place the shared disk online in either the executing system or the standby system.
- If you perform new installation of PFM - RM for Platform, the system must be restarted. In the case of overwrite installation and upgrading, a message prompting the user to restart the system might be displayed. In such a case, restart the system according to the message to complete the installation.
- If the *installation-folder*\setup folder contains the setup file of PFM - RM for Platform, additional setup of a new PFM - RM for Platform will be executed.
- Before you install a Performance Management program, check to see if any of the security-related programs described below are installed. If such a program is installed, take appropriate action according to the information provided below.
 - Security monitoring program

Either terminate the security monitoring program or change its settings so that installation of the Performance Management program will not be affected.

2. Installation and Setup

- 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

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

Installation of a Performance Management program may fail if these services and processes are started or stopped by the process monitoring program during the installation process.

2.2 Installation and setup (in UNIX)

This section describes the procedures for installing and setting up PFM - RM for Platform in a UNIX environment.

2.2.1 Before installing (for UNIX)

This subsection describes issues to be considered before you install PFM - RM for Platform.

(1) *Prerequisite OS*

PFM - RM for Platform can run on the following operating systems (OSs):

- Linux (x86)
- Linux (x64)

(2) *Setting up a network environment*

To use Performance Management to run PFM - RM for Platform, you must set up a network environment, such as IP addresses and port numbers.

(a) *Setting IP addresses*

You must set up the environment for PFM - RM for Platform in such a manner that an IP address can be determined from the host name. PFM - RM for Platform will not start in an environment in which IP addresses cannot be resolved.

You use one of the following methods to set host names and IP addresses:

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

For the monitoring host name, use either the real host name or the alias name.

- Using the real host name

In a UNIX environment, specify the name in such a manner that the IP address can be resolved from the host name that is obtained from the result of executing the `uname -n` command. You can also use the host name that is acquired by the `hostname` command.

Note that Performance Management supports DNS, but not FQDN. This means that when you set the IP address, you must use the host name obtained by the `uname -n` command without the domain name.

- Using an alias name

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

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

Notes about setting IP addresses

- If you use Performance Management in multiple LAN environments, use the `jpchosts` file to set IP addresses. For details about using the `jpchosts` file to set IP addresses, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.
- Performance Management will not run on a host where IP addresses are assigned dynamically by DHCP. You must set fixed IP addresses for all monitoring hosts.

(b) Setting port numbers

You must assign a port number to each service of the programs used in Performance Management. Set up the network in such a manner that the port numbers assigned to PFM - RM for Platform can be used for communication.

The table below lists and describes the default port numbers assigned to various services. For other services, an unused port number is assigned automatically each time the service starts.

Table 2-7: Default port numbers for services (for Windows)

No.	Supported function	Service name	Parameter	Port number	Description
1	Service configuration information management function	Name Server	jp1pcnsvr	22285	Port number used by PFM - Manager's Name Server service. This port number is set at all hosts of Performance Management.
2	OpenView linkage facility	NNM Object Manager	jp1pcovsvr	22292	Port number used for communication between the map manager and the 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.

No.	Supported function	Service name	Parameter	Port number	Description
3	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.
4	Monitoring console communication function	View Server	jplpcsvr	22286	Port number used by the View Server service of PFM - Manager. This port number is set at the host where PFM - Manager is installed.
5	Web service function	Web Service	--	20358	Port number used by the Web Service service of PFM - Web Console.
6	Web container function	Web Console	--	20359 20360	Port number used by the Web Console service of PFM - Web Console.

Legend:

--: Not applicable

When you use Performance Management in an environment that includes a firewall, you must use fixed port numbers. For details about how to use fixed port numbers, see the chapter that describes installation and setup in the *Job Management Partner 1/ Performance Management Planning and Configuration Guide*.

(3) OS user permissions required for installation

When you install PFM - RM for Platform, make sure that you use an account that has Administrator permissions.

(4) Prerequisite programs

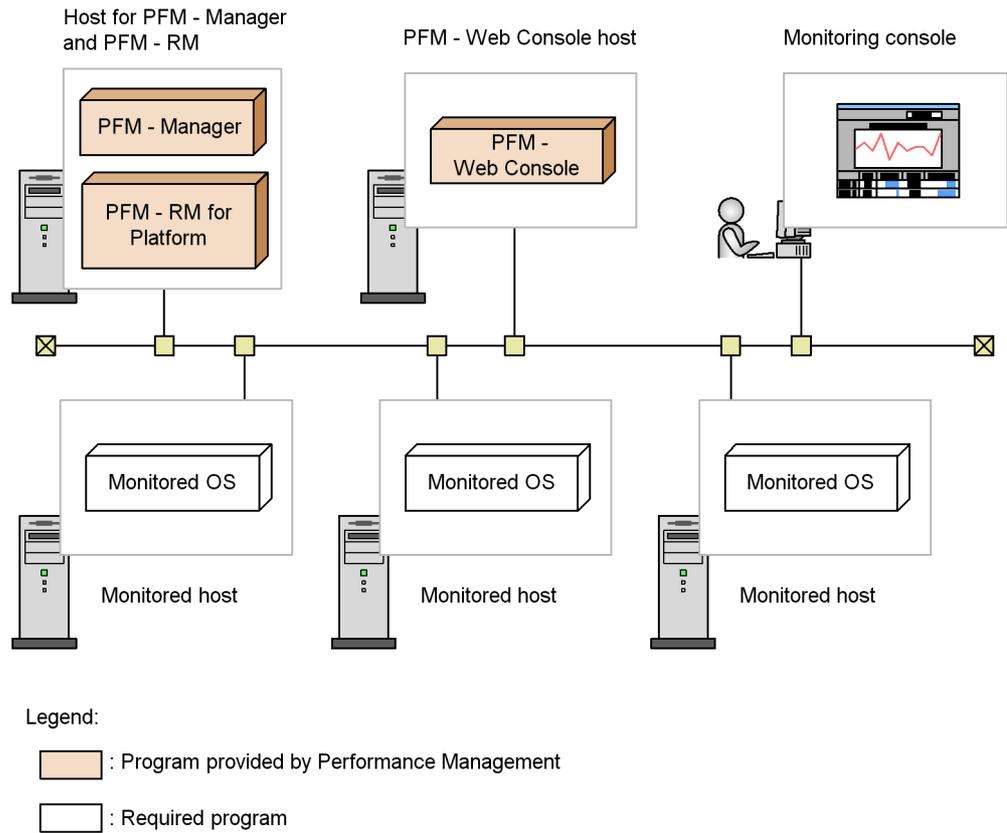
This subsection describes the configuration of programs required in order to install PFM - RM for Platform.

There are two major types of program configurations, as described below. Evaluate the program configurations from the perspective of your system environment.

When installing PFM - RM for Platform on the PFM - Manager host

With this program configuration, PFM - RM for Platform is installed on the same host as PFM - Manager. The following figure shows the program configuration.

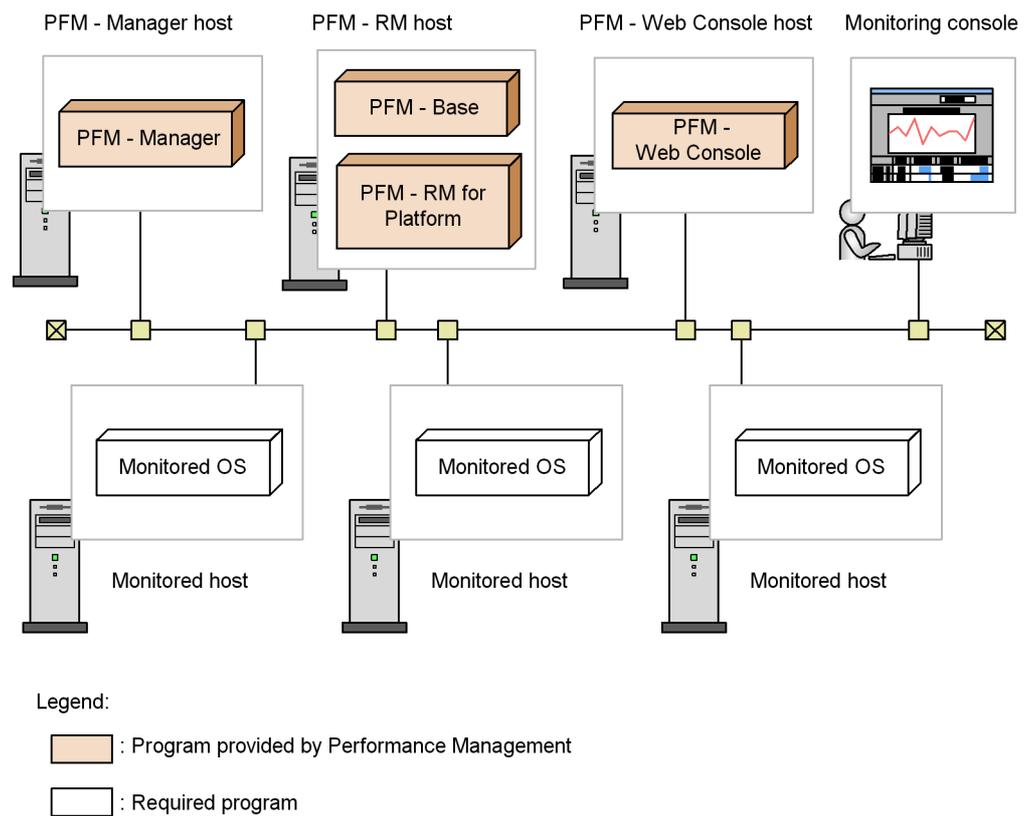
Figure 2-7: Program configuration (when PFM - RM for Platform and PFM - Manager are installed on the same host (for UNIX))



When installing PFM - RM for Platform on a host other than the PFM - Manager host

With this program configuration, PFM - RM for Platform is installed on a host other than the PFM - Manager host. If you use this program configuration, you must install PFM - Base on the same host as for PFM - RM for Platform. The following figure shows the program configuration.

Figure 2-8: Program configuration (when PFM - RM for Platform and PFM - Base are on the same host (for UNIX))



(a) Prerequisite OSs for monitored hosts

A monitored host must be using one of the following OSs:

- HP-UX
- Solaris
- AIX
- Linux

(b) Prerequisite programs for Performance Management

PFM - Manager or PFM - Base must be available on the host where PFM - RM for Platform is installed.

If you install PFM - RM for Platform on a host where PFM - Manager is available,

PFM - Base is not required. If you install multiple PFM - RMs on a host where PFM - Base is available, you need only one PFM - Base.

You also need PFM - Web Console in order to use PFM - RM for Platform to monitor the operation of monitored hosts.

(5) Environment settings required for collecting performance data (for UNIX)

PFM - RM for Platform uses SSH to collect performance data from monitored hosts. Performance data cannot be collected if SSH connection settings have not been specified. Because SSH authentication uses the public key authentication method, you must specify public key authentication settings. You may need to install other appropriate packages because OS commands are used to collect performance data.

The following describes the required SSH settings.

(a) Installing packages

■ RPM packages required for the PFM - RM host

The following table lists the RPM packages required for the PFM - RM host.

Table 2-8: RPM packages required for the PFM - RM host

No.	Software name	OS	RPM package name	Default
1	OpenSSH	Linux 5 Advanced Platform (AMD64 & EM64T)	<ul style="list-style-type: none"> openssh-4.3p2-24.el5 or later openssh-clients-4.3p2-24.el5 or later 	Y
2		Linux 5 Advanced Platform (x86)	<ul style="list-style-type: none"> openssh-4.3p2-24.el5 or later openssh-clients-4.3p2-24.el5 or later 	Y
3		Linux AS 4 (AMD64 & Intel EM64T)	<ul style="list-style-type: none"> openssh-3.9p1-8.RHEL4.20 or later openssh-clients-3.9p1-8.RHEL4.20 or later 	Y
4		Linux AS 4 (x86)	<ul style="list-style-type: none"> openssh-3.9p1-8.RHEL4.4 or later openssh-clients-3.9p1-8.RHEL4.4 or later 	Y
5	Perl	Linux 5 Advanced Platform (AMD64 & EM64T)	perl-5.8.8-10 or later	Y
6		Linux 5 Advanced Platform (x86)	perl-5.8.8-10 or later	Y
7		Linux AS 4 (AMD64 & Intel EM64T)	perl-5.8.5-12.1 or later	Y
8		Linux AS 4 (x86)	perl-5.8.5-12.1 or later	Y

Legend:

Y: Installed by default

■ Packages required for monitored hosts (SSH)

The set of packages (SSH) required for a monitored host depends on the OS of the monitored host.

The following table lists the required packages when a monitored host's OS is HP-UX.

Table 2-9: RPM packages required for monitored hosts (for HP-UX)

No.	Software name	OS	Package name	Default
1	HP-UX Secure Shell	HP-UX 11i V2 (IPF)	T1471AA,r=A.04.00.003,a=HP-UX_B.11.23_IA/PA,v=HP or later	Y
2		HP-UX 11i V3 (IPF)	SecureShell,r=A.04.40.005,a=HP-UX_B.11.31_IA/PA,v=HP or later	Y

Legend:

Y: Installed by default

The following table lists the required packages when a monitored host's OS is Solaris.

Table 2-10: RPM packages required for monitored hosts (for Solaris)

No.	Software name	OS	Package name	Default
1	SunSSH	Solaris 9 (SPARC)	<ul style="list-style-type: none"> • SUNWsshcu 11.9.0,REV=2002.04.06.15.27 or later • SUNWsshdr 11.9.0,REV=2002.04.06.15.27 or later • SUNWsshdu 11.9.0,REV=2002.04.06.15.27 or later • SUNWsshhr 11.9.0,REV=2002.04.06.15.27 or later • SUNWsshhu 11.9.0,REV=2002.04.06.15.27 or later 	Y

2. Installation and Setup

No.	Software name	OS	Package name	Default
2		Solaris 10 (SPARC)	<ul style="list-style-type: none"> SUNWsshcu 11.10.0,REV=2005.01.21.15.53 or later SUNWsshdr 11.10.0,REV=2005.01.21.15.53 or later SUNWsshdu 11.10.0,REV=2005.01.21.15.53 or later SUNWsshr 11.10.0,REV=2005.01.21.15.53 or later SUNWsshu 11.10.0,REV=2005.01.21.15.53 or later 	Y
3		Solaris 10 (x64)	<ul style="list-style-type: none"> SUNWsshcu 11.10.0,REV=2005.01.21.16.34 or later SUNWsshdr 11.10.0,REV=2005.01.21.16.34 or later SUNWsshdu 11.10.0,REV=2005.01.21.16.34 or later SUNWsshr 11.10.0,REV=2005.01.21.16.34 or later SUNWsshu 11.10.0,REV=2005.01.21.16.34 or later 	Y
4		Solaris 10 (x86)	<ul style="list-style-type: none"> SUNWsshcu 11.10.0,REV=2005.01.21.16.34 or later SUNWsshdr 11.10.0,REV=2005.01.21.16.34 or later SUNWsshdu 11.10.0,REV=2005.01.21.16.34 or later SUNWsshr 11.10.0,REV=2005.01.21.16.34 or later SUNWsshu 11.10.0,REV=2005.01.21.16.34 or later 	Y

Legend:

Y: Installed by default

The following table lists the required packages when a monitored host's OS is AIX.

Table 2-11: RPM packages required for monitored hosts (for AIX)

No.	Software name	OS	Package name	Default
1	OpenSSH	AIX 5L V5.3	<ul style="list-style-type: none"> openssh.base.client 4.5.0.5301 or later openssh.base.server 4.5.0.5301 or later openssh.license 4.5.0.5301 or later openssh.man.en_US 4.5.0.5301 or later 	N

No.	Software name	OS	Package name	Default
2		AIX V6.1	<ul style="list-style-type: none"> openssh.base.client 4.5.0.5301 or later openssh.base.server 4.5.0.5301 or later openssh.license 4.5.0.5301 or later openssh.man.en_US 4.5.0.5301 or later 	Y

Legend:

Y: Installed by default

N: Not installed by default

The following table lists the required packages when a monitored host's OS is Linux.

Table 2-12: RPM packages required for monitored hosts (for Linux)

No.	Software name	OS	RPM package name	Default
1	OpenSSH	Linux 5 Advanced Platform (AMD64 & EM64T)	<ul style="list-style-type: none"> openssh-4.3p2-24.el5 or later openssh-server-4.3p2-24.el5 or later 	Y
2		Linux 5 Advanced Platform (IPF)	<ul style="list-style-type: none"> openssh-4.3p2-24.el5 or later openssh-server-4.3p2-24.el5 or later 	Y
3		Linux 5 Advanced Platform (x86)	<ul style="list-style-type: none"> openssh-4.3p2-24.el5 or later openssh-server-4.3p2-24.el5 or later 	Y
4		Linux AS 4 (AMD64 & Intel EM64T)	<ul style="list-style-type: none"> openssh-3.9p1-8.RHEL4.20 or later openssh-server-3.9p1-8.RHEL4.20 or later 	Y
5		Linux AS 4 (IPF)	<ul style="list-style-type: none"> openssh-3.9p1-8.RHEL4.12 or later openssh-server-3.9p1-8.RHEL4.12 or later 	Y
6		Linux AS 4 (x86)	<ul style="list-style-type: none"> openssh-3.9p1-8.RHEL4.4 or later openssh-server-3.9p1-8.RHEL4.4 or later 	Y

Legend:

Y: Installed by default

■ Packages required for monitored hosts (commands)

You can determine the packages that are required by a monitored host by executing the appropriate command shown in the following table.

Table 2-13: Commands for determining required packages and file sets

No.	OS	Command execution format
1	HP-UX	/usr/sbin/swlist -l file grep {command-name}
2	Solaris	/usr/sbin/pkgchk -l -p {command-name}
3	AIX	/usr/bin/lslpp -w {command-name}
4	Linux	/bin/rpm -qf {command-name}

The commands and packages are described below.

The following table lists the command names that are specified in order to collect records.

Table 2-14: Commands used to collect records

No.	Record name	Command name			
		HP-UX	Solaris	AIX	Linux
1	Logical Disk Overview (PI_LDSK)	<ul style="list-style-type: none"> date df 	<ul style="list-style-type: none"> date df 	<ul style="list-style-type: none"> date df 	<ul style="list-style-type: none"> date df
2	Network Interface Overview (PI_NET)	<ul style="list-style-type: none"> date netstat 	<ul style="list-style-type: none"> date netstat 	<ul style="list-style-type: none"> date netstat 	<ul style="list-style-type: none"> date netstat
3	Physical Disk Overview (PI_PDSK)	<ul style="list-style-type: none"> date iostat sar 	<ul style="list-style-type: none"> date iostat 	<ul style="list-style-type: none"> date sar 	<ul style="list-style-type: none"> date iostat
4	Processor Overview (PI_CPU)	<ul style="list-style-type: none"> date sar 	<ul style="list-style-type: none"> date mpstat 	<ul style="list-style-type: none"> date mpstat sar 	<ul style="list-style-type: none"> date mpstat
5	System Status (PD)	<ul style="list-style-type: none"> date uname 	<ul style="list-style-type: none"> date uname 	<ul style="list-style-type: none"> date unam 	<ul style="list-style-type: none"> date uname
6	System Summary (PI)	<ul style="list-style-type: none"> crashconf date sar swapinfo uptime vmstat 	<ul style="list-style-type: none"> date mpstat prtconf sar swap uptime vmstat 	<ul style="list-style-type: none"> date pstat sar uptime vmstat 	<ul style="list-style-type: none"> date free mpstat sar uptime vmstat

The following table lists the packages that are required in order to collect records.

Table 2-15: Packages that must be installed (for HP-UX)

No.	Command name	OS	Package name	Default
1	df	HP-UX 11i V2 (IPF)	OS-Core.UX2-CORE B.11.21 or later	Y
2		HP-UX 11i V3 (IPF)	OS-Core.UX2-CORE B.11.31 or later	Y
3	ioscan	HP-UX 11i V2 (IPF)	OS-Core.UX-CORE B.11.21 or later	Y
4		HP-UX 11i V3 (IPF)	OS-Core.UX-CORE B.11.31 or later	Y
5	iostat	HP-UX 11i V2 (IPF)	OS-Core.SYS2-ADMIN B.11.21 or later	Y
6		HP-UX 11i V3 (IPF)	OS-Core.SYS2-ADMIN B.11.31 or later	Y
7	netstat	HP-UX 11i V2 (IPF)	OS-Core.SYS2-ADMIN B.11.21 or later	Y
8		HP-UX 11i V3 (IPF)	OS-Core.SYS2-ADMIN B.11.31 or later	Y
9	sar	HP-UX 11i V2 (IPF)	OS-Core.SYS2-ADMIN B.11.21 or later	Y
10		HP-UX 11i V3 (IPF)	OS-Core.SYS2-ADMIN B.11.31 or later	Y
11	swapinfo	HP-UX 11i V2 (IPF)	OS-Core.SYS2-ADMIN B.11.21 or later	Y
12		HP-UX 11i V3 (IPF)	OS-Core.SYS2-ADMIN B.11.31 or later	Y
13	vmstat	HP-UX 11i V2 (IPF)	OS-Core.SYS2-ADMIN B.11.21 or later	Y
14		HP-UX 11i V3 (IPF)	OS-Core.SYS2-ADMIN B.11.31 or later	Y

Legend:

Y: Installed by default

Table 2-16: Packages that must be installed (for Solaris)

No.	Command name	OS	Package name	Default
1	df	Solaris 9 (SPARC)	SUNWcsu 11.9.0,REV=2002.04.06.15.27 or later	Y
2		Solaris 10 (SPARC)	SUNWcsu 11.10.0,REV=2005.01.21.15.53 or later	Y
3		Solaris 10 (x64)	SUNWcsu 11.10.0,REV=2005.01.21.16.34 or later	Y

2. Installation and Setup

No.	Command name	OS	Package name	Default
4		Solaris 10 (x86)	SUNWcsu 11.10.0,REV=2005.01.21.16.34 or later	Y
5	iostat	Solaris 9 (SPARC)	SUNWcsu 11.9.0,REV=2002.04.06.15.27 or later	Y
6		Solaris 10 (SPARC)	SUNWcsu 11.10.0,REV=2005.01.21.15.53 or later	Y
7		Solaris 10 (x64)	SUNWcsu 11.10.0,REV=2005.01.21.16.34 or later	Y
8		Solaris 10 (x86)	SUNWcsu 11.10.0,REV=2005.01.21.16.34 or later	Y
9	mpstat	Solaris 9 (SPARC)	SUNWcsu 11.9.0,REV=2002.04.06.15.27 or later	Y
10		Solaris 10 (SPARC)	SUNWcsu 11.10.0,REV=2005.01.21.15.53 or later	Y
11		Solaris 10 (x64)	SUNWcsu 11.10.0,REV=2005.01.21.16.34 or later	Y
12		Solaris 10 (x86)	SUNWcsu 11.10.0,REV=2005.01.21.16.34 or later	Y
13	netstat	Solaris 9 (SPARC)	SUNWcsu 11.9.0,REV=2002.04.06.15.27 or later	Y
14		Solaris 10 (SPARC)	SUNWcsu 11.10.0,REV=2005.01.21.15.53 or later	Y
15		Solaris 10 (x64)	SUNWcsu 11.10.0,REV=2005.01.21.16.34 or later	Y
16		Solaris 10 (x86)	SUNWcsu 11.10.0,REV=2005.01.21.16.34 or later	Y
17	sar	Solaris 9 (SPARC)	SUNWaccu 11.9.0,REV=2002.04.06.15.27 or later	Y
18		Solaris 10 (SPARC)	SUNWaccu 11.10.0,REV=2005.01.21.15.53 or later	Y
19		Solaris 10 (x64)	SUNWaccu 11.10.0,REV=2005.01.21.16.34 or later	Y
20		Solaris 10 (x86)	SUNWaccu 11.10.0,REV=2005.01.21.16.34 or later	Y

No.	Command name	OS	Package name	Default
21	swap	Solaris 9 (SPARC)	SUNWcsu 11.9.0,REV=2002.04.06.15.27 or later	Y
22		Solaris 10 (SPARC)	SUNWcsu 11.10.0,REV=2005.01.21.15.53 or later	Y
23		Solaris 10 (x64)	SUNWcsu 11.10.0,REV=2005.01.21.16.34 or later	Y
24		Solaris 10 (x86)	SUNWcsu 11.10.0,REV=2005.01.21.16.34 or later	Y

Legend:

Y: Installed by default

Table 2-17: Packages that must be installed (for AIX)

No.	Command name	OS	Package name	Default
1	df	AIX 5L V5.3	bos.rte.filesystem 5.3.7.0 or later	Y
2		AIX V6.1	bos.rte.filesystem 6.1.1.0 or later	Y
3	netstat	AIX 5L V5.3	bos.net.tcp.client 5.3.7.0 or later	Y
4		AIX V6.1	bos.net.tcp.client 6.1.1.0 or later	Y
5	pstat	AIX 5L V5.3	bos.sysmgt.serv_aid 5.3.7.0 or later	Y
6		AIX V6.1	bos.sysmgt.serv_aid 6.1.1.0 or later	Y
7	sar	AIX 5L V5.3	bos.acct 5.3.7.0 or later	Y
8		AIX V6.1	bos.acct 6.1.1.0 or later	Y
9	vmstat	AIX 5L V5.3	bos.acct 5.3.7.0 or later	Y
10		AIX V6.1	bos.acct 6.1.1.0 or later	Y

Legend:

Y: Installed by default

Table 2-18: Packages that must be installed (for Linux)

No.	Command name	OS	RPM package name	Default
1	df	Linux AS 4 (x86)	coreutils-5.2.1-31.1 or later	Y
2		Linux AS 4 (AMD64 & Intel EM64T)	coreutils-5.2.1-31.8.el4 or later	Y
3		Linux 5 Advanced Platform (x86)	coreutils-5.97-12.1.el5 or later	Y
4		Linux 5 Advanced Platform (AMD64 & EM64T)	coreutils-5.97-12.1.el5 or later	Y
5		Linux AS 4 (IPF)	coreutils-5.2.1-31.2 or later	Y
6		Linux 5 Advanced Platform (IPF)	coreutils-5.97-12.1.el5 or later	Y
7	free	Linux AS 4 (x86)	procps-3.2.3-8.1 or later	Y
8		Linux AS 4 (AMD64 & Intel EM64T)	procps-3.2.3-8.12 or later	Y
9		Linux 5 Advanced Platform (x86)	procps-3.2.7-8.1.el5 or later	Y
10		Linux 5 Advanced Platform (AMD64 & EM64T)	procps-3.2.7-8.1.el5 or later	Y
11		Linux AS 4 (IPF)	procps-3.2.3-8.3 or later	Y
12		Linux 5 Advanced Platform (IPF)	procps-3.2.7-8.1.el5 or later	Y
13	iostat	Linux AS 4 (x86)	sysstat-5.0.5-1 or later	N
14		Linux AS 4 (AMD64 & Intel EM64T)	sysstat-5.0.5-19.el4 or later	N
15		Linux 5 Advanced Platform (x86)	sysstat-7.0.0-3.el5 or later	N
16		Linux 5 Advanced Platform (AMD64 & EM64T)	sysstat-7.0.0-3.el5 or later	N
17		Linux AS 4 (IPF)	sysstat-5.0.5-7.rhel4 or later	N
18		Linux 5 Advanced Platform (IPF)	sysstat-7.0.0-3.el5 or later	N
19	mpstat	Linux AS 4 (x86)	sysstat-5.0.5-1 or later	N
20		Linux AS 4 (AMD64 & Intel EM64T)	sysstat-5.0.5-19.el4 or later	N
21		Linux 5 Advanced Platform (x86)	sysstat-7.0.0-3.el5 or later	N

No.	Command name	OS	RPM package name	Default	
22		Linux 5 Advanced Platform (AMD64 & EM64T)	sysstat-7.0.0-3.el5 or later	N	
23		Linux AS 4 (IPF)	sysstat-5.0.5-7.rhel4 or later	N	
24		Linux 5 Advanced Platform (IPF)	sysstat-7.0.0-3.el5 or later	N	
25	netstat	Linux AS 4 (x86)	net-tools-1.60-37.EL4.6 or later	Y	
26		Linux AS 4 (AMD64 & Intel EM64T)	net-tools-1.60-39.el4 or later	Y	
27		Linux 5 Advanced Platform (x86)	net-tools-1.60-73 or later	Y	
28		Linux 5 Advanced Platform (AMD64 & EM64T)	net-tools-1.60-73 or later	Y	
29		Linux AS 4 (IPF)	net-tools-1.60-37.EL4.6 or later	Y	
30		Linux 5 Advanced Platform (IPF)	net-tools-1.60-73 or later	Y	
31		sar	Linux AS 4 (x86)	sysstat-5.0.5-1 or later	N
32			Linux AS 4 (AMD64 & Intel EM64T)	sysstat-5.0.5-19.el4 or later	N
33	Linux 5 Advanced Platform (x86)		sysstat-7.0.0-3.el5 or later	N	
34	Linux 5 Advanced Platform (AMD64 & EM64T)		sysstat-7.0.0-3.el5 or later	N	
35	Linux AS 4 (IPF)		sysstat-5.0.5-7.rhel4 or later	N	
36	Linux 5 Advanced Platform (IPF)		sysstat-7.0.0-3.el5 or later	N	

Legend:

Y: Installed by default

N: Not installed by default

(b) SSH connection settings

Specify the SSH connection settings at both the PFM - RM host and the monitored hosts. For details about the SSH connection settings, see *2.2.5 SSH connection setting method*.

(c) User of a monitored host

If the OS of a monitored host is AIX and a user other than `root` is to collect information, that user must belong to both the `adm` group and the `system` group;

otherwise, some information will not be collected.

To ensure that the user belongs to both groups (`adm` and `system`), execute the following command at the connection-target monitored host:

```
$ id
uid=xxx(xxx) gid=x(xxx) groups=0(system),4(adm)
```

For details about the information that will not be collected, see *5. Records*. If the OS of the monitored host is not AIX, this user limitation is not applicable.

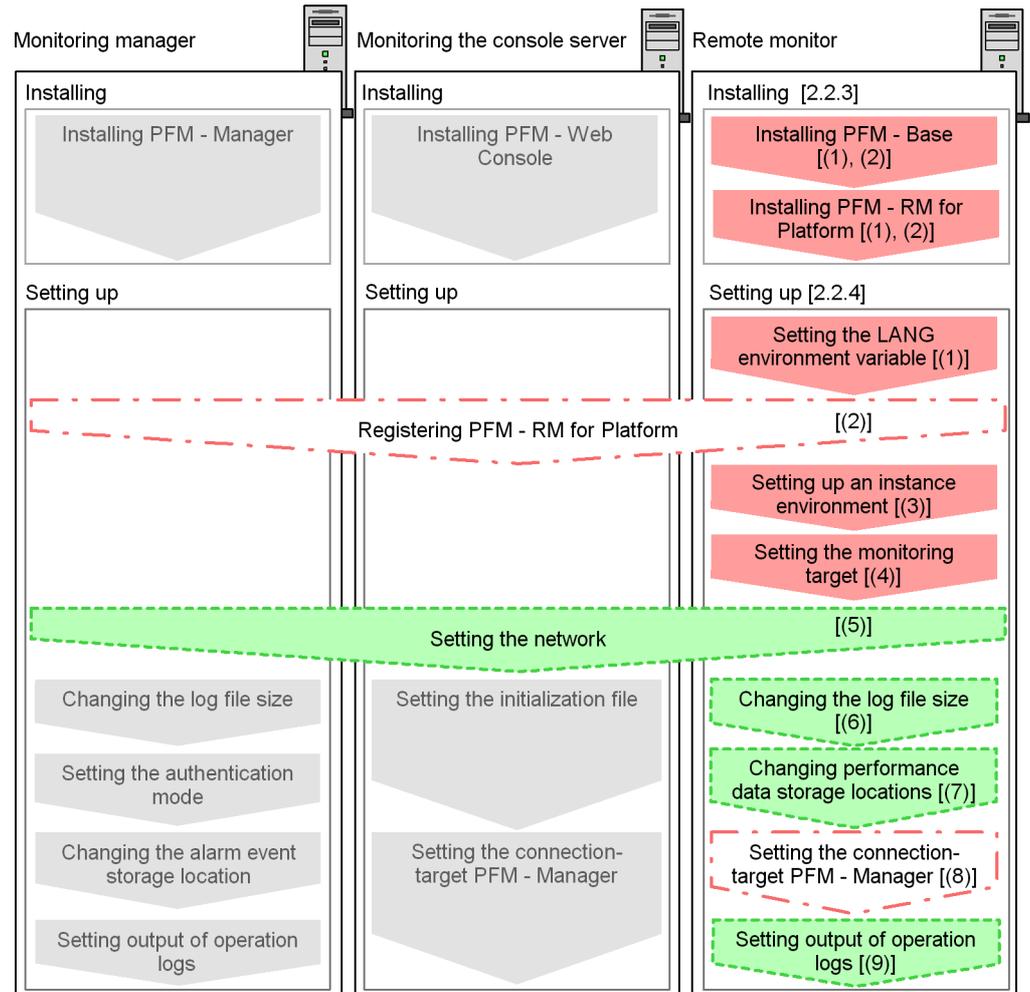
2.2.2 Installation and setup procedures (for UNIX)

This subsection describes the procedures for installing and setting up PFM - RM for Platform.

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*.

The following figure shows the procedures for installing and setting up PFM - RM for Platform.

Figure 2-9: Installation and setup procedures (for UNIX)



Legend:

-  : Required setup item
-  : Setup item that is required depending on the situation
-  : Optional setup item
-  : Item whose procedure is described in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*
- [] : Reference

2.2.3 Installation procedure (for UNIX)

This subsection describes how to install PFM - RM for Platform in a UNIX environment.

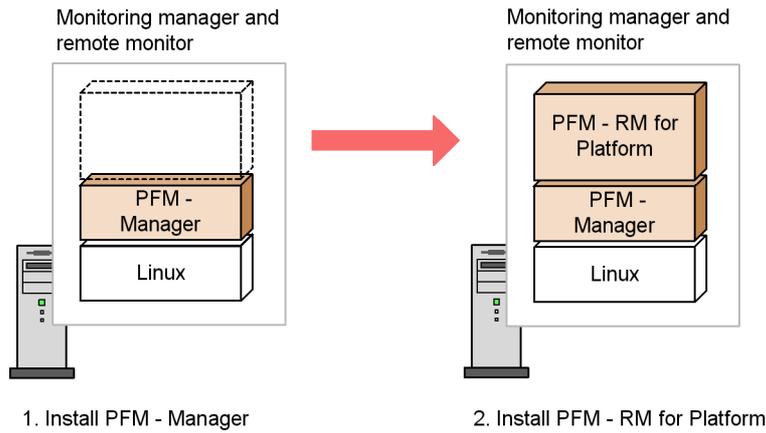
(1) Program installation sequence

This subsection describes the order in which PFM - RM for Platform and its prerequisite programs are to be installed.

When installing PFM - RM for Platform on the PFM - Manager host

Install PFM - Manager first and then install PFM - RM for Platform.

Figure 2-10: Program installation sequence (when PFM - RM for Platform and PFM - Manager are on the same host (for UNIX))



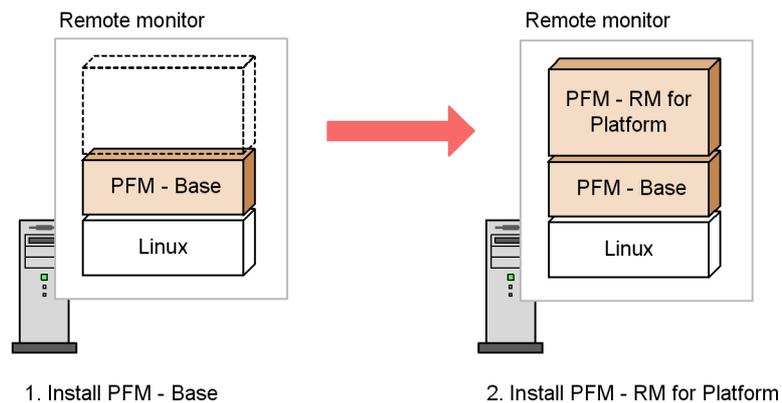
Legend:

-  : Program provided by Performance Management
-  : Required program

When installing PFM - RM for Platform on a host other than the PFM - Manager host

Install PFM - Base first and then install PFM - RM for Platform.

Figure 2-11: Program installation sequence (when PFM - RM for Platform and PFM - Base are on the same host (for UNIX))



Legend:

 : Program provided by Performance Management

 : Required program

If you install multiple PFM - RMs on the same host, you can install the individual PFM - RMs in any order.

(2) Installation procedure

This subsection describes how to install PFM - RM for Platform.

The two ways to install PFM - RM for Platform in a UNIX environment are by using the provided CD-ROM or by using JP1/Software Distribution for remote installation. For details about the method that uses JP1/Software Distribution, see the *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, and *Job Management Partner 1/Software Distribution Client Description and User's Guide*, for UNIX systems.

To install from the provided CD-ROM:

1. At the host where PFM - RM for Platform is to be installed, log on as a superuser. Alternatively, use the `su` command to change to a superuser.
2. At the local host, stop all services of Performance Management programs that are running.

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

them.

Note concerning the services to be stopped

You must stop all Performance Management services on physical and logical hosts. For details about how to stop services, see the chapter that describes starting and stopping Performance Management in the *Job Management Partner 1/Performance Management User's Guide*.

3. Insert the provided CD-ROM.
4. Execute the `mount` command to mount the CD-ROM.

The following command mounts the CD-ROM on `/cdrom`:

```
/bin/mount -r -o mode=0544 /dev/cdrom /media/cdrecorder#
```

#

The device special file name in `/dev/cdrom /media/cdrecorder` and the mount directory name for the CD-ROM file system depend on the environment in use.

5. Execute the following command to start the Hitachi Program Product Installer:
`/media/cdrecorder#/LINUX/SETUP /media/cdrecorder#`

The Hitachi Program Product Installer starts and the initial window is displayed.

#

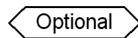
The mount directory name for the CD-ROM file system in `/media/cdrecorder` depends on the environment in use.

6. In the initial window, enter `I`.
A list of the programs that can be installed is displayed.
7. Select PFM - RM for Platform and then enter `I`.
PFM - RM for Platform is installed. To select another program, move the cursor to the desired program and then press the space key to select it.
8. When installation is completed successfully, enter `Q`.

The initial window of the Hitachi Program Product Installer is displayed again.

2.2.4 Setup procedure (for UNIX)

This subsection describes how to set up PFM - RM for Platform.



indicates the following setup items:

- Setup item required depending on the environment in use

- Setup item for changing a default setting

(1) Setting the LANG environment variable

You must set the LANG environment variable.

The table below shows the LANG environment variable values supported by PFM - RM for Platform. Before you set a LANG environment variable value, check that the applicable language environment has been installed and configured correctly. Invalid installation and configuration of the language environment may result in encoding errors and illegal rewriting of definition data.

Table 2-19: LANG environment variable values supported by PFM - RM for Platform

No.	Language	LANG environment variable value
1	English	c

(2) Registering PFM - RM for Platform

To achieve central management of PFM - RM for Platform in the Performance Management system, you must register PFM - RM for Platform into PFM - Manager and PFM - Web Console.

You must register PFM - RM for Platform at the following times:

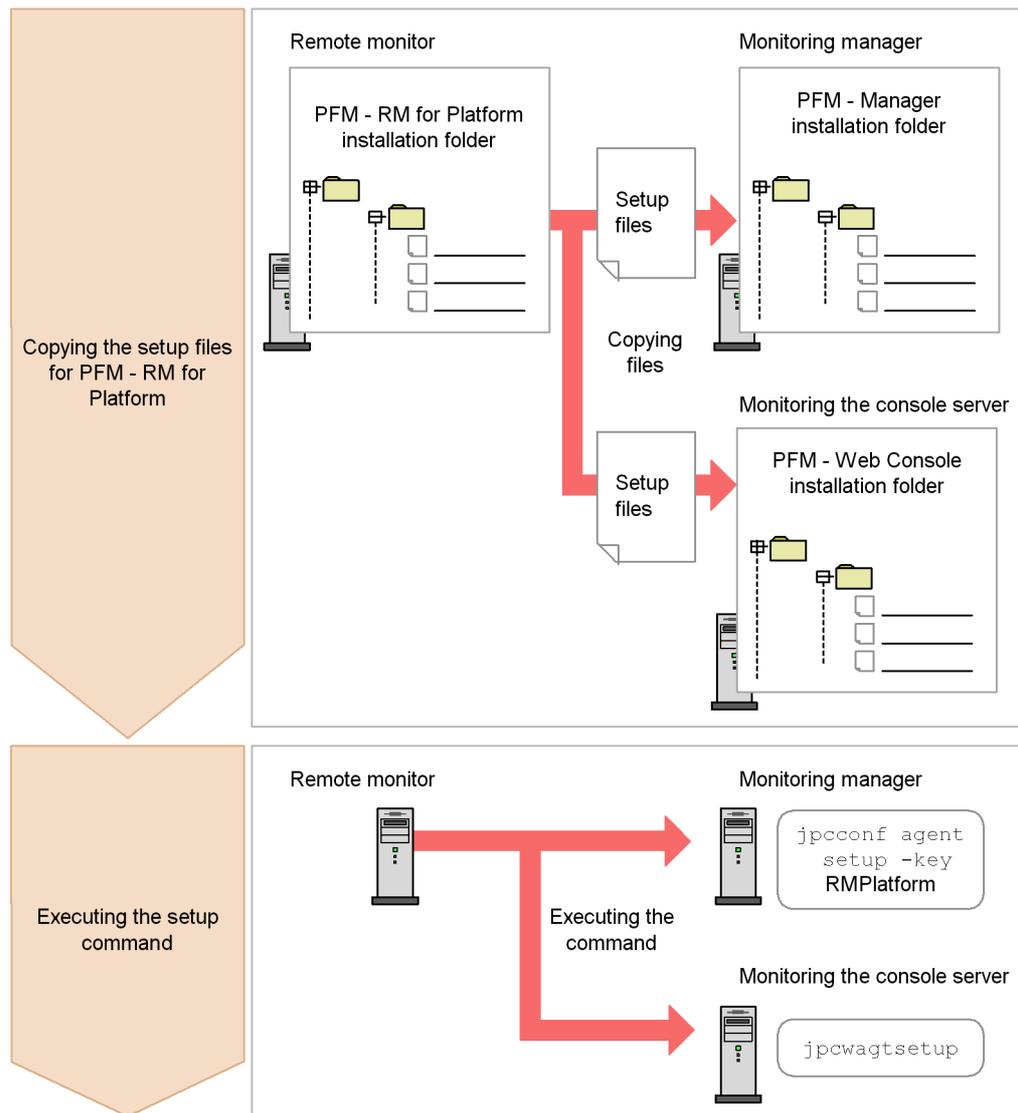
- Whenever you add a new PFM - RM for Platform in the Performance Management system.

Note: If a PFM - RM for Platform has already been registered and you are adding a new PFM - RM for Platform of the same version, there is no need to register the new PFM - RM for Platform.

- When you update the Data model version for the registered PFM - RM for Platform.

The following figure shows the procedure for registering PFM - RM for Platform.

Figure 2-12: Procedure for registering PFM - RM for Platform (for UNIX)



Notes about registering PFM - RM for Platform

- Register PFM - RM for Platform before you set up an instance environment.
- If you install different versions of PFM - RM for Platform on separate hosts, set up old versions before you set up new versions.

- If you install PFM - RM for Platform on the same host as where PFM - Manager is installed, the `jpcconf agent setup` command executes automatically.
- When PFM - RM for Platform is registered, folders named `RM Platform` are created on the **Reports** and **Alarms** pages of PFM - Web Console. If you have already created a folder or file named `RM Platform` on the **Reports** page, you must rename it before starting the registration procedure.

The following subsections describe how to register PFM - RM for Platform.

(a) Copying the setup files for PFM - RM for Platform

Copy the setup files from the PFM - RM host to the hosts where PFM - Manager and PFM - Web Console are installed.

To copy the setup files:

1. Stop PFM - Web Console.

If PFM - Web Console is running, stop it.

2. Copy the setup files in binary mode.

Copy the files from the PFM - RM host to the PFM - Manager and PFM - Web Console hosts.

The following table lists the source file storage locations and the copy destination locations.

Table 2-20: Setup files to be copied (for UNIX))

No.	Source (setup files for PFM - RM for Platform)	Target		
		Program name	OS	Target folder
1	<code>/opt/jp1pc/setup/jpcagt7w.EXE</code>	PFM - Manager	Windows	<code>PFM-Manager-installation-folder\setup</code>
2	<code>/opt/jp1pc/setup/jpcagt7u.Z</code>		UNIX	<code>/opt/jp1pc/setup/</code>
3	<code>/opt/jp1pc/setup/jpcagt7w.EXE</code>	PFM - Web Console	Windows	<code>PFM-Web-Console-installation-folder\setup</code>
4	<code>/opt/jp1pc/setup/jpcagt7u.Z</code>		UNIX	<code>/opt/jp1pcwebcon/setup/</code>

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

At the PFM - Manager host, execute the setup command for PFM - RM for Platform.

Execute the following command:

```
jpccconf agent setup -key RMPlatform
```

Notes about executing the command

Before you execute the command, stop all Performance Management programs and services at the local host. An error may occur if the `jpccconf agent setup` command is executed before all Performance Management programs and services have stopped completely. If an error has occurred, make sure that all Performance Management programs and services have stopped completely, and then re-execute the `jpccconf agent setup` command.

After you have executed the setup command at the PFM - Manager host, you may delete the setup files for PFM - RM for Platform that were copied to the PFM - Manager.

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

At the PFM - Web Console host, execute the setup command for PFM - RM for Platform.

Execute the following command:

```
jpcwagtsetup
```

After you have executed the setup command at the PFM - Web Console host, you may delete the setup files for PFM - RM for Platform that were copied to the PFM - Web Console.

(3) Setting up an instance environment

Set up an instance environment for PFM - RM for Platform at the PFM - RM host. To set multiple instance environments, repeat this procedure.

Notes about setting instance environments

Before you set instance environments, make sure that the procedure described in *2.2.1(5) Environment settings required for collecting performance data (for UNIX)* has been completed and the correct environment has been set up.

The table below lists and describes the instance environment setting items. Check this information before you start the operation.

Table 2-21: Instance environment setting items for PFM - RM for Platform (for UNIX)

No.	Item name	Description	Setting	Default	Whether updatable by the <code>jpccconf inst setup</code> command
1	Interval	Specifies a collection interval for the collection process.	Specify a value in the range from 60 to 3,600 (seconds).	300	U
2	Std_Category ^{#1}	Specifies whether the collection process is to collect basic information (PI and PI_CPU records).	Specify one of the following values: <ul style="list-style-type: none"> Y: Collect N: Do not collect 	Y	U
3	Disk_Category ^{#1}	Specifies whether the collection process is to collect disk information (PI_PDSK and PI_LDSK records).	Specify one of the following values: <ul style="list-style-type: none"> Y: Collect N: Do not collect 	Y	U
4	Network_Category ^{#1}	Specifies whether the collection process is to collect network information (PI_NET record).	Specify one of the following values: <ul style="list-style-type: none"> Y: Collect N: Do not collect 	Y	U
5	Log_Size	Specifies the maximum size of one agent log file. ^{#2}	Specify a value in the range from 1 to 32 (megabytes). A value of 3 or greater is recommended.	3	U

Legend:

U: Updatable

#1

The Std_Category, Disk_Category, and Network_Category settings take precedence over the collection settings for the individual records.

For example, if you set Std_Category to N (do not collect), a PI record is handled as follows:

- The PI record information is not recorded in the Store database.

- If an attempt is made to display a real-time report based on PI records, the KAVJS5001-I error message is displayed.
- If an alarm is bound to a PI record, that alarm will not function.

#2

The following formula can be used to estimate the agent log file size:

$$\text{Agent log (kilobytes)} = ((a \times 24 \times 3600)/b \times 4)/(4 \times 1024)$$

Legend:

a: Number of days agent logs are stored

b: Interval value of the instance

For agent logs, the maximum number of files collected for each instance is (8 + the number of monitoring targets x 4). If there is not enough free space on the hard disk, agent logs result in an output error. For details about agent logs, see *7.3 Log information*.

Use the `jpccconf inst setup` command to set up an instance environment.

To set up an instance environment:

1. Execute the `jpccconf inst setup` command.

The command sets an instance environment with an instance name of `inst1`:

```
jpccconf inst setup -key RMPlatform -inst inst1
```

For details about the `jpccconf inst setup` command, see the chapter that describes commands in the manual *Job Management Partner 1/Performance Management Reference*.

2. Set up an instance environment for PFM - RM for Platform.

Enter each instance environment setting for PFM - RM for Platform according to the command's instructions. For details about each instance environment setting, see Table 2-21. After you enter each setting, press the **Enter** key. To use a displayed default value, press the **Enter** key.

The following example sets all instance environment settings to the default values:

```
/opt/jplpc/tools>jpccconf inst setup -key RMPlatform -inst
inst1
Interval                [300]                :<Enter>
Std_Category            [Y]                  :<Enter>
Disk_Category           [Y]                  :<Enter>
Network_Category       [Y]                  :<Enter>
```

```

Log_Size (MB) [3] :<Enter>
KAVE05080-I The instance environment is now being created.
(servicekey#=RMPlatform, inst=inst1)
KAVE05081-I The instance environment has been created.
(servicekey#=RMPlatform, inst=inst1)

```

#

If PFM - Manager's product name display function is disabled, agt7 is displayed for servicekey.

When all the settings have been entered, the instance environment is configured. The following table shows the directory structure of an instance environment.

Table 2-22: Directory structure of an instance environment (for UNIX)

No.	Storage directory	File name	Description
1	/opt ^{#1} /jplpc/agt7/agent/ <i>instance-name</i>	jpcagt.ini	Service startup initialization file of Remote Monitor Collector
2		jpcagt.ini.lck	Lock file for the service startup initialization file of Remote Monitor Collector (for each instance)
3		jpcagt.ini.model ^{#2}	Sample of a service startup initialization file of Remote Monitor Collector
4		status.dat	Intermediate file for internal processing
5		tstatuses.dat	Virtual Agent status information ^{#3}
6		targetlist.ini	List of monitoring targets
7		grouplist.ini	List of groups
8		GARULES.DAT	Grouping rule description file
9		targets	Storage folder for remote agent
10		groups	Storage folder for group agent
11		log	Storage folder for log files
12	/opt ^{#1} /jplpc/agt7/store/ <i>instance-name</i>	*.DB	Performance data file

No.	Storage directory	File name	Description
13		*.IDX	Index files for performance data files
14		*.LCK	Lock files for performance data files
15		jpccsto.ini	Service startup initialization file of Remote Monitor Store
16		jpccsto.ini.model ^{#2}	Model file for the service startup initialization file of Remote Monitor Store
17		status.dat	Intermediate file for internal processing
18		*.DAT	Definition file for a data model
19		dump	Export folder
20		backup	Backup folder
21		partial	Partial backup folder
22		import	Import folder
23		log	Storage folder for log files

#1

If you run a logical host, replace `opt` with *environment-directory*. An environment directory is a directory on the shared disk that is specified when the logical host is created.

#2

Use these sample files when you want to restore the settings to their initial values from when the instance environment was configured.

#3

Created when the health check function is enabled.

To change an instance environment, re-execute the `jpccconf inst setup` command and then update each instance environment setting. For details about updating the instance environment settings, see *2.6.2 Updating an instance environment*.

You can change some settings by using PFM - Web Console to edit properties. For details about the information that can be changed by editing properties, see *E.2 List of properties of the Remote Monitor Collector service*.

In an instance environment, the service IDs are as follows:

Service IDs in an instance environment

- For the Remote Monitor Collector service
`7Ainstance-number instance-name [host-name]`
- For the Remote Monitor Store service
`7Sinstance-number instance-name [host-name]`
- For the Group Agent service
`7Ainstance-number instance-name [All@host-name]`

In PFM - RM for Platform, the instance name specified in the `jpccconf inst setup` command is displayed.

If the host name of the PFM - RM host is `host1` and `inst1` is specified as the instance name, the service IDs will be as follows:

- For the Remote Monitor Collector service
`7Ainst1 [host1]`
- For the Remote Monitor Store service
`7S1inst1 [host1]`
- For the Group Agent service
`7Ainst1 [All@host1]`

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

(4) Setting the monitored host

Set information about the monitored host that was specified in (3) *Setting up an instance environment*. You can set multiple monitored hosts for a single instance. To set multiple monitored hosts, repeat this procedure.

Notes about setting the monitored host

- Before you set a monitored host, make sure that the procedure described in 2.2.1(5) *Environment settings required for collecting performance data (for UNIX)* has been completed and the environment has been set up.
- Even if an invalid value is specified when setting the monitored host, the monitored host creation command terminates normally. However, if you start record collection with any invalid settings, performance data will not be collected. For details about troubleshooting when performance data is not collected, see 7.2.5(3) *PFM - RM for Platform was started, but no*

performance data is being collected.

The table below lists and describes the settings for the monitored host. Check this information before you start operations.

Table 2-23: Settings for the monitored host in PFM - RM for Platform

No.	Item name	Description	Setting	Default	Whether updatable by the jpcconf target setup command
1	Target Host	Specifies the name of the monitored host. Specify a host name that can be resolved. ^{#1} The specified monitored host name is used during performance data collection and health checking. If JP1/IM or NNM is linked, this name is also used as the event host name.	From 1 to 32 bytes of alphanumeric characters and the hyphen (-) are permitted. The name cannot begin with a hyphen (-). The specified value must be unique within the instance. ^{#2}	--	U
2	User	Specifies the user used to log on to the monitored host. PFM - RM for Platform uses this user to log on to the monitored host and collect performance data.	From 1 to 256 bytes of characters are permitted. The tab character is not permitted.	--	U
3	Private_Key_File	Specifies the name of the private key file ^{#3} that is used with the SSH public key method.	From 1 to 256 bytes of characters are permitted. The tab character is not permitted.	/opt/ jpic/ agt7/ .ssh/agt7	U
4	Port	Specifies the port number of the SSH server on the monitored host.	Value in the range from 1 to 65,535.	22	U

Legend:

U: Updatable

--: Not set by default

#1

To collect performance data and perform health checking, the name must be resolvable at least by the PFM - RM host.

If the JP1/IM linkage facility is used, the name must be resolvable by the JP1/IM host. If the OpenView linkage facility is used, the name must be resolvable by the PFM - Manager host as well as the NNM host.

#2

All cannot be used because it is a reserved word for group agents.

#3

If a connection attempt using the specified private key fails, the private key set by the SSH server (`IdentityFile`) is used for connection.

To set the monitored host, use the `jpccconf target setup` command.

To set the monitored host:

1. Execute the `jpccconf target setup` command.

In PFM - RM for Platform, we recommend that you specify the host name of the monitored host as the monitoring target.

The following example sets the monitored host `targethost1` with instance name `inst1` as the monitoring target:

```
jpccconf target setup -key RMPlatform -inst inst1 -target
targethost1
```

For details about the `jpccconf target setup` command, see the chapter that describes commands in the manual *Job Management Partner 1/Performance Management Reference*.

2. Set up the monitoring target for PFM - RM for Platform.

Enter settings for the monitored host according to the command's instructions. For details about the settings for the monitored host, see Table 2-23. After you enter each setting, press the **Enter** key to set it. To use a displayed default value, press the **Enter** key.

The following shows an example of setting up a monitoring target:

PFM - RM host to be set up:

- SSH client program: `:/usr/bin/ss`

- Private key: /opt/jp1pc/agt7/.ssh/agt7

Monitored host to be set up:

- Host name: targethost1
- User: ssh-user
- Port number of SSH: 22

```

/opt/jp1pc/tools>jpccnf target setup -key RMPlatform -inst
inst1 -target targethost1
Target Host          []                :targethost1<Enter>
User                 :ssh-user<Enter>
Private_Key_File     [/opt/jp1pc/agt7/.ssh/agt7]:<Enter>
Port                 [22#1]           :<Enter>
KAVE05361-I The monitoring target is now being added.
(servicekey#2=RMPlatform, inst=inst1, target=targethost1)
KAVE05362-I The monitoring target has been added.
(servicekey#2=RMPlatform, inst=inst1, target=targethost1)

```

#1

If the port number used in SSH is not 22, change the value of Port to the port number used in SSH.

#2

If PFM - Manager's product name display function is disabled, agt7 is displayed for servicekey.

When entry of all settings is completed, an environment for the monitoring target is configured. The following table shows the directory structure of the monitoring target environment.

Table 2-24: Directory structure of the monitoring target environment

No.	Storage directory	File name	Description
1	/opt#/jp1pc/agt7/agent/instance-name/ targets	monitoring-target-name.ini	Monitoring target settings file
2		monitoring-target-name.ini.model	Sample of a monitoring target settings file

No.	Storage directory	File name	Description
3	/opt [#] /jpc/agt7/agent/ <i>instance-name</i> / targets/ <i>monitoring-target-name</i>	--	Work directory for the monitoring target

Legend:

--: Not applicable

#

If you run a logical host, replace `opt` with *environment-directory*.

The following service IDs are added by the monitoring target settings:

Service IDs to be added

- Remote Agent service

`7Ainstance-number instance-name [monitoring-target-name@host-name]`

The instance name and monitoring target name will be the values specified in the `jpcconf target setup` command.

If you specify `host1` as the host name of the PFM - RM host, `inst1` as the instance name, and `targethost1` as the monitoring target name, then the service ID will be as follows:

`7Ainst1 [targethost1@host1]`

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

If you want to change information about the monitoring target, re-execute the `jpcconf target setup` command and update the information. For details about updating a monitoring target, see *2.6.3 Updating a monitoring target*.

You can change some settings by using PFM - Web Console to edit properties. For details about the information that can be changed by editing properties, see *E.3 List of properties of remote agents and group agents*.

(5) Network settings Optional

You must specify network settings only if you need to change the network environment settings for the network configuration where Performance Management is used.

There are two types of network environment settings, as described below. Change network settings as necessary.

- IP address setting

Set this information to use Performance Management in a network that is connected to multiple LANs. You set multiple IP addresses by defining the host names and IP addresses in the `jpchosts` file. Make sure that the specified `jpchosts` file is consistent throughout the entire Performance Management system.

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

- Port number setting

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 the port number settings, 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

The operation status of Performance Management is output to log files unique to Performance Management. This setting is required in order to change the size of these log files.

For the common message log, two files with a size of 2,048 kilobytes each are used by default. For details about changing the common message log, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

(7) Changing performance data storage locations

These settings are required in order to change the following settings for the performance data that is managed by PFM - RM for Platform:

- Database storage location
By default, `/opt/jp1pc/agt7/store/instance-name/` is set.
- Backup location
By default, `/opt/jp1pc/agt7/store/instance-name/backup/` is set.
- Partial backup location
By default, `/opt/jp1pc/agt7/store/instance-name/partial/` is set.

- Export location
By default, `/opt/jp1pc/agt7/store/instance-name/dump/` is set.
- Import location
By default, `/opt/jp1pc/agt7/store/instance-name/import/` is set.

Note

If you use a logical host for operation, replace `opt` with *environment-directory*.

For details about changing performance data storage locations, see *2.6.1 Changing performance data storage locations*.

(8) Setting the connection-target PFM - Manager

You must specify on the PFM - RM host information about the PFM - Manager that manages PFM - RM for Platform. The `jpccconf mgrhost define` command is used to make this setting.

Notes about setting the connection-target PFM - Manager

- Only one PFM - Manager can be set as the connection destination even when multiple PFM - RMs are installed on the same host. A different PFM - Manager cannot be specified for each PFM - RM.
- If PFM - RM for Platform and PFM - Manager are installed on the same host, then the PFM - Manager on the local host is the connection-target PFM - Manager. In this case, you cannot change the connection-target PFM - Manager to any other PFM - Manager. To connect to PFM - Manager on a remote host, install PFM - RM for Platform on a different host than for PFM - Manager.

To set the connection-target PFM - Manager:

1. Stop the Performance Management programs and services.

If any Performance Management programs and services are running on the local host, stop all of them before starting the setup procedure. If Performance Management programs and services are running during execution of the `jpccconf mgrhost define` command, a message is displayed that asks you to terminate them.

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

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

The following shows an example of command execution when the connection-target PFM - Manager is located on the `host01` host:

```
jpccconf mgrhost define -host host01
```

(9) Action log output settings

These settings are required in order to output action logs at the following times:

- When a PFM service starts
- When a PFM service stops
- When the PFM - Manager connection status is changed

An action log contains log information about exceeded threshold values caused by factors such as system overloads; its output is linked with the alarm function. For details about the action log output settings, see *I. Outputting Action Log Data*.

2.2.5 SSH connection setting method

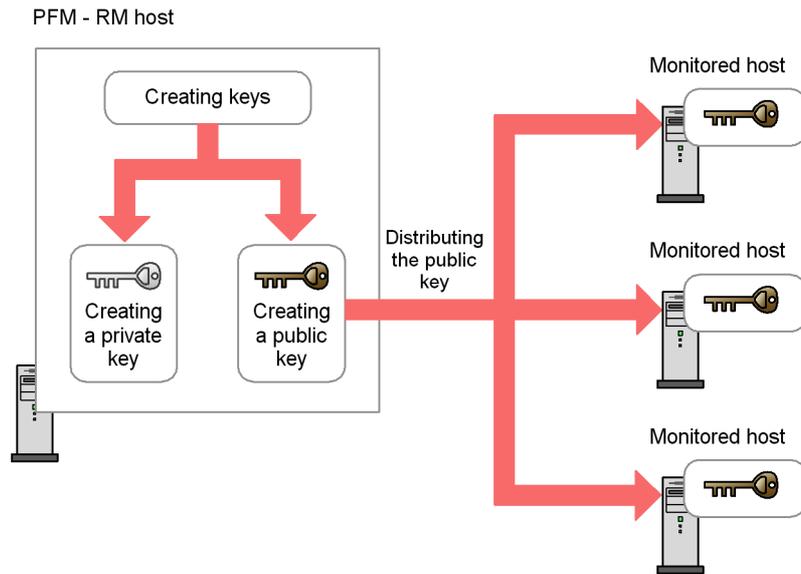
This subsection describes how to set SSH connection. For SSH authentication, the public key authentication method is used.

To connect SSH, you need the following settings:

- Enabling the SSH server's public key authentication
Specify this setting at the monitored hosts.
- Creating keys
Specify this setting at the PFM - RM host.
- Placing the private key on the PFM - RM host
Specify this setting at the PFM - RM host.
- Placing the public key on the monitored hosts
Specify this setting at the monitored hosts.

The following figure shows the concept of public key authentication.

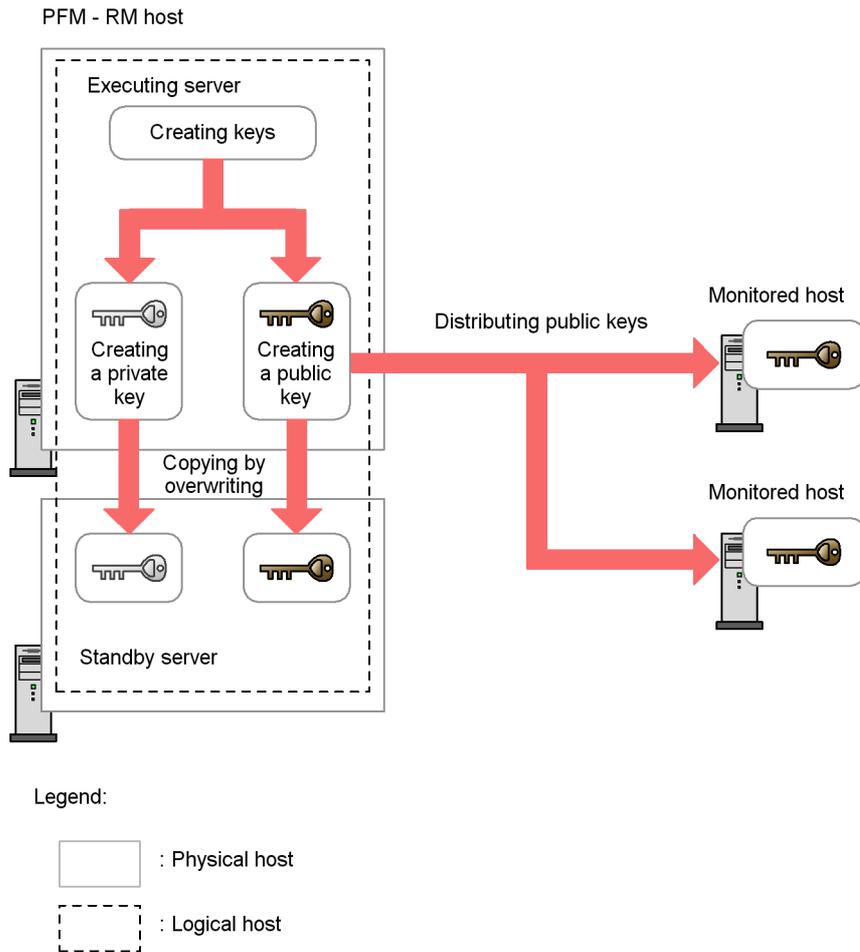
Figure 2-13: Concept of public key authentication



There are two ways to perform public key authentication in a cluster system. One is by using the same key for both executing and standby nodes, and the other is by using different keys.

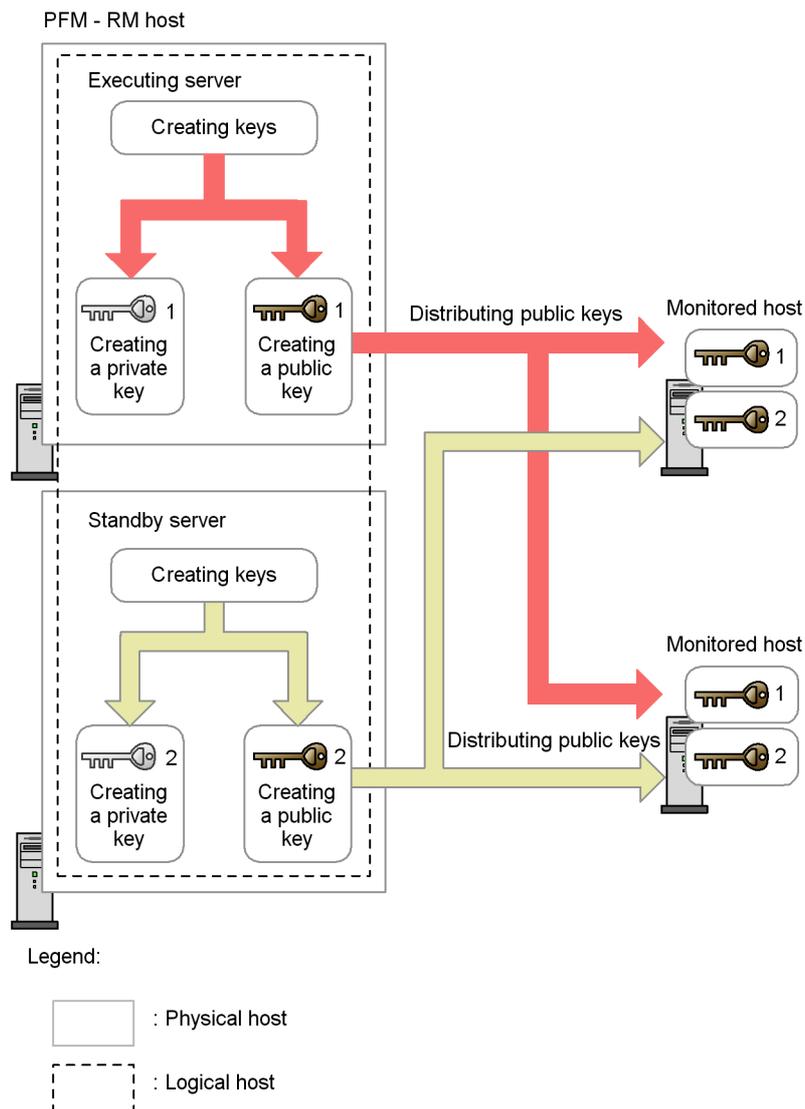
To use the same key for both executing and standby nodes, copy the standby node's key file to the executing node's key file by overwriting. The following figure shows the concept of public key authentication using the same key.

Figure 2-14: Concept of public key authentication (using the same key for both executing and standby nodes)



To use different keys for the executing and standby nodes, you must register the key files for both the executing node and the standby node into the monitored hosts. The following figure shows the concept of public key authentication using different keys.

Figure 2-15: Concept of public key authentication (using different keys for executing and standby nodes)



(1) Enabling the SSH server's public key authentication

To enable public key authentication:

1. Log on to the monitored host as a superuser.
2. Open `/etc/ssh/sshd_config`.

2. Installation and Setup

3. Set `PubkeyAuthentication` to `yes`.
4. Execute the following command to restart the `sshd` service:

```
[root@TargetHost.ssh]$ /etc/rc.d/init.d/sshd restart
```

Reference note:

To log on as a superuser and collect information, open `/etc/ssh/sshd_config` and then set `PermitRootLogin` to `yes`. After that, restart the `sshd` service.

(2) Creating keys

Keys are created automatically. Although you can create keys manually, we recommend that you use the keys that are created automatically unless otherwise necessary.

(a) Creating keys automatically

When you install PFM - RM for Platform, both private and public keys are created automatically in `/opt/jp1pc/agt7/.ssh/`.

The following table lists and describes the storage directory for the private and public keys, the file names, and the settings.

Table 2-25: Storage directory for the private and public keys, the file names, and settings

No.	Storage directory and file name	Attribute	Owner	Description	
1	<code>/opt/jp1pc/agt7/.ssh/</code>	--	<code>root:root</code>	Hidden directory for storing private and public keys	
2		<code>agt7</code>		<code>600</code>	Private key file
3		<code>agt7.pub</code>		<code>644</code>	Public key file

Legend:

--: Not applicable

(b) Creating keys manually

This subsection describes how to create keys manually.

You can create keys by logging on to the PFM - RM host as a superuser and then executing the `ssh-keygen` command. The only difference between RSA and DSA encryption is the encryption algorithms; their operation methods are the same.

To create RSA keys:

1. Log on to the PFM - RM host as a superuser.

2. Execute the `ssh-keygen -t rsa` command.

This command creates an RSA key.

To create a DSA key, specify the `-s dsa` option instead of the `-t rsa` option.

3. Determine the destination and name of the private key.

By default, `~/.ssh/id_rsa (RSA)` is set.

4. Press the **Enter** key twice.

When you are asked to enter a pass phrase for the private key, press the **Enter** key without entering anything. When re-entry is prompted, press the **Enter** key again without entering anything.

The following shows an example of `ssh-keygen -t rsa` command execution:

```
[root@HOST]$ ssh-keygen -t rsa
Generating public/private rsa key pair.
Enter file in which to save the key (/home/ssh-user/.ssh/
id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/ssh-user/.ssh/
id_rsa.
Your public key has been saved in /home/ssh-user/.ssh/
id_rsa.pub.
The key fingerprint is:
ax:xx:xx:xx:xx:bx:xx:xc:xx:xx:xx:xd:xd:xa:ed:xx root@HOST
```

Notes about creating keys

- Securely manage information about private keys.
- Creation of keys (a pair of public and private keys) should not introduce any problem in any environment or tool because it does not depend on environments or tools. However, after creating keys, you must place the private and public keys appropriately.

(3) Placing the public key on the monitored hosts

Place the public key created in (2) *Creating keys* on the monitored hosts. When there are multiple monitored hosts, be sure to perform this procedure on all of them.

To place the public key on a monitored host:

1. Log on to the monitored host as a remote user.
2. Move to the `.ssh` directory.

If the `.ssh` directory does not exist, create it. For the directory attribute, specify

700.

3. Execute the `scp` command.

The public key file that has already been created is received.

4. Execute the `cat` command.

The contents of the public key file are redirected to the authentication key file. Also, the contents of the received public key file are added to the authentication key file.

The name of the authentication key file is set by `AuthorizedKeysFile` of `/etc/ssh/sshd_config`. By default, `~/.ssh/authorized_keys` is set.

5. Delete the received public key file.

6. Execute the `chmod` command to change the attribute of the private key file to `600`.

The following shows an example of executing the `scp`, `cat`, and `chmod` commands:

```
[ClientUser@TargetHost ]$ cd .ssh
[ClientUser@TargetHost .ssh]$ scp root@RMHost:/opt/jplpc/agt7/
.ssh/agt7.pub .
root@RMHost's password: entering-password
agt7.pub                               100% 233      0.2KB/s  00:00
[ClientUser@TargetHost .ssh]$ cat agt7.pub >> authorized_keys
[ClientUser@TargetHost .ssh]$ rm agt7.pub
[ClientUser@TargetHost .ssh]$ chmod 600 authorized_keys
```

(4) Checking the connection and performing fingerprint authentication

To check whether the PFM - RM host and a monitored host can connect to each other:

1. Log on to the PFM - RM host as a superuser.
2. Using the created private key, execute the `ssh` client command on the monitored host.

The connection process begins.

3. During the initial connection, perform fingerprint authentication.

Register the fingerprint of the public key of the monitored host.

If connection is established successfully without entering anything, the SSH connection setting is completed.

If an error occurs or an entry is requested, check if the procedure was executed correctly.

The following shows an example of the settings for checking the connection:

```
[root@RMHost]$ /usr/bin/ssh -i /opt/jplpc/agt7/.ssh/agt7 -p 22
ssh-user@TargetHost
The authenticity of host 'TargetHost (xxx.xxx.xxx.xxx)' can't be
established.
RSA key fingerprint is
xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'TargetHost,xxx.xxx.xxx.xxx' (RSA) to
the list of known hosts.
Last login: Mon Mar 23 17:17:52 2009 from xxx.xxx.xxx.xxx
[ssh-user@TargetHost ~]$ exit
logout

Connection to TargetHost closed.
[root@RMHost]$
```

Note

PFM - RM for Platform assumes that fingerprint authentication has already been completed. Because you can register a fingerprint during the initial SSH client connection, we recommend that you complete the procedure described here at that point.

2.2.6 Notes about installation and setup (for UNIX)

This subsection provides notes about installing and setting up Performance Management in a UNIX environment.

(1) 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.

(2) Notes about installing multiple Performance Management programs on the same host (for UNIX)

The notes about installing multiple Performance Management programs on the same host are the same as for the Windows environment.

See 2.1.6(3) *Notes about installing multiple Performance Management programs on the same host (for Windows)*.

(3) Notes about upgrading (for UNIX)

The notes about upgrading are the same as for the Windows environment.

See 2.1.6(4) *Notes about upgrading (for Windows)*.

(4) Notes about linking with other systems (for UNIX)

The notes about linking with other systems are the same as for the Windows

environment.

See 2.1.6(5) *Notes about linking with other systems (for Windows)*.

(5) Notes about installing PFM - RM for Platform in a UNIX environment

This subsection provides notes about installing PFM - RM for Platform in a UNIX environment.

- If you install PFM - RM for Platform in an environment where no Performance Management program has been installed, make sure that there are no files or directories in the PFM - RM for Platform installation directory.
- If `Install failed` is displayed on the status bar during installation and the installation fails, collect the `/etc/.hitachi/.hitachi.log` log file. This log file will be overwritten during the next installation process. Make a backup of this file, as required.
- If you install a Performance Management program by placing a link to the PFM - RM for Platform installation directory, some of the files and directories may remain in the linked directory even when all Performance Management programs are uninstalled. You must delete these files and directories manually. Note that during installation, if a linked directory contains files and directories with the same names as source files and directories, those files and directories will be overwritten.
- If the `/opt/jp1pc/setup` directory contains the setup file of PFM - RM for Platform, additional setup of a new PFM - RM for Platform will be executed.
- To run PFM - RM for Platform as services, use an account with superuser permissions.
- Before you install a Performance Management program, check to see if any of the security-related programs described below are installed. If such a program is installed, take appropriate action according to the information provided below.
 - Security monitoring program
Either terminate the security monitoring program or change its settings so that installation of the Performance Management program 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 may slow down the installation process, the installation may fail, or the program may not install correctly.
 - Process monitoring program

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

Installation of a Performance Management program may fail if these services and processes are started or stopped by the process monitoring program during the installation process.

2.3 Uninstallation and unsetup (in Windows)

This section describes how to uninstall PFM - RM for Platform and cancel its setup in a Windows environment.

2.3.1 Before canceling the setup (for Windows)

This subsection provides notes about uninstalling PFM - RM for Platform and canceling its setup.

(1) Notes about OS user permissions required for uninstallation

- When you uninstall PFM - RM for Platform, make sure that you use an account that has Administrator permissions.

(2) Notes about network

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

(3) Notes about programs

- If you uninstall PFM - RM for Platform 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 may remain in the system. In such a case, you must manually delete all files and folders under the installation folder.
- If you attempt to uninstall PFM - RM for Platform 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 may be displayed. If this occurs, restart the system to complete the uninstallation procedure.
- If PFM - Base and PFM - RM for Platform are both installed on the same host, PFM - Base cannot be uninstalled unless you uninstall PFM - RM for Platform. In such a case, uninstall PFM - RM for Platform, and then uninstall PFM - Base. Similarly, if PFM - Manager and PFM - RM for Platform are installed on the same host, PFM - Manager cannot be uninstalled unless you uninstall PFM - RM for Platform. In this case, uninstall PFM - RM for Platform, and then uninstall PFM - Manager.

(4) Notes about services

- Uninstalling PFM - RM for Platform may not delete the service information that is displayed by the `jpctool service list` command. In such a case, use the `jpctool service delete` command at the host where PFM - Manager is installed to delete the service information. After the command has executed,

restart the PFM - Manager.

(5) Other notes

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

2.3.2 How to cancel the setup (for Windows)

This subsection describes how to cancel the setup of PFM - RM for Platform.

(1) Canceling the setup for a monitoring target

To cancel the setup for a monitoring target, first check the name of the monitoring target, and then use the PFM - RM host to delete the monitoring target.

To check the name of a monitoring target, use the `jpccconf target list` command. To delete a configured monitoring target, use the `jpccconf target unsetup` command.

Reference note:

There is no need to stop PFM - RM for Platform services while you are deleting a monitoring target.

To delete a monitoring target:

1. Check the name of the monitoring target.

Execute the `jpccconf target list` command with the service key that indicates PFM - RM for Platform and the instance name specified:

```
jpccconf target list -key RMPlatform -inst inst1
```

The names of all monitoring targets are displayed:

```
Targets:
targethost1
targethost2
Groups:
All
```

2. Delete the desired monitoring target.

Execute the `jpccconf target unsetup` command with the service key that indicates PFM - RM for Platform, the instance name, and the name of the monitoring target specified:

```
jpccconf target unsetup -key RMPlatform -inst inst1 -target targethost1
```

When the `jpccconf target unsetup` command in this example terminates normally, `targethost1` will no longer be a monitoring target.

Note:

Canceling the setup for a monitoring target may not delete the service information that is displayed by the `jpctool service list` command. In such a case, use the `jpctool service delete` command at the host where PFM - Manager is installed to delete the service information. After the command executes, restart the PFM - Manager service. The following shows a specification example:

- Instance name: `inst1`
- Monitoring target name: `targethost1`
- PFM - RM host name: `lhost1`
- Service ID of the Remote Agent service:
`7A1inst1[targethost1@lhost1]`

```
jpctool service delete -id 7?1inst1[targethost1@lhost1]
-host lhost1
```

For details about the commands, see the chapter that describes commands in the manual *Job Management Partner 1/Performance Management Reference*.

Canceling the setup for a monitoring target does not delete the folders and files listed below. You must delete these folders and files manually.

- *PFM-RM-for-Platform-installation-folder*#\agt7\agent\instance-name\targets\monitoring-target-name
- *PFM-RM-for-Platform-installation-folder*#\agt7\agent\instance-name\log\target_monitoring-target-name_nn

#

If you use a logical host for operation, replace *PFM-RM-for-Platform-installation-folder* with *environment-folder\jp1pc*.

(2) Canceling an instance environment setup

To cancel the setup for an instance environment, first check the name of the instance, and then delete the instance environment. Execute deletion of an instance environment at the PFM - RM host. To check the name of an instance, use the `jpccconf inst list` command. To delete a configured instance environment, use the `jpccconf inst unsetup` command.

To delete an instance environment:

1. Check the name of the instance.

Execute the `jpccconf inst list` command with the service key that indicates PFM - RM for Platform specified:

```
jpccconf inst list -key RMPlatform
```

For example, if the set instance name is `inst1`, the command displays `inst1`.

2. If any services of PFM - RM for Platform are running in the instance environment, stop all of them.

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

3. Delete the instance environment.

Execute the `jpccconf inst unsetup` command with the service key that indicates PFM - RM for Platform and the instance name specified.

For example, if the set instance name is `inst1`, specify the command as follows:

```
jpccconf inst unsetup -key RMPlatform -inst inst1
```

When the `jpccconf inst unsetup` command terminates normally, the folders configured as the instance environment, the service ID, and the Windows services are deleted.

Note:

Canceling the setup of an instance environment may not delete the service information that is displayed by the `jpctool service list` command. In such a case, use the `jpctool service delete` command at the host where PFM - Manager is installed to delete the service information. After the command executes, restart the PFM - Manager service. The following shows a specification example:

- Instance name: `inst1`
- Host name: `lhost1`
- Service ID of the Remote Monitor Collector service:
`7A1inst1[lhost1]`
- Service ID of the Remote Monitor Store service: `7S1inst1[lhost1]`
- Service ID of the Group Agent service: `7S1inst1[All@lhost1]`

```
jpctool service delete -id 7?1inst1[lhost1] -host lhost1
```

```
jpctool service delete -id 7?1inst1[*@lhost1] -host lhost1
```

For details about the commands, see the chapter that describes commands in the manual *Job Management Partner 1/Performance Management Reference*.

2.3.3 How to uninstall (for Windows)

To uninstall PFM - RM for Platform:

1. At the host where PFM - RM for Platform is to be uninstalled, log on as a user with Administrator permissions.
2. At the local host, stop the Performance Management programs and services.

Display the service information to make sure that no services are running. If any Performance Management programs and services are running on the local host, stop all the active programs and services. You must stop all services on both physical and logical hosts.

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

3. Select the Performance Management program to be uninstalled.

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

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

The selected program is uninstalled.

Precautions regarding uninstallation in a Windows Server 2008 environment

If user account control functionality (UAC) is enabled on the operating system, the User Account Control dialog box might be displayed during uninstallation. If this dialog box is displayed, click the **Continue** button to continue uninstallation, or click the **Cancel** button to cancel uninstallation.

Note:

If you have changed the WMI connection settings as explained in *2.1.5 WMI connection setting method*, we recommend that you restore the initial settings.

2.4 Uninstallation and unsetup (in UNIX)

This section describes how to uninstall PFM - RM for Platform and cancel its setup in a UNIX environment.

2.4.1 Before canceling the setup (for UNIX)

This subsection provides notes about uninstalling PFM - RM for Platform and canceling its setup.

(1) Notes about OS user permissions required for uninstallation

- When you uninstall PFM - RM for Platform, make sure that you use an account that has the superuser permissions.

(2) Notes about network

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

(3) Notes about programs

- If you uninstall PFM - RM for Platform while Performance Management programs and services or other programs that reference Performance Management files are running, some files and directories may remain in the system. In such a case, you must manually delete all files and directories under the installation directory.
- If PFM - Base and PFM - RM for Platform are both installed on the same host, PFM - Base cannot be uninstalled unless you uninstall PFM - RM for Platform. In such a case, uninstall PFM - RM for Platform, and then uninstall PFM - Base. Similarly, if PFM - Manager and PFM - RM for Platform are installed on the same host, PFM - Manager cannot be uninstalled unless you uninstall PFM - RM for Platform. In this case, uninstall PFM - RM for Platform, and then uninstall PFM - Manager.

(4) Notes about services

- When you uninstall PFM - Manager, make sure that all Performance Management programs and services are stopped throughout the entire Performance Management system.
- Uninstalling PFM - RM for Platform may not delete the service information that is displayed by the `jpctool service list` command. In such a case, use the `jpctool service delete` command at the host where PFM - Manager is installed to delete the service information. After the command has executed, restart the PFM - Manager.

2.4.2 How to cancel the setup (for UNIX)

This subsection describes how to cancel the setup of PFM - RM for Platform.

(1) *Canceling the setup for a monitoring target*

To cancel the setup for a monitoring target, first check the name of the monitoring target and then use the PFM - RM host to delete the monitoring target.

To check the name of a monitoring target, use the `jpccconf target list` command. To delete a configured monitoring target, use the `jpccconf target unsetup` command.

Reference note:

There is no need to stop PFM - RM for Platform services while you are deleting a monitoring target.

To delete a monitoring target:

1. Check the name of the monitoring target.

Execute the `jpccconf target list` command with the service key that indicates PFM - RM for Platform and the instance name specified.

```
jpccconf target list -key RMPlatform -inst inst1
```

The names of all monitoring targets are displayed:

```
Targets:
targethost1
targethost2
Groups:
All
```

2. Delete the desired monitoring target.

Execute the `jpccconf target unsetup` command with the service key that indicates PFM - RM for Platform, the instance name, and the name of the monitoring target specified:

```
jpccconf target unsetup -key RMPlatform -inst inst1 -target
targethost1
```

When the `jpccconf target unsetup` command in this example terminates normally, `targethost1` will no longer be a monitoring target.

Note:

Canceling the setup for a monitoring target may not delete the service information that is displayed by the `jpctool service list` command. In such a case, use the `jpctool service delete` command at the host where PFM - Manager is installed to delete the service information. After the command executes, restart the PFM - Manager service. The following shows a specification example:

- Instance name: `inst1`
- Monitoring target name: `targethost1`
- PFM - RM host name: `lhost1`
- Service ID of the Remote Agent service:
`7A1inst1[targethost1@lhost1]`

```
jpctool service delete -id 7?1inst1[targethost1@lhost1]
-host lhost1
```

For details about the commands, see the chapter that describes commands in the manual *Job Management Partner 1/Performance Management Reference*.

Canceling the setup for a monitoring target does not delete the directories and files listed below. You must delete these directories and files manually.

- `/opt#/jplpc/agt7/agent/instance-name/targets/monitoring-target-name`
- `/opt#/jplpc/agt7/agent/instance-name/log/target_monitoring-target-name_nn`

#

If you use a logical host for operation, replace `opt` with *environment-directory*.

(2) Canceling an instance environment setup

To cancel the setup for an instance environment, first check the name of the instance, and then delete the instance environment. Execute deletion of an instance environment at the PFM - RM host. To check the name of an instance, use the `jpccconf inst list` command. To delete a configured instance environment, use the `jpccconf inst unsetup` command.

To delete an instance environment:

1. Check the name of the instance.

Execute the `jpccconf inst list` command with the service key that indicates PFM - RM for Platform specified.

```
jpccconf inst list -key RMPlatform
```

For example, if the set instance name is `inst1`, the command displays `inst1`.

2. If any services of PFM - RM for Platform are running in the instance environment, stop all of them.

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

3. Delete the instance environment.

Execute the `jpccconf inst unsetup` command with the service key that indicates PFM - RM for Platform and the instance name specified.

For example, if the set instance name is `inst1`, specify the command as follows:

```
jpccconf inst unsetup -key RMPlatform -inst inst1
```

When the `jpccconf inst unsetup` command terminates normally, the directories configured as the instance environment and the service ID are deleted.

Note:

Canceling the setup of an instance environment may not delete the service information that is displayed by the `jpctool service list` command. In such a case, use the `jpctool service delete` command at the host where PFM - Manager is installed to delete the service information. After the command executes, restart the PFM - Manager service. The following shows a specification example:

- Instance name: `inst1`
- Host name: `lhost1`
- Service ID of the Remote Monitor Collector service:
`7A1inst1[lhost1]`
- Service ID of the Remote Monitor Store service: `7S1inst1[lhost1]`
- Service ID of the Group Agent service: `7S1inst1[All@lhost1]`

```
jpctool service delete -id 7?1inst1[lhost1] -host lhost1
```

```
jpctool service delete -id 7?1inst1[*@lhost1] -host lhost1
```

For details about the commands, see the chapter that describes commands in the manual *Job Management Partner 1/Performance Management Reference*.

2.4.3 How to uninstall (for UNIX)

To uninstall PFM - RM for Platform:

1. At the host where a Performance Management program is to be uninstalled, log on as superuser. Alternatively, use the `su` command to change the user to a superuser.
2. At the local host, stop the Performance Management programs and services.
Display the service information to make sure that no services are running. If any Performance Management programs and services are running on the local host, stop all the active programs and services. You must stop all services on both physical and logical hosts.
For details about how to display and stop services, see the chapter that describes starting and stopping Performance Management in the *Job Management Partner I/Performance Management User's Guide*.
3. Execute the following command to start the Hitachi Program Product Installer:
`/etc/hitachi_setup`
The Hitachi Program Product Installer starts and the initial window is displayed.
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 want to uninstall, and then enter `D`.
The selected program is uninstalled. To select another program, move the cursor to the desired program and then press the space key to select it.
6. When uninstallation is completed successfully, enter `Q`.
The initial window of the Hitachi Program Product Installer is displayed again.

Note:

If you have set private and public keys that are used for SSH public key authentication settings as explained in *2.2.5 SSH connection setting method*, delete the keys, if necessary.

2.5 Changing the PFM - RM for Platform system configuration

When a change occurs, such as the monitoring target system's network configuration and host names, you must change the system configuration for PFM - RM for Platform.

When you change the system configuration for PFM - RM for Platform, 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*.

2.6 Changing the PFM - RM for Platform operation method

It may be necessary to change the operation method for PFM - RM for Platform for a reason such as a change made to the method for handling the collected operation monitoring data. This section describes how to change the operation method for PFM - RM for Platform. For details about how to change the operation method for the entire Performance Management system, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

2.6.1 Changing performance data storage locations

The performance data collected by PFM - RM for Platform is managed in the Store database of the Remote Monitor Store service of PFM - RM for Platform. This subsection describes how to change performance data storage locations.

You use the `jpccconf db define` command to change the storage directories listed below for performance data managed in the Store database. For details about the `jpccconf db define` command, see the chapter that describes commands in the manual *Job Management Partner 1/Performance Management Reference*.

- Storage directory
- Backup directory
- Export directory
- Partial backup directory
- Import directory

(1) In Windows

The following table lists and describes the option names set by the `jpccconf db define` command and their permitted values.

Table 2-26: Items set by the `jpccconf db define` command (for Windows)

No.	Option name	Description	Permitted value (Store version 2.0)	Default
1	bd	Sets the performance data backup folder ^{#1}	Path name of 1 to 211 bytes	<i>installation-folder</i> ^{#2} \agt7\store\ <i>instance-name</i> \backup
2	bs	Sets the maximum generation number when performance data is backed up	From 1 to 9	5

No.	Option name	Description	Permitted value (Store version 2.0)	Default
3	id	Sets the performance data import folder ^{#1}	Path name of 1 to 222 bytes	<i>installation-folder</i> ^{#2} \agt7\store\ <i>instance-name</i> \import
4	bd	Sets the performance data partial backup folder ^{#1}	Path name of 1 to 214 bytes	<i>installation-folder</i> ^{#2} \agt7\store\ <i>instance-name</i> \partial
5	dd	Sets the performance data export folder ^{#1}	Path name of 1 to 127 bytes	<i>installation-folder</i> ^{#2} \agt7\store\ <i>instance-name</i> \dump
6	sd	Sets the performance data creation folder ^{#1}	Path name of 1 to 214 bytes	<i>installation-folder</i> ^{#2} \agt7\store\ <i>instance-name</i>

#1

Specify either the folder name relative to the default Store database storage folder (*installation-folder*\agt7\store) or the absolute path.

#2

For the default values for logical host operation, replace *installation-folder* with *environment-folder*\jplpc.

(2) In UNIX

The following table lists and describes the option names set by the `jpcconf db define` command and their permitted values.

Table 2-27: Items set by the `jpcconf db define` command (for UNIX)

No.	Option name	Description	Permitted value (Store version 2.0)	Default
1	bd	Sets the performance data backup directory ^{#1}	Path name of 1 to 211 bytes	/opt ^{#2} / jplpc/agt7/ store/ <i>instance-name</i> / backup
2	bs	Sets the maximum generation number when performance data is backed up	From 1 to 9	5
3	id	Sets the performance data import directory ^{#1}	Path name of 1 to 222 bytes	/opt ^{#2} / jplpc/agt7/ store/ <i>instance-name</i> / import

No.	Option name	Description	Permitted value (Store version 2.0)	Default
4	bd	Sets the performance data partial backup directory ^{#1}	Path name of 1 to 214 bytes	/opt ^{#2} / jplpc/agt7/ store/ instance-name/ partial
5	dd	Sets the performance data export directory ^{#1}	Path name of 1 to 127 bytes	/opt ^{#2} / jplpc/agt7/ store/ instance-name/ dump
6	sd	Sets the performance data creation directory ^{#1}	Path name of 1 to 214 bytes	/opt ^{#2} / jplpc/agt7/ store/ instance-name

#1

Specify either the directory name relative to the default Store database storage directory (/opt/jplpc/agt7/store) or the absolute path.

#2

For the default values for logical host operation, replace opt with *environment-directory*.

2.6.2 Updating an instance environment

This subsection describes how to change an instance environment of PFM - RM for Platform while the Performance Management system is running.

(1) In Windows

To update an instance environment, check the instance name, and then update individual instance environment settings. Use the PFM - RM host to set individual instance environment settings.

Use the following table to check the information to be updated beforehand.

Table 2-28: Instance environment settings for PFM - RM for Platform (for Windows)

No.	Item name	Description	Setting	Default
1	Interval	Specifies the collection interval for the collection process.	Specify a value in the range from 60 to 3,600 (seconds).	Previous setting

No.	Item name	Description	Setting	Default
2	Std_Category	Specifies whether the collection process is to collect basic information (PI and PI_CPU records).	Specify one of the following values: <ul style="list-style-type: none"> Y: Collect N: Do not collect 	
3	Disk_Category	Specifies whether the collection process is to collect disk information (PI_PDSK and PI_LDSK records).	Specify one of the following values: <ul style="list-style-type: none"> Y: Collect N: Do not collect 	
4	Network_Category	Specifies whether the collection process is to collect network information (PI_NET record).	Specify one of the following values: <ul style="list-style-type: none"> Y: Collect N: Do not collect 	
5	RMHost_User	Specifies the user account used at the PFM - RM host.	From 1 to 256 bytes of characters are permitted. The tab character is not permitted.	
6	RMHost_Password	Specifies the password for the account used at the PFM - RM host. The characters entered in this item are not displayed on the screen. If you enter this password, you are prompted to re-enter the same password.	From 1 to 256 bytes of characters are permitted. The tab character is not permitted.	
7	RMHost_Domain	Specifies the domain name to which the account used at the PFM - RM host belongs. <ul style="list-style-type: none"> If this account belongs to a workgroup, specify nothing. 	From 1 to 256 bytes of characters are permitted. The tab character is not permitted.	
8	Log_Size	Specifies the maximum size of one agent log file.	Specify a value in the range from 1 to 32 (megabytes). A value of 3 or greater is recommended.	

To check the name of an instance, use the `jpccconf inst list` command. To update an instance environment, use the `jpccconf inst setup` command.

To update multiple instance environments, repeat the procedure described below.

To update an instance environment:

1. Check the name of the instance.

Execute the `jpccconf inst list` command with the service key that indicates PFM - RM for Platform specified.

```
jpccconf inst list -key RMPlatform
```

For example, if the set instance name is `inst1`, the command displays `inst1`.

2. If any services of PFM - RM for Platform are running in the instance environment that you want to update, stop all of them.

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

If a service of the instance environment that is to be updated is running during execution of the `jpccconf inst setup` command, a confirmation message is displayed to enable you to stop the service. When you stop the service, the update processing resumes. If you do not stop the service, the update processing is canceled.

3. Execute the `jpccconf inst setup` command with the service key that indicates PFM - RM for Platform and the instance name specified.

For example, to update an instance environment whose instance name is `inst1`, execute the following command:

```
jpccconf inst setup -key RMPlatform -inst inst1
```

4. Update the instance environment for PFM - RM for Platform.

Enter the applicable items listed in Table 2-28 according to the command's instructions. The current settings are displayed. To not change a displayed value, press the **Enter** key. When all entries have been made, the instance environment is updated.

5. Restart the services for the updated instance environment.

For details about how to start services, see the chapter that describes starting and stopping Performance Management 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) In UNIX

To update an instance environment, check the instance name, and then update individual instance environment settings. Use the PFM - RM host to set individual instance environment settings.

Use the following table to check the information to be updated beforehand.

Table 2-29: Instance environment settings for PFM - RM for Platform (for UNIX)

No.	Item name	Description	Setting	Default
1	Interval	Specifies the collection interval for the collection process.	Specify a value in the range from 60 to 3,600 (seconds).	Previous setting
2	Std_Category	Specifies whether the collection process is to collect basic information (PI and PI_CPU records).	Specify one of the following values: <ul style="list-style-type: none"> • Y: Collect • N: Do not collect 	
3	Disk_Category	Specifies whether the collection process is to collect disk information (PI_PDSK and PI_LDSK records).	Specify one of the following values: <ul style="list-style-type: none"> • Y: Collect • N: Do not collect 	
4	Network_Category	Specifies whether the collection process is to collect network information (PI_NET record).	Specify one of the following values: <ul style="list-style-type: none"> • Y: Collect • N: Do not collect 	
5	Log_Size	Specifies the maximum size of one agent log file.	Specify a value in the range from 1 to 32 (megabytes). A value of 3 or greater is recommended.	

To check the name of an instance, use the `jpccconf inst list` command. To update an instance environment, use the `jpccconf inst setup` command.

To update multiple instance environments, repeat the procedure described below.

To update an instance environment:

1. Check the name of the instance.

Execute the `jpccconf inst list` command with the service key that indicates PFM - RM for Platform specified.

```
jpccconf inst list -key RMPlatform
```

For example, if the set instance name is `inst1`, the command displays `inst1`.

2. If any services of PFM - RM for Platform are running in the instance environment that you want to update, stop all of them.

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

If a service of the instance environment that is to be updated is running during execution of the `jpccconf inst setup` command, a confirmation message is displayed to enable you to stop the service. When you stop the service, the update processing resumes. If you do not stop the service, the update processing is canceled.

3. Execute the `jpccconf inst setup` command with the service key that indicates PFM - RM for Platform and the instance name specified.

For example, to update an instance environment whose instance name is `inst1`, execute the following command:

```
jpccconf inst setup -key RMPlatform -inst inst1
```

4. Update the instance environment for PFM - RM for Platform.

Enter the applicable items listed in Table 2-29 according to the command's instructions. The current settings are displayed. To not change a displayed value, press the **Enter** key. When all entries have been made, the instance environment is updated.

5. Restart the services for the updated instance environment.

For details about how to start services, see the chapter that describes starting and stopping Performance Management 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*.

2.6.3 Updating a monitoring target

This subsection describes how to update a monitoring target of PFM - RM for Platform while the Performance Management system is running.

(1) In Windows

To update a set monitoring target, you must first check the name of the monitoring target and then update the monitoring target. Use the PFM - RM host to set the monitoring target.

Before you perform this operation, check the information to be updated. The following table lists and describes the information that can be updated.

Table 2-30: Monitoring target settings for PFM - RM for Platform (for Windows)

No.	Item	Description	Permitted value	Default value
1	Target Host	Specifies the resolvable host name where the monitoring target is run. This information is used for collection of performance data and health checking. It is also used as the event host name when JP1/IM or NNM is linked.	From 1 to 32 bytes of alphanumeric characters and the hyphen (-) are permitted. A name beginning with a hyphen (-) is not permitted. The host name must be unique within the instance.	Previous setting
2	User	Specifies the user who connects to the monitored host.	From 1 to 256 bytes of characters are permitted. The following character is not permitted: <ul style="list-style-type: none"> • Tab 	
3	Password	Specifies the password needed to connect to the monitored host. The password is not displayed on the screen. If you set a password, you must enter it twice.	From 1 to 256 bytes of characters are permitted. The following character is not permitted: <ul style="list-style-type: none"> • Tab 	
4	Domain	Specifies the domain name to which the monitored host belongs. <ul style="list-style-type: none"> • If the host belongs to a workgroup, specify nothing. 	From 0 to 256 bytes of characters are permitted. The following character is not permitted: <ul style="list-style-type: none"> • Tab 	

To check the name of a monitoring target, use the `jpccconf target list` command. To check the settings for a monitoring target, use the `jpccconf target display` command. To update a monitoring target, use the `jpccconf target setup` command.

Reference note:

There is no need to stop services of PFM - RM for Platform while you are updating a monitoring target.

To update multiple monitoring targets, repeat the procedure described below.

To update a monitoring target:

1. To check the name of the monitoring target, execute the `jpccconf target list`

command with the service key that indicates PFM - RM for Platform and the instance name specified:

```
jpccconf target list -key RMPlatform -inst inst1
Targets:
targethost1
targethost2
Groups:
All
```

2. To check the settings for the monitoring target, execute the `jpccconf target display` command with the service key that indicates PFM - RM for Platform, the instance name, and the monitoring target name specified.

For example, if you want to check the settings for the monitoring target whose name is `targethost1`, execute the following command:

```
jpccconf target display -key RMPlatform -inst inst1 -target targethost1
```

3. Execute the `jpccconf target setup` command with the service key that indicates PFM - RM for Platform, the instance name, and the monitoring target name specified.

For example, if you want to update the monitoring target whose name is `targethost1`, execute the following command:

```
jpccconf target setup -key RMPlatform -inst inst1 -target targethost1
```

4. To update the PFM - RM for Platform monitoring target, enter the applicable items listed in Table 2-30 according to the command's instructions.

The current settings are displayed. To not change a displayed value, press the **Enter** key. When all entries have been made, the monitoring target is updated.

For details about the commands, see the chapter that describes commands in the manual *Job Management Partner 1/Performance Management Reference*.

(2) In UNIX

To update a set monitoring target, you must first check the name of the monitoring target and then update the monitoring target. Use the PFM - RM host to set the monitoring target.

Before you perform this operation, check the information to be updated. The following table lists and describes the information that can be updated.

Table 2-31: Monitoring target settings for PFM - RM for Platform (for UNIX)

No.	Item	Description	Permitted value	Default value
1	Target_Host	Specifies the resolvable host name where the monitoring target is run.	From 1 to 32 bytes of alphanumeric characters and the hyphen (-) are permitted. A name beginning with a hyphen (-) is not permitted. The host name must be unique within the instance.	Previous setting
2	User	Specifies the user who logs on to the monitoring target. PFM - RM for Platform uses this user to log on to the monitored host and perform information collection.	From 1 to 256 bytes of characters are permitted. The following character is not permitted: <ul style="list-style-type: none"> • Tab 	
3	Private_Key_File	Specifies the name of the private key file that is used in the SSH public key method.	From 1 to 256 bytes of characters are permitted. The following character is not permitted: <ul style="list-style-type: none"> • Tab 	
4	Port	Specifies the port number of the SSH server on the monitored host.	From 1 to 65,535	

To check the name of a monitoring target, use the `jpccconf target list` command. To check the settings for a monitoring target, use the `jpccconf target display` command. To update a monitoring target, use the `jpccconf target setup` command.

Reference note:

There is no need to stop services of PFM - RM for Platform while you are updating a monitoring target.

To update multiple monitoring targets, repeat the procedure described below.

To update a monitoring target:

1. To check the name of the monitoring target, execute the `jpccconf target list` command with the service key that indicates PFM - RM for Platform and the instance name specified:

```
jpccconf target list -key RMPlatform -inst inst1
```

Targets:

```
targethost1
targethost2
```

2. Installation and Setup

Groups :
All

2. To check the settings for the monitoring target, execute the `jpccconf target display` command with the service key that indicates PFM - RM for Platform, the instance name, and the monitoring target name specified.

For example, if you want to check the settings for the monitoring target whose name is `targethost1`, execute the following command:

```
jpccconf target display -key RMPlatform -inst inst1 -target targethost1
```

3. Execute the `jpccconf target setup` command with the service key that indicates PFM - RM for Platform, the instance name, and the monitoring target name specified.

For example, if you want to update the monitoring target whose name is `targethost1`, execute the following command:

```
jpccconf target setup -key RMPlatform -inst inst1 -target targethost1
```

4. To update the PFM - RM for Platform monitoring target, enter the applicable items listed in Table 2-31 according to the command's instructions.

The current settings are displayed. To not change a displayed value, press the **Enter** key. When all entries have been made, the monitoring target is updated.

For details about the commands, see the chapter that describes commands in the manual *Job Management Partner 1/Performance Management Reference*.

2.7 Starting the command prompt

When OS user account control functionality (UAC) is enabled in a Windows Server 2008 environment, the command prompt can run under the following two permissions modes:

- Administrator permissions mode (administrator console)

This command prompt can perform all Windows operations.

- Standard permissions mode (standard console)

This command prompt can perform operations possible with user permissions.

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

Make sure that commands provided by Performance Management are executed in the administrator console.

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

Table 2-32: How to start the command prompt for each administrator user

Administrator group	Administrator user	Start method
Administrators	Administrator	When the command prompt is started, the administrator console is also started.
	Any user other than the above	<p>When UAC is enabled</p> <ul style="list-style-type: none"> • When the command prompt is started, the standard console is also started. • When the administrator console is started, the User Account Control dialog box is displayed. Click the Continue button in this dialog box to start the administrator console. If the Cancel button is clicked, the command prompt does not start. <p>When UAC is disabled</p> <ul style="list-style-type: none"> • When the command prompt is started, the administrator console is also started.

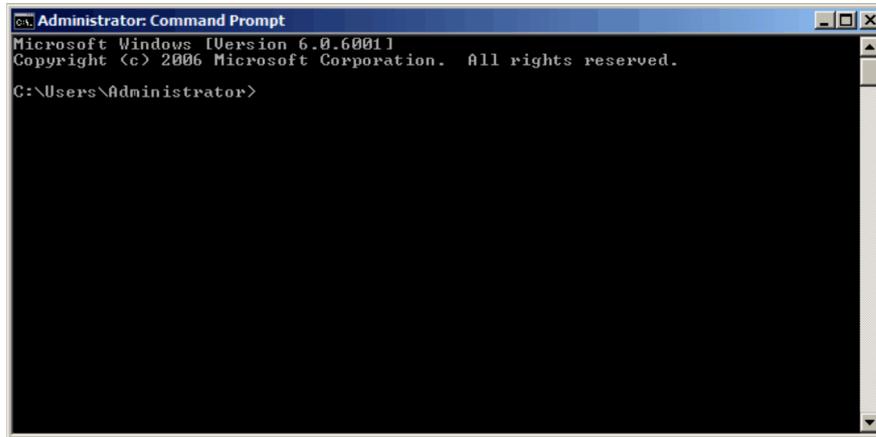
There are two kinds of administrator console: the one provided by the OS, and the one provided by PFM - Base. The following explains how to start each of them.

(1) Starting the administrator console provided by the OS

From the **Start** menu, choose **Programs**, and then **Accessories**, and then right-click **Command prompt**. Then choose **Run as administrator**.

Whether the started command prompt is an administrator console can be determined by whether **Administrator** is displayed in the title bar.

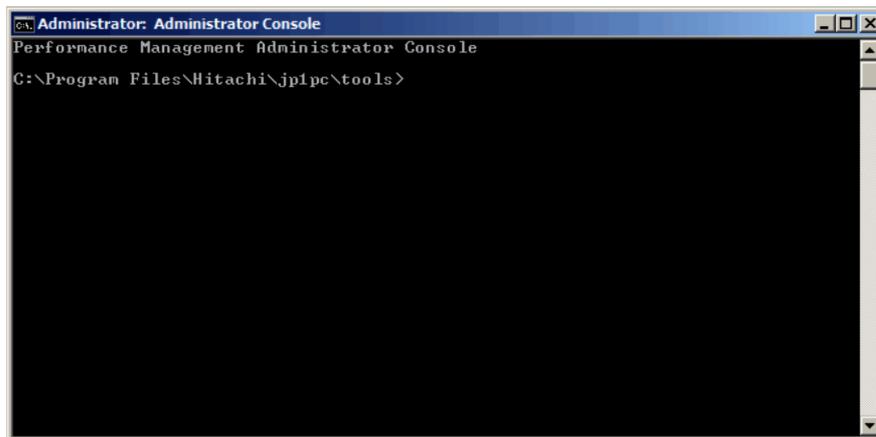
Figure 2-16: Screenshot of the administrator console provided by the OS



(2) Starting the administrator console provided by PFM - Base

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

Figure 2-17: Screenshot of the administrator console provided by PFM - Base



2.8 Backing up and restoring PFM - RM for Platform

This section describes backing up and restoring PFM - RM for Platform.

To provide for recovery of the system in the event of a failure, you should back up the settings for PFM - RM for Platform periodically. You should also back up the settings whenever a change has been made to the system, such as whenever PFM - RM for Platform setup is performed.

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

2.8.1 Backing up

You can use any method to make a backup, such as by copying files. Always perform the backup operation while the services of PFM - RM for Platform are stopped.

(1) Files to be backed up for PFM - RM for Platform (for Windows)

The following table lists the settings files for PFM - RM for Platform that must be backed up.

Table 2-33: Files to be backed up for PFM - RM for Platform (for Windows)

No.	File name	Description
1	<i>PFM-RM-for-Platform-installation-folder</i> ^{#1} \agt7\agent*.ini file	Settings files for the Remote Monitor Collector service
2	<i>PFM-RM-for-Platform-installation-folder</i> ^{#1} \agt7\agent\instance-name ^{#2} *.ini file	
3	<i>PFM-RM-for-Platform-installation-folder</i> ^{#1} \agt7\agent\instance-name ^{#2} \groups*.ini file	
4	<i>PFM-RM-for-Platform-installation-folder</i> ^{#1} \agt7\agent\instance-name ^{#2} \targets*.ini file	
5	<i>PFM-RM-for-Platform-installation-folder</i> ^{#1} \agt7\store*.ini file	Settings files for the Remote Monitor Store service
6	<i>PFM-RM-for-Platform-installation-folder</i> ^{#1} \agt7\store\instance-name ^{#2} *.ini file	

#1

If you use a logical host for operation, replace

PFM-RM-for-Platform-installation-folder with *environment-folder\jplpc*. An environment folder is a folder on the shared disk that is specified when the local host is created.

#2

These are folders used for operation in an instance environment. In the case of an instance configuration, as many folders as there are instances are created.

Note:

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

(2) Files to be backed up for PFM - RM for Platform (for UNIX)

The following table lists the settings files for PFM - RM for Platform that must be backed up.

Table 2-34: Files to be backed up for PFM - RM for Platform (for UNIX)

No.	File name	Description
1	<i>/opt</i> ^{#1} / <i>jplpc/agt7/agent/*</i> .ini file	Settings files for the Remote Monitor Collector service
2	<i>/opt</i> ^{#1} / <i>jplpc/agt7/agent/instance-name</i> ^{#2} / <i>*</i> .ini file	
3	<i>/opt</i> ^{#1} / <i>jplpc/agt7/agent/instance-name</i> ^{#2} / <i>groups/*</i> .ini file	
4	<i>/opt</i> ^{#1} / <i>jplpc/agt7/agent/instance-name</i> ^{#2} / <i>targets/*</i> .ini file	
5	<i>/opt</i> ^{#1} / <i>jplpc/agt7/store/*</i> .ini file ^{#2}	Settings files for the Remote Monitor Store service
6	<i>/opt</i> ^{#1} / <i>jplpc/agt7/store/instance-name</i> ^{#2} / <i>*</i> .ini file	

#1

If you use a *logical* host for operation, replace *opt* with *environment-directory*. An environment directory is a directory on the shared disk that is specified when the logical host is created.

#2

These are directories used for operation in an instance environment. In the case of an instance configuration, as many directories as there are instances are created.

Note:

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

2.8.2 Restoring

To restore PFM - RM for Platform settings, 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 backup settings files.

Prerequisites

- PFM - RM for Platform has already been installed.
- All services of PFM - RM for Platform have stopped.

Note:

To restore settings for PFM - RM for Platform, the product version numbers must match between the environment from which the backup was made and the environment into which the backup is restored. For details about the product version numbers, see the Release Notes.

2.9 Settings for using a Web browser to reference manuals

You can use a Web browser to reference the Performance Management manuals. To do this, you must copy the manuals from the manuals CD-ROM provided with the program product to the host where PFM - Web Console is installed.

If you are running PFM - Web Console in a cluster environment, copy the manuals onto the physical hosts of both the executing and the standby systems.

2.9.1 Setup for referencing manuals

This subsection describes the setup that enables you to reference manuals from Help of PFM - Web Console or from your computer's hard disk.

(1) Referencing manuals from Help of PFM - Web Console

To reference manuals from Help of PFM - Web Console:

1. Register PFM - RM in PFM - Web Console according to the PFM - Web Console setup procedure.

Perform additional setup of PFM - RM.

2. On the host where PFM - Web Console is installed, create a directory for the copies of manuals.

The following shows the directory to be created:

In Windows

PFM-Web-Console-installation-folder\doc\en\Help-ID-of-PFM-RM-for-Platform

In UNIX

/opt/jp1pcwebcon/doc/en/Help-ID-of-PFM-RM-for-Platform

For details about the help ID of PFM - RM for Platform, see *B. List of Identifiers*.

3. From the manuals CD-ROM, copy the files and directories under the directory that was created in step 2.

The following shows the files and directories to be copied:

For HTML manuals

In Windows

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

In UNIX

All `.htm` files and `FIGURE` directories under `/CD-ROM-mount-point/MAN/3020/manual-number` (such as `03004A0D`)

For PDF manuals**In Windows**

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

In UNIX

PDF files under `/CD-ROM-mount-point/MAN/3020/manual-number` (such as `03004A0D`)

Directly under the created directory, place `index.htm` for the HTML manuals and the PDF files themselves for the PDF manuals.

For details about how to copy manual files, see `readme.txt` on the manuals CD-ROM.

4. Restart PFM - Web Console.

(2) Referencing manuals from your computer's hard disk

Use one of the following methods to reference manuals from your computer's hard disk:

- Use `setup.exe` on the CD-ROM to install the manuals
- Copy the `HTM`, `PDF`, and `GIF` files directly into a desired directory

When you reference HTML manuals, use the following directory structure:

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

2.9.2 How to view manuals

To view a manual:

1. In the Main window of PFM - Web Console, click the **Help** menu in the menu bar frame.

The Help window appears.

2. Click a manual name or the **PDF** link that follows a manual name.
Clicking a manual name displays the HTML version of that manual.
Clicking a **PDF** link displays that manual in PDF format.

Notes about displaying manuals in a Web browser

In Windows, if you display an online manual from the **Start** menu, the HTML manual may be displayed in the Web browser that is already open.

Chapter

3. Operation in a Cluster System

This chapter describes the installation and setup of PFM - RM for Platform in a cluster system and the operating procedures when PFM - RM for Platform is run in a cluster system.

- 3.1 Overview of cluster systems
- 3.2 Configuration of PFM - RM for Platform in a cluster system
- 3.3 Processing when a failover occurs
- 3.4 Installation and setup in a cluster system (in Windows)
- 3.5 Installation and setup in a cluster system (in UNIX)
- 3.6 Uninstallation and unsetup in a cluster system (in Windows)
- 3.7 Uninstallation and unsetup in a cluster system (in UNIX)
- 3.8 Changing the PFM - RM for Platform system configuration
- 3.9 Changing the PFM - RM for Platform operation method in a cluster system

3.1 Overview of cluster systems

A cluster system links multiple server systems so that they can be run collectively as a single system.

PFM - RM for Platform can be run in the following type of cluster system:

- PFM - RM for Platform with a High Availability (HA) cluster system configuration

This section describes the configuration in which PFM - RM for Platform is run in a cluster system. For an overview of cluster systems and details about the system configuration for running the Performance Management system 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 User's Guide*.

In this chapter, the term *cluster system* refers to an *HA cluster system*.

3.2 Configuration of PFM - RM for Platform in a cluster system

If you run PFM - RM for Platform in a cluster system, you can improve availability because the system operation can be maintained by failover in the event of a problem.

To run PFM - RM for Platform in a cluster system, you must configure an environment in which the same instance of PFM - RM for Platform can be run in both the executing node and the standby node. Also you must store all data, such as data files, configuration files, and log files, on a shared disk.

When PFM - RM for Platform is run in a cluster system, it is configured as shown below.

Figure 3-1: Example of the configuration of PFM - RM for Platform in a cluster system (when PFM - RM for Platform is installed on the PFM - Manager host)

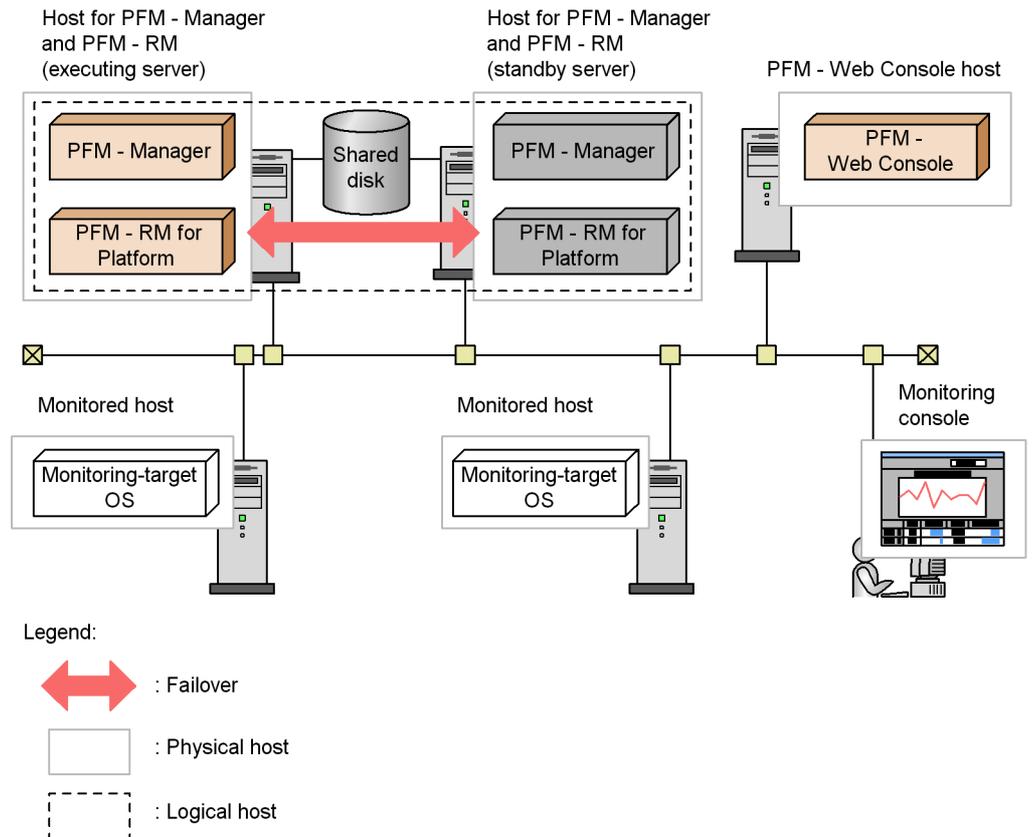
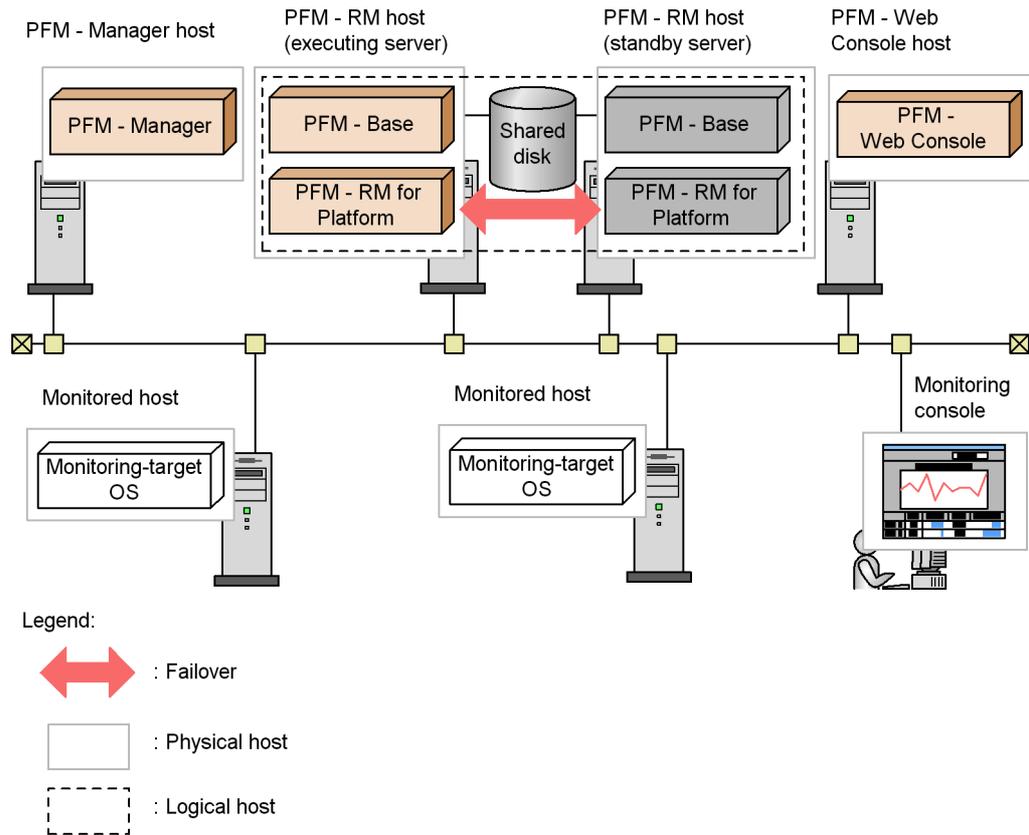


Figure 3-2: Example of the configuration of PFM - RM for Platform in a cluster system (when PFM - RM for Platform is installed on a different host from the PFM - Manager host)



PFM - RM for Platform in a cluster system runs in a logical host environment and monitors other hosts as monitoring targets. Therefore, you must configure the system in such a manner that the same host names can be used to connect to the monitored hosts from each host.

PFM - RM for Platform stores necessary information on the shared disk, such as definition and performance information, and inherits this information in the event of a failover. If a single logical host contains multiple Performance Management programs, all of them use the same shared directory.

You can run multiple PFM - RM for Platforms at the same node. If there are multiple cluster configurations (active-active configuration), run PFM - RM for Platform in each logical host environment. You can operate each PFM - RM for Platform independently and have them perform failover separately.

3.3 Processing when a failover occurs

If a failure occurs on the executing node, control shifts to the standby node.

This section describes the failover processing when a failure occurs in PFM - RM for Platform. It also describes the effects of a PFM - Manager failure on PFM - RM for Platform.

3.3.1 Failover when an error occurs at the PFM - RM host

The following figure shows the processing when failover occurs at the host PFM - RM host.

Figure 3-3: Processing when failover occurs at the PFM - RM host (when PFM - RM for Platform is installed on the PFM - Manager host)

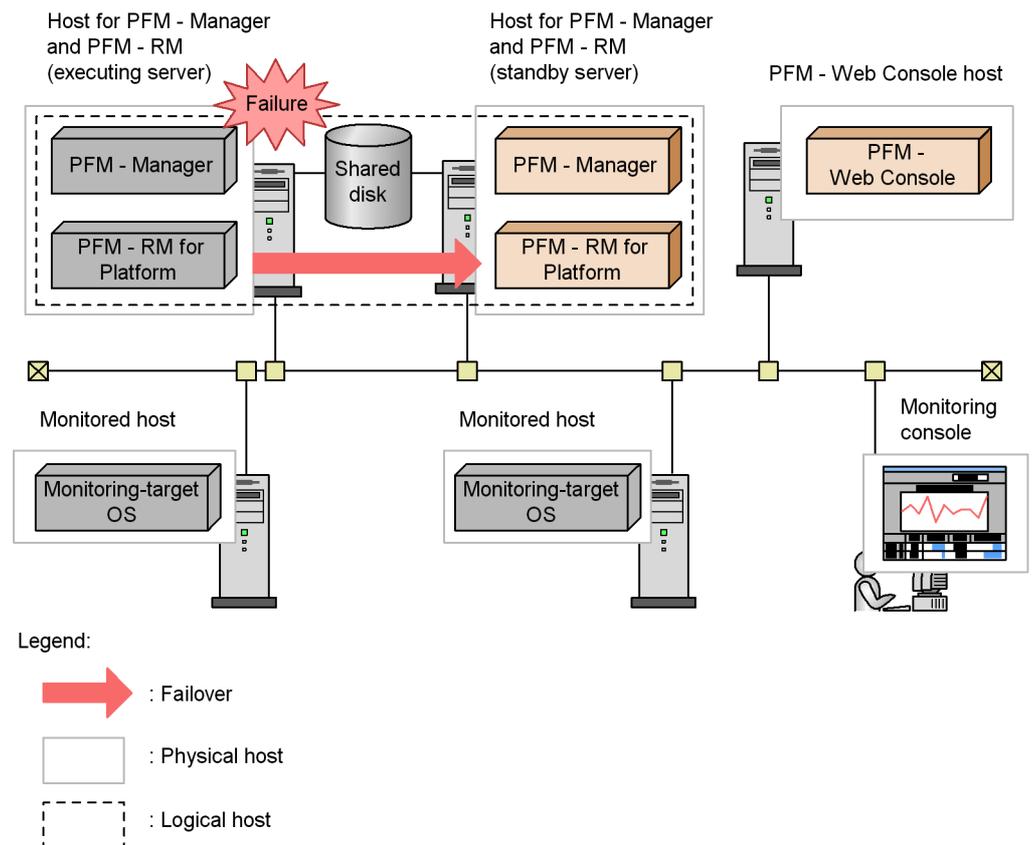
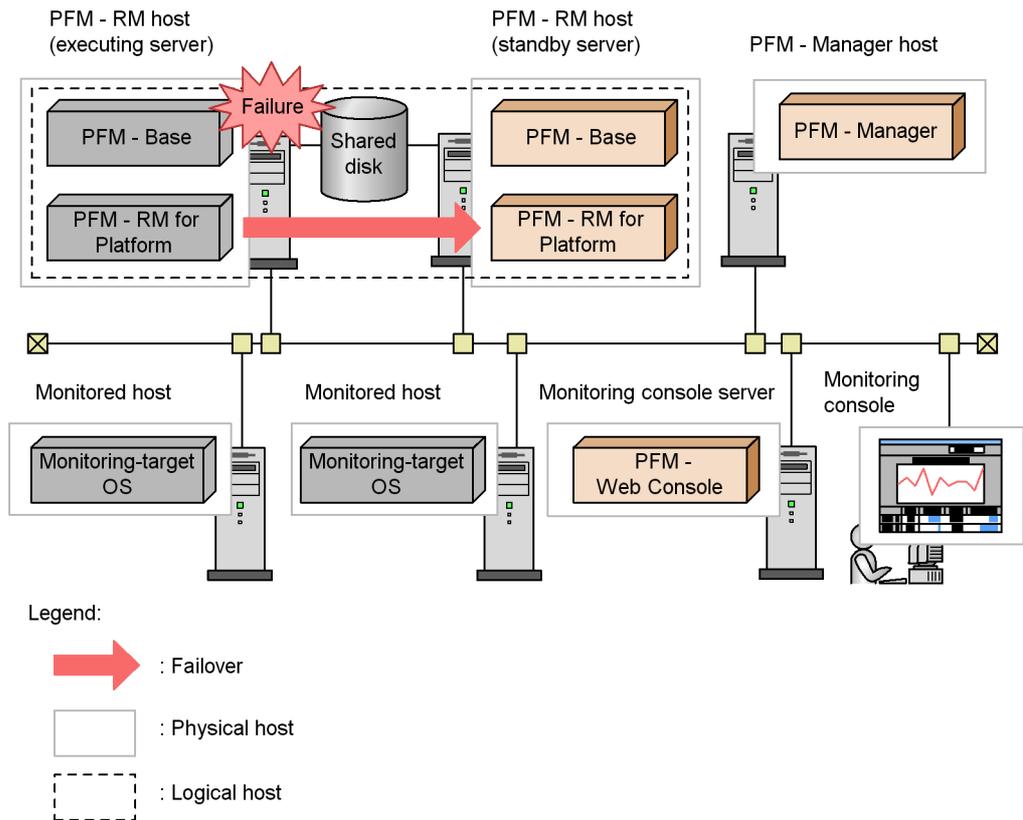


Figure 3-4: Processing when failover occurs at the PFM - RM host (when PFM - RM for Platform is installed on a different host from the PFM - Manager host)



If PFM - Web Console is used while PFM - RM for Platform is engaged in failover processing, the message `There was no answer (-6)` is displayed. If this message is displayed, wait until failover processing is completed.

Once failover is completed at PFM - RM for Platform, an attempt to use PFM - Web Console connects you to the PFM - RM for Platform that has started at the target node, so that you can perform operations.

3.3.2 Effects of a PFM - Manager failure

A shutdown of PFM - Manager has effects on the entire Performance Management system.

PFM - Manager provides centralized management of the agent information for PFM - RM for Platform that is running at each node. It also controls alarm event notifications when thresholds are exceeded during performance monitoring by PFM - RM for

Platform as well as execution of actions based on alarm events.

The following describes the effects of a PFM - Manager shutdown on PFM - RM for Platform.

Effects

If PFM - Manager shuts down while PFM - RM for Platform is running, the effects described below result. Note that collection of performance data continues.

- Because alarm events cannot be reported to PFM - Manager, alarm events are retained for each alarm definition. PFM - RM for Platform retries notification until PFM - Manager starts. When the number of retained alarm events exceeds 3, the oldest alarm event is overwritten. If PFM - RM for Platform is shut down, the retained alarm events are deleted.
- Any notification of alarm status already sent to PFM - Manager is reset when PFM - Manager restarts. The alarm status is refreshed after PFM - Manager has checked the status of PFM - RM for Platform.
- Shutting down PFM - RM for Platform takes a while because no notification of this event can be sent to PFM - Manager.

Action

Start PFM - Manager. An active PFM - RM for Platform can continue its operation. However, alarms may not be notified as expected.

After PFM - Manager has been recovered, check the common message log for the KAVE00024-I message.

Evaluate the operation method, taking into account the effects of PFM - Manager shutdown. In addition to problems, events such as configuration change and maintenance may require shutdown of PFM - Manager. We recommend that you ensure that shutdowns for maintenance purposes be performed only when the shutdown will have the least adverse effects on operations.

3.4 Installation and setup in a cluster system (in Windows)

This section describes the procedures for installing and setting up PFM - RM for Platform in a cluster system.

For details about how to install and set up PFM - Manager, see the chapter that describes configuration and operation of cluster systems in the *Job Management Partner 1/Performance Management User's Guide*.

3.4.1 Before installing in a cluster system (for Windows)

This subsection describes items to be checked before you start installation of PFM - RM for Platform.

(1) Prerequisites

Following are the prerequisites for using PFM - RM for Platform in a cluster system.

(a) 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 - RM for Platform that is running on the logical host.

Note:

- Failover may fail if a message box for an application error is displayed in the Dr. Watson log. To protect against this possibility, error notification using this message box needs to be suppressed. For details about the suppression procedure, see the OS documentation. Note that suppression of error notification may have some effects on information acquisition in the event of application errors.
- In Windows Server 2003, a dialog box reporting an error to Microsoft is displayed in the event of an application error. Because this dialog box may cause failover to fail, this error reporting needs to be suppressed. For details about the suppression procedure, see the OS documentation.

(b) 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 to each node physically by Fibre Channel or SCSI.^{#1}

- The shared disk can be placed offline forcibly by means such as the cluster software in order to implement failover even when there is still an active process that is using the shared disk.
- If multiple PFM products are running on the same logical host, the shared disk uses the same directory names.^{#2}

#1

Performance Management does not support a configuration that uses a network drive or a disk replicated via the network as the shared disk.

#2

You can change the storage location of the Store database and store it in a different folder on the shared disk.

(c) 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 that 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 employed, 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 within the system.

Note:

- Do not specify a physical host name (host name displayed by the `hostname` command) as a logical host name. If you do so, normal communication processing may not occur.
- A logical host name is expressed using from 1 to 32 bytes of alphanumeric characters. None of the following symbols nor the space character can be used:

`/ \ : ; * ? ' " < > | & = , .`

- You cannot specify a logical host name that begins with the character string `localhost`, an IP address, or a hyphen (-).

(d) WMI connection

Make sure that the following conditions are satisfied:

- The same user account that can connect to the monitored hosts by using WMI is available in the environments for both the executing node and the standby node.

For details about the WMI connection settings, see *2.1.5 WMI connection setting method*.

(2) Information needed for setting up PFM - RM for Platform for logical host operation

If you run PFM - RM for Platform on a logical host, you need the information listed in the table below in addition to the environment information that is needed for setting up a normal PFM - RM for Platform.

Table 3-1: Information needed for setting up PFM - RM for Platform for logical host operation

No.	Item	Example
1	Logical host name	jp1-halrmp
2	Logical IP address	172.16.92.100
3	Shared disk	S:\jp1

If multiple Performance Management programs are running on the same logical host, all of them must use folders on the same shared disk.

For details about the space requirements on the shared disk, see *A. Estimating System Requirements*.

(3) Notes about logical host failover

If you employ a system configuration in which PFM - RM for Platform runs on a logical host, evaluate whether the entire logical host should failover in the event of a PFM - RM for Platform failure.

If a PFM - RM for Platform failure is to result in failover of the entire logical host, any other job application that is running on the logical host will also result in failover, which may affect the job adversely.

Typically, we recommend that you use one of the following cluster software settings so that errors on PFM - RM for Platform do not affect the operation of other applications:

- Operation of PFM - RM for Platform is not monitored.
- Detection of PFM - RM for Platform errors does not result in failover.

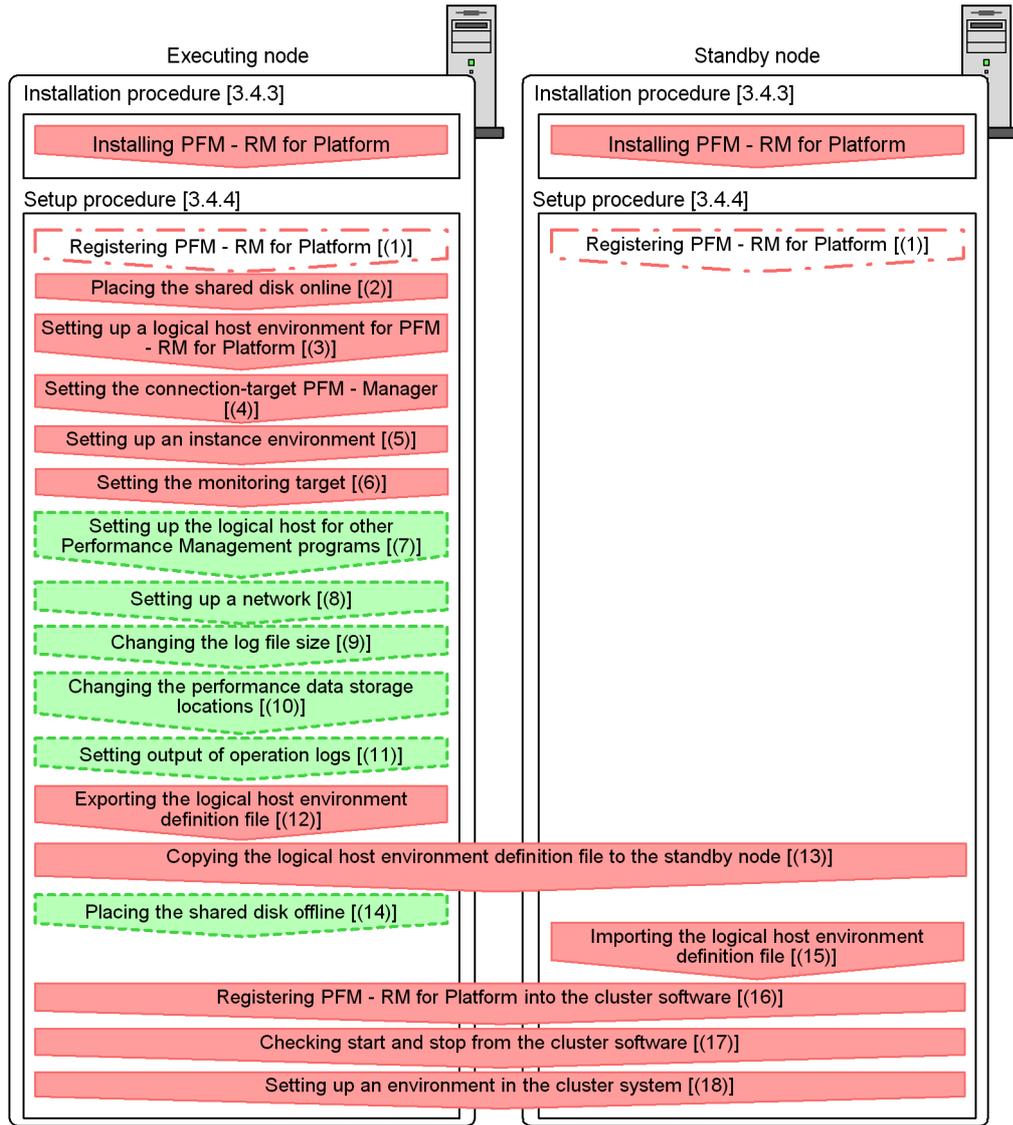
(4) Notes about upgrading when logical operation is used

To upgrade a PFM - RM for Platform that is running on a logical host, you must place the shared disk online at either the executing node or the standby node.

3.4.2 Installation and setup procedure in a cluster system (for Windows)

The following figure shows the procedures for installing and setting up PFM - RM for Platform in a cluster system.

Figure 3-5: Installation and setup procedures in a cluster system (for Windows)



Legend:

- : Required setup item
- : Optional setup item
- : Setup item that is required depending on the situation
- [] : Reference

Note

Setting up a PFM - RM in a logical host environment does not inherit the existing

PFM - RM definition in the physical host environment. A new environment is created when an instance environment is set up in the logical and physical host environments.

3.4.3 Installation procedure in a cluster system (for Windows)

Install PFM - Base and PFM - RM for Platform on both the executing node and the standby node.

Note:

The installation target is the local disk. Do not install PFM - RM for Platform on a shared disk.

The installation procedure is the same as for non-cluster systems. For details about the installation procedure, see *2.1.3 Installation procedure (for Windows)*.

3.4.4 Setup procedure in a cluster system (for Windows)

This subsection describes the setup needed for running Performance Management in a cluster system.

To run Performance Management in a cluster system, you must set up both the executing node and the standby node. Set up the executing node first, and then set up the standby node.

 indicates an item that is to be executed at the executing node, and  indicates an item that is to be executed at the standby node.  indicates the following setup items:

- Setup item that is required depending on the environment in use
- Setup item for changing the default settings

Note:

Do not set JPC_HOSTNAME as an environment variable because it is used by Performance Management. If it is set as an environment variable by mistake, Performance Management will not function correctly.

(1) Registering PFM - RM for Platform

To achieve central management of PFM - RM for Platform in the Performance Management system, you must register PFM - RM for Platform into PFM - Manager and PFM - Web Console.

You must register PFM - RM for Platform at the following times:

- When you add a new PFM - RM for Platform in the Performance Management system.
- When you update the Data model version for the registered PFM - RM for Platform.

You use PFM - Manager and PFM - Web Console to register PFM - RM for Platform. The registration procedure is the same as when a cluster system is not used. For details about the procedure, see *2.1.4(1) Registering PFM - RM for Platform*.

(2) Placing the shared disk online Executing system

Make sure that the shared disk is online.

If the shared disk is not in online status, use a program such as the cluster software or a volume manager to place it online.

(3) Setting up a logical host environment for PFM - RM for Platform Executing system

Execute the `jpccconf ha setup` 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.

Note

Before you execute the command, stop all Performance Management programs and services 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*.

To set up a logical host environment for PFM - RM for Platform:

1. Execute the `jpccconf ha setup` command to create a logical host environment for PFM - RM for Platform.

Execute the following command:

```
jpccconf ha setup -key RMPlatform -lhost jp1-halrmp -d S:\jp1
```

Use the `-lhost` option to specify the logical host name. This example specifies `jp1-halrmp` as the logical host name. If you employ DNS operations, specify the logical host name without the domain name.

Specify in the `-d` option a folder name on the shared disk within the environment folder. For example, if `-d S:\jp1` is specified, `S:\jp1\jp1pc` is created, and then files for the logical host environment are created.

- Execute the `jpccconf ha list` command to check the logical host settings.

Execute the following command:

```
jpccconf ha list -key all
```

Make sure that the created logical host environment is correct.

(4) **Setting the connection-target PFM - Manager** Executing system

Execute the `jpccconf mgrhost define` command to set the PFM - Manager that manages PFM - RM for Platform.

To set the connection-target PFM - Manager:

- Execute the `jpccconf mgrhost define` command to set the connection-target PFM - Manager.

Execute the following command:

```
jpccconf mgrhost define -host jp1-hal -lhost jp1-halrmp
```

Specify in the `-host` option the host name of the connection-target PFM - Manager. If the connection-target PFM - Manager is to run on a logical host, specify in the `-host` option the logical host name of the connection-target PFM - Manager. This example specifies `jp1-hal` as the PFM - Manager's logical host name.

Use the `-lhost` option to specify the logical host name of PFM - RM for Platform. This example specifies `jp1-halrmp` as the logical host name of PFM - RM for Platform.

(5) **Setting up an instance environment** Executing system

Execute the `jpccconf inst setup` command to set up an instance environment for PFM - RM for Platform.

The setup procedure is the same as when a cluster system is not employed. However, in the case of a cluster system, you must specify the logical host name in the `-lhost` option when you execute the `jpccconf inst setup` command.

The following shows how to specify the `jpccconf inst setup` command for a cluster system:

```
jpccconf inst setup -key RMPlatform -lhost logical-host-name -inst instance-name
```

For details about the settings and procedure, see *2.1.4(2) Setting up an instance environment*.

(6) Setting the monitoring target 

Execute the `jpccconf target setup` command to set information about the monitored host for PFM - RM for Platform.

The setting procedure is the same as when a cluster system is not employed.

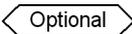
However, in the case of a cluster system, you must specify the logical host name in the `-lhost` option when you execute the `jpccconf target setup` command.

The following shows how to specify the `jpccconf target setup` command for a cluster system:

```
jpccconf target setup -key RMPlatform -lhost logical-host-name -inst instance-name -target monitoring-target-name
```

For details about the settings and procedure, see 2.1.4(3) *Setting the monitored host*.

(7) Setting up the logical host for other Performance Management

programs  

If you have other PFM - Manager, PFM - Agent, or PFM - RM programs to be set up on the same logical host in addition to PFM - RM for Platform, set them up at this stage.

For details about the setup procedure, see the chapter that describes the configuration and operation of cluster systems in the *Job Management Partner 1/Performance Management User's Guide*.

(8) Setting up a network  

You specify network settings if you need to change the network environment settings as appropriate to the network configuration where Performance Management is used.

The two network environment settings are described below. Change these settings if necessary.

- Setting IP addresses

Set this information to use Performance Management in a network that is connected to multiple LANs. To specify an IP address to be used, directly edit the contents of the `jpchosts` file.

Copy the edited `jpchosts` file from the executing node to the standby node under `physical-host-installation-folder\jp1pc\`.

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*.

- Setting port numbers

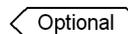
If you establish communication between Performance Management programs via a firewall, use the `jpccconf port` command to set the port numbers.

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* and the chapter that describes configuration and operation of cluster systems in the *Job Management Partner 1/Performance Management User's Guide*.

(9) Changing the log file size  

The operation status of Performance Management is output to a log file unique to Performance Management. This log file is called the *common message log*. The common message log consists of two files with a default size of 2,048 kilobytes each. If necessary, use this setting 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*.

(10) Changing the performance data storage locations  

This setting is used to change the storage locations, backup folder, export folder, or import folder for the performance data that is managed by PFM - RM for Platform.

For details about the setting method, see 2.6.1 *Changing performance data storage locations*.

(11) Action log output setting  

This setting is required in order to output action logs in the event of an alarm.

An action log consists of log information about exceeded threshold values caused by factors such as system loading; its output is linked with the alarm function. For details about the setting method, see *I. Outputting Action Log Data*.

(12) Exporting the logical host environment definition file 

After you have created a logical host environment for PFM - RM for Platform, export the environment definition to a file.

This export process involves output of the definition information for the Performance Management program that has been set up on the logical host to a file in the batch mode. If you are setting up other Performance Management programs on the same logical host, export the environment definition after all the setup processes are completed.

To export the logical host environment definition:

1. Execute the `jpccconf ha export` command to export the logical host environment definition.

Output the definition information for the logical host environment that has been created so far 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
```

(13) Copying the logical host environment definition file to the standby

node Executing system Standby system

Copy from the executing node to the standby node the logical host environment definition file exported in (12) *Exporting the logical host environment definition file*.

(14) Placing the shared disk offline Executing system Optional

Use a program such as the cluster software or a volume manager to place the shared disk offline and finish the procedure.

If you will be using the shared disk after you complete this procedure, there is no need to place it offline.

(15) Importing the logical host environment definition file Standby system

Import to the standby node the export file that was copied from the executing node.

Use the `jpccconf ha import` command to specify settings for executing at the standby node the Performance Management program on the logical host that was created at the executing node. If multiple Performance Management programs have been set up on the same logical host, the settings for all the programs are imported in the batch mode.

When you execute this command, there is no need to keep the shared disk in online status.

To import the logical host environment definition file:

1. Execute the `jpccconf ha import` command to import the logical host environment definition.

Execute the following command:

```
jpccconf ha import -f lhostexp.txt
```

This command changes settings in such a manner that the environment for the standby node becomes the same as for the export file. As a result, the setup for

starting PFM - RM for Platform on the logical host is performed.

If a fixed port number has been set by the `jpccconf port` command during the setup, it is also set in the same manner.

- Execute the `jpccconf ha list` command to check the logical host settings.

Execute the following command:

```
jpccconf ha list -key all
```

Make sure that the displayed information is the same as when the `jpccconf ha list` command is executed at the executing node.

(16) Registering PFM - RM for Platform into the cluster software Executing system Standby system

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 is started and terminated from the cluster software.

For details about how to register PFM - RM for Platform into the cluster software, see the cluster software documentation.

This subsection describes the settings for registering PFM - RM for Platform into the cluster software using an example of items that are registered into Windows MSCS.

For PFM - RM for Platform, register into the cluster software the distributed transaction coordinator (MSDTC) resources and the services shown in the table below.

Table 3-2: PFM - RM for Platform services to be registered into the cluster software

No.	Name	Service name	Resource dependencies
1	PFM - RM Store for Platform <i>instance-name</i> [<i>LHOST</i>]	JP1PCAGT_7S_ <i>instance-name</i> [<i>LHOST</i>]	<ul style="list-style-type: none"> IP address resources Physical disk resources
2	PFM - RM for Platform <i>instance-name</i> [<i>LHOST</i>]	JP1PCAGT_7A_ <i>instance-name</i> [<i>LHOST</i>]	<ul style="list-style-type: none"> Cluster resources in No. 1 Distributed transaction coordinator (MSDTC) resources
3	PFM - Action Handler [<i>LHOST</i>]	JP1PCMGR_PH [<i>LHOST</i>]	<ul style="list-style-type: none"> IP address resources Physical disk resources

Replace [*LHOST*] with the logical host name. If the instance name is SDC1 and the logical host name is `jp1-halrmp`, then the name of the service is PFM - RM Store for Platform SDC1 [`jp1-halrmp`], and the service name is JP1PCAGT_7S_SDC1 [`jp1-halrmp`].

For details about how to set the distributed transaction coordinator (MSDTC) resources, see the technical support information on the Microsoft home page.

In the case of MSCS, register these services as MSCS resources. Set each resource as follows:

- In **Resource type**, register as **Generic Service**.
- Set **Name**, **Resource Dependencies**, and **Service name** as shown in Table 3-2.
- Do not set **Start parameters** or **Registry Replication**.
- On the **Advanced** page in **Properties**, specify the settings according to whether you want a failover 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 - RM for Platform failure:

- **Restart**: Selected
- **Apply to group**: Cleared
- **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. Therefore, set **Startup type** to **Manual** so that the service will not be started automatically during OS startup. Immediately after the setup is performed by the `jpccconf ha setup` command, the service is set to **Manual**.

Make sure that you do not use the following command to forcibly stop services:
`jpccspm stop -key all -lhost logical-host-name -kill immediate`

(17) Checking start and stop from the cluster software

Executing system

Standby system

Make sure that the Performance Management programs function normally by starting and terminating the programs from the cluster software at each node.

(18) Setting up an environment in the cluster system

Executing system

Standby system

After 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 the monitoring target's operation status as a report according to the operating procedures and can send notifications to the user in the event of problems at the monitoring target.

For details about how to set up an environment for the Performance Management programs, see the chapter that describes the configuration and operation of cluster systems in the *Job Management Partner 1/Performance Management User's Guide*.

3.4.5 WMI connection setting method in a cluster system

For details about how to set WMI connection, see 2.1.1(5) *Environment settings required for collecting performance data (for Windows)* and 2.1.5 *WMI connection setting method*.

3.5 Installation and setup in a cluster system (in UNIX)

This section describes the procedures for installing and setting up PFM - RM for Platform in a cluster system.

For details about how to install and set up PFM - Manager, see the chapter that describes configuration and operation of cluster systems in the *Job Management Partner 1/Performance Management User's Guide*.

3.5.1 Before installing in a cluster system (for UNIX)

This subsection describes items to be checked before you start installation of PFM - RM for Platform.

(1) Prerequisites

Following are the prerequisites for using PFM - RM for Platform in a cluster system.

(a) 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 - RM for Platform that is running on the logical host.

(b) 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 to each node physically by Fibre Channel or SCSI.^{#1}
- The shared disk can be placed offline forcibly by means such as the cluster software in order to implement failover even when there is still an active process that is using the shared disk.
- If multiple PFM products are running on the same logical host, the shared disk uses the same directory names.^{#2}

#1

Performance Management does not support a configuration that uses a network drive or a disk replicated via the network as the shared disk.

#2

You can change the storage location of the Store database and store it in a different

directory on the shared disk.

(c) 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 that 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 employed, 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 within the system.

Note:

- Do not specify a physical host name (host name displayed by the `uname -n` command) as a logical host name. If you do so, normal communication processing may not occur.
- A logical host name is expressed as 1 to 32 bytes of alphanumeric characters. None of the following symbols nor the space character can be used:
`/ \ : ; * ? ' " < > | & = , .`
- A logical host name cannot begin with `localhost`, an IP address, or the hyphen (-).

(d) SSH connection

Make sure that the following conditions are satisfied:

- A private key with the same path is available in the environments for both the executing node and the standby node.
- That private key can be used to connect to the monitored hosts.

Note

If you use the private key that is created automatically when you install PFM - Remote Monitor for Platform, use one of the following methods to register the private and public keys:

- Copy the private key created at the executing server to the standby server, and then establish its correspondence with the public key that is distributed from the executing server to the monitored host.

- Create public keys at both executing and standby servers, and then establish correspondence between them by registering both public keys at the monitored hosts.

For details about the SSH connection settings, see *2.2.5 SSH connection setting method*.

(2) Information needed for setting up PFM - RM for Platform for logical host operation

If you run PFM - RM for Platform on a logical host, you need the information listed in the table below in addition to the environment information that is needed for setting up a normal PFM - RM for Platform.

Table 3-3: Information needed for setting up PFM - RM for Platform for logical host operation

No.	Item	Example
1	Logical host name	jp1-halrmp
2	Logical IP address	172.16.92.100
3	Shared disk	/jp1

If multiple Performance Management programs are running on the same logical host, all of them must use directories on the same shared disk

For details about the space requirements on the shared disk, see *A. Estimating System Requirements*.

(3) Notes about logical host failover

If you employ a system configuration in which PFM - RM for Platform runs on a logical host, evaluate whether the entire logical host should failover in the event of a PFM - RM for Platform failure.

If a PFM - RM for Platform failure is to result in failover of the entire logical host, any other job application that is running on the logical host will also result in failover, which may affect the job adversely.

Typically, we recommend that you use one of the following cluster software settings so that errors on PFM - RM for Platform do not affect the operation of other applications:

- Operation of PFM - RM for Platform is not monitored.
- Detection of PFM - RM for Platform errors does not result in failover.

(4) Notes about upgrading when logical operation is used

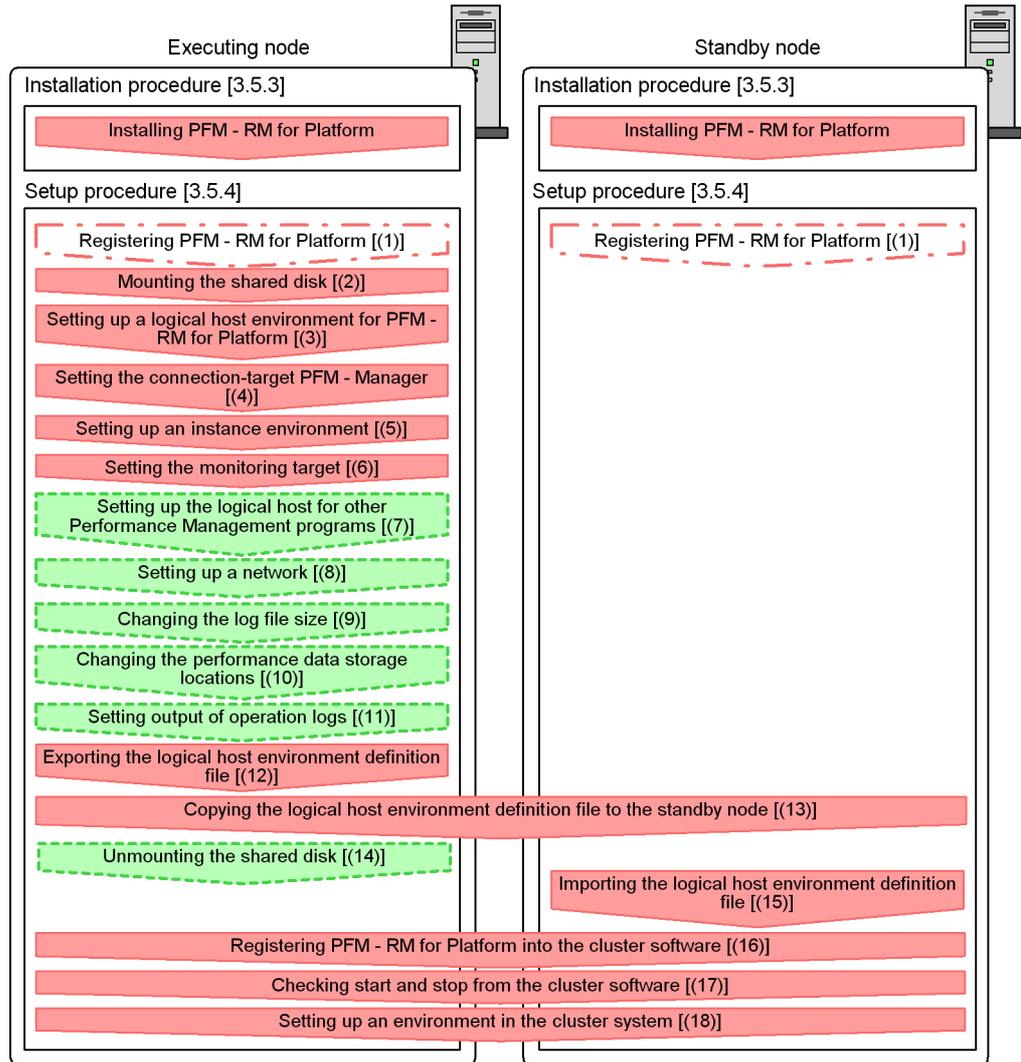
To upgrade a PFM - RM for Platform that is running on a logical host, you must mount

the shared disk at either the executing node or the standby node.

3.5.2 Installation and setup procedure in a cluster system (for UNIX)

The following figure shows the procedures for installing and setting up PFM - RM for Platform in a cluster system.

Figure 3-6: Installation and setup procedures in a cluster system (for UNIX)



- Legend:
- : Required setup item
 - : Setup item that is required depending on the situation
 - : Optional setup item
 - [] : Reference

Note

Setting up a PFM - RM in a logical host environment does not inherit the existing PFM - RM definition in the physical host environment. A new environment is created when an instance environment is set up in the logical and physical host environments.

3.5.3 Installation procedure in a cluster system (for UNIX)

Install PFM - Base and PFM - RM for Platform on both the executing node and the standby node.

The installation procedure is the same as for non-cluster systems. For details about the installation procedure, see *2.2.3 Installation procedure (for UNIX)*.

3.5.4 Setup procedure in a cluster system (for UNIX)

This subsection describes the setup needed for running Performance Management in a cluster system.

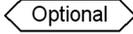
To run Performance Management in a cluster system, you must set up both the executing node and the standby node. Set up the executing node first, and then set up the standby node.

 indicates an item that is to be executed at the executing node, and  indicates an item that is to be executed at the standby node.  indicates the following setup items:

- Setup item that is required depending on the environment in use
- Setup item for changing the default settings

Note:

Do not set `JPC_HOSTNAME` as an environment variable because it is used by Performance Management. If it is set as an environment variable by mistake, Performance Management will not function correctly.

(1) Registering PFM - RM for Platform   

To achieve central management of PFM - RM for Platform in the Performance Management system, you must register PFM - RM for Platform into PFM - Manager and PFM - Web Console.

You must register PFM - RM for Platform at the following times:

- When you add a new PFM - RM for Platform in the Performance Management system.

- When you update the Data model version for the registered PFM - RM for Platform.

You use PFM - Manager and PFM - Web Console to register PFM - RM for Platform. The registration procedure is the same as when a cluster system is not used. For details about the procedure, see *2.2.4(2) Registering PFM - RM for Platform*.

(2) Mounting the shared disk Executing system

Make sure that the shared disk is mounted.

If the shared disk is not mounted, use a program such as the cluster software or a volume manager to mount it.

(3) Setting up a logical host environment for PFM - RM for Platform Executing system

Execute the `jpccconf ha setup` 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.

Note

Before you execute the command, stop all Performance Management programs and services in the entire Performance Management system. For details about how to stop services, see the chapter that describes the startup and termination of Performance Management in the *Job Management Partner 1/Performance Management User's Guide*.

To set up a logical host environment for PFM - RM for Platform:

1. Execute the `jpccconf ha setup` command to create a logical host environment for PFM - RM for Platform.

Execute the following command:

```
jpccconf ha setup -key RMPlatform -lhost jp1-halrmp -d /jp1
```

Use the `-lhost` option to specify the logical host name. This example specifies `jp1-halrmp` as the logical host name. If you employ DNS operations, specify the logical host name without the domain name.

Specify in the `-d` option a directory name on the shared disk within the environment directory. 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` command to check the logical host settings.

Execute the following command:

```
jpccconf ha list -key all
```

Make sure that the created logical host environment is correct.

(4) Setting the connection-target PFM - Manager Executing system

Execute the `jpccconf mgrhost define` command to set the PFM - Manager that manages PFM - RM for Platform.

To set the connection-target PFM - Manager:

1. Execute the `jpccconf mgrhost define` command to set the connection-target PFM - Manager.

Execute the following command:

```
jpccconf mgrhost define -host jp1-hal -lhost jp1-halrmp
```

Specify in the `-host` option the host name of the connection-target PFM - Manager. If the connection-target PFM - Manager is to run on a logical host, specify in the `-host` option the logical host name of the connection-target PFM - Manager. This example specifies `jp1-hal` as the PFM - Manager's logical host name.

Use the `-lhost` option to specify the logical host name of PFM - RM for Platform. This example specifies `jp1-halrmp` as the logical host name of PFM - RM for Platform.

(5) Setting up an instance environment Executing system

Execute the `jpccconf inst setup` command to set up an instance environment for PFM - RM for Platform.

The setup procedure is the same as when a cluster system is not employed. However, in the case of a cluster system, you must specify the logical host name in the `-lhost` option when you execute the `jpccconf inst setup` command.

The following shows how to specify the `jpccconf inst setup` command for a cluster system:

```
jpccconf inst setup -key RMPlatform -lhost logical-host-name -inst instance-name
```

For details about the settings and procedure, see [2.2.4\(3\) Setting up an instance environment](#).

(6) Setting the monitoring target Executing system

Execute the `jpccconf target setup` command to set information about the monitored host for PFM - RM for Platform.

The setting procedure is the same as when a cluster system is not employed.

However, in the case of a cluster system, you must specify the logical host name in the `-lhost` option when you execute the `jpccconf target setup` command.

The following shows how to specify the `jpccconf target setup` command for a cluster system:

```
jpccconf target setup -key RMPlatform -lhost logical-host-name -inst
instance-name -target monitoring-target-name
```

For details about the settings and procedure, see 2.2.4(4) *Setting the monitored host*.

(7) Setting up the logical host for other Performance Management

programs  

If you have other PFM - Manager, PFM - Agent, or PFM - RM programs to be set up on the same logical host in addition to PFM - RM for Platform, set them up at this stage.

For details about the setup procedure, see the chapter that describes the configuration and operation of cluster systems in the *Job Management Partner 1/Performance Management User's Guide*.

(8) Setting up a network

You specify network settings if you need to change the network environment settings as appropriate to the network configuration where Performance Management is used.

The two network environment settings are described below. Change these settings if necessary.

- Setting IP addresses

Set this information to use Performance Management in a network that is connected to multiple LANs. To specify an IP address to be used, directly edit the contents of the `jpchosts` file.

Copy the edited `jpchosts` file from the executing node to the standby node under *physical-host-installation-directory/jp1pc/*.

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*.

- Setting port numbers

If you establish communication between Performance Management programs via a firewall, use the `jpccconf port` command to set the 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* and the chapter that describes configuration and operation of cluster systems in the *Job Management Partner 1/Performance Management User's Guide*.

(9) Changing the log file size  

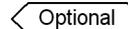
The operation status of Performance Management is output to a log file unique to Performance Management. This log file is called the *common message log*. The common message log consists of two files with a default size of 2,048 kilobytes each. If necessary, use this setting to change this file size.

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

(10) Changing the performance data storage locations  

This setting is used to change the storage locations, backup directory, export directory, or import directory for the performance data that is managed by PFM - RM for Platform

For details about the setting method, see 2.6.1 *Changing performance data storage locations*.

(11) Action log output setting  

This setting is required in order to output action logs in the event of an alarm.

An action log consists of log information about exceeded threshold values caused by factors such as system loading; its output is linked with the alarm function. For details about the setting method, see *I. Outputting Action Log Data*.

(12) Exporting the logical host environment definition file 

After you have created a logical host environment for PFM - RM for Platform, export the environment definition to a file.

This export process involves output of the definition information for the Performance Management program that has been set up on the logical host to a file in the batch mode. If you are setting up other Performance Management programs on the same logical host, export the environment definition after all the setup processes are completed.

To export the logical host environment definition:

1. Execute the `jpccconf ha export` command to export the logical host environment definition.

Output the definition information for the logical host environment that has been created so far 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
```

(13) Copying the logical host environment definition file to the standby

node Executing system Standby system

Copy from the executing node to the standby node the logical host environment definition file exported in (12) *Exporting the logical host environment definition file*.

(14) Unmounting the shared disk Executing system Optional

Unmount the file system and finish the procedure.

If you will be using the shared disk after you complete this procedure, there is no need to unmount the file system.

Note

If the shared disk is unmounted but the specified environment directory contains the `jp1pc` directory and that directory has files under it, the setup is performed without unmounting the shared disk.

In such a case, perform the following procedure:

1. Use the `tar` command to archive the `jp1pc` directory that is located in the specified environment directory on the local disk.
2. Mount the shared disk.
3. If the specified environment directory does not exist on the shared disk, create an environment directory.
4. Expand the `tar` file in the environment directory on the shared disk.
5. Unmount the shared disk.
6. Delete all files and directories under the `jp1pc` directory that is located in the specified environment directory on the local disk.

(15) Importing the logical host environment definition file Standby system

Import to the standby node the export file that was copied from the executing node.

Use the `jpccnf ha import` command to specify settings for executing at the standby node the Performance Management program on the logical host that was created at the executing node. If multiple Performance Management programs have been set up on the same logical host, the settings for all the programs are imported in the batch mode.

When you execute this command, there is no need to keep the shared disk mounted.

To import the logical host environment definition file:

1. Execute the `jpccconf ha import` command to import the logical host environment definition.

Execute the following command:

```
jpccconf ha import -f lhostexp.txt
```

This command changes settings in such a manner that the environment for the standby node becomes the same as for the export file. As a result, the setup for starting PFM - RM for Platform on the logical host is performed.

If a fixed port number has been set by the `jpccconf port` command during the setup, it is also set in the same manner.

2. Execute the `jpccconf ha list` command to check the logical host settings.

Execute the following command:

```
jpccconf ha list -key all
```

Make sure that the displayed information is the same as when the `jpccconf ha list` command is executed at the executing node

(16) Registering PFM - RM for Platform into the cluster software

Executing system

Standby system

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 is started and terminated from the cluster software.

For details about how to register PFM - RM for Platform into the cluster software, see the cluster software documentation.

This subsection describes the settings for registering PFM - RM for Platform into the cluster software.

When applications are registered into the UNIX cluster software, the following four items are typically required: *Start*, *Stop*, *Operation monitoring*, and *Forced stop*.

The following table shows how to set these items in PFM - RM for Platform.

Table 3-4: How to control a PFM - RM for Platform that is registered into the cluster software

No.	Item	Description
1	Start	Execute the following commands in the order shown to start PFM - RM for Platform: <ol style="list-style-type: none"> 1. <code>/opt/jp1pc/tools/jpcspm start -key AH -lhost <i>logical-host-name</i></code> 2. <code>/opt/jp1pc/tools/jpcspm start -key RMPlatform -lhost <i>logical-host-name</i> -inst <i>instance-name</i></code> The time to do this is after the shared disk and logical IP address become available.

No.	Item	Description
2	Stop	<p>Execute the following commands in the order shown to terminate PFM - RM for Platform:</p> <ol style="list-style-type: none"> 1. <code>/opt/jplpc/tools/jpcspm stop -key RMPlatform -lhost <i>logical-host-name</i> -inst <i>instance-name</i></code> 2. <code>/opt/jplpc/tools/jpcspm stop -key AH -lhost <i>logical-host-name</i></code> <p>The time to do this is before the shared disk and logical IP address become unavailable. If the service has stopped for a reason such as a failure, the <code>jpcspm stop</code> command returns a value of 3. In such a case, the processing is treated as a normal termination because the service has stopped.</p> <p>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>
3	Operation monitoring	<p>Execute the <code>ps</code> command to check whether the indicated process is running:</p> <ul style="list-style-type: none"> • <code>ps -ef grep "process-name logical-host-name" grep -v "grep monitoring-target-process"</code> <p>The monitoring-target processes are as follows:</p> <ul style="list-style-type: none"> • <code>jcagt7, agt7/jpcsto, jpcah</code> <p>For details about the process names, see the appendix in the manual <i>Job Management Partner 1/Performance Management Reference</i>.</p> <p>Note that a process may have been stopped temporarily during Performance Management operation for a reason such as the need to perform system maintenance. To prepare for this, we recommend that you provide a method for suppressing operation monitoring (for example, monitoring is not to be performed when the system detects a file that indicates that system maintenance is underway).</p>
4	Forced stop	<p>If forced termination is necessary, execute the following command:</p> <ul style="list-style-type: none"> • <code>/opt/jplpc/tools/jpcspm stop -key all -lhost <i>logical-host-name</i> -kill immediate</code> <p>You can specify only <code>all</code> as the service key in the <code>-key</code> option.</p> <p>Note</p> <p>If you execute this command, all Performance Management processes in the specified logical host environment are terminated forcibly by <code>SIGKILL</code> transmission. In this case, the Performance Management processes are terminated forcibly in units of logical hosts, not services.</p> <p>Specify the settings so that forced termination is used only when processes cannot be terminated by normal termination.</p>

Notes

- The Performance Management programs registered in the cluster are started and terminated by the cluster. Therefore, do not set automatic startup at the time of OS startup.
- If the cluster software uses the return value of a command to determine the execution result, specify the settings so that the return value of the Performance Management commands is converted to a value that can be handled by the cluster software. For details about the return values of Performance Management commands, see each command reference.

- The length of the text that can be displayed by the `ps` command depends on the OS. Set the text so that the total length of the logical host name and the instance name does not exceed 47 characters. If you use the `ps` command to monitor operations, make sure in advance that all logical hosts can be displayed by the `ps` command. Specify the settings so that if the displayed text is not complete, monitoring will apply based on the displayed characters.
- Start the monitored host first and then start PFM - RM for Platform. During termination, terminate PFM - RM for Platform first and then terminate the monitored host.

(17) **Checking start and stop from the cluster software**

Executing system

Standby system

Make sure that the Performance Management programs function normally by starting and terminating the programs from the cluster software at each node.

(18) **Setting up an environment in the cluster system**

Executing system

Standby system

After 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 the monitoring target's operation status as a report according to the operating procedures and can send notifications to the user in the event of problems at the monitoring target.

For details about how to set up an environment for the Performance Management programs, see the chapter that describes the configuration and operation of cluster systems in the *Job Management Partner 1/Performance Management User's Guide*.

3.5.5 SSH connection setting method in a cluster system

For details about how to set SSH connection, see *2.2.1(5) Environment settings required for collecting performance data (for UNIX)* and *2.2.5 SSH connection setting method*.

3.6 Uninstallation and unsetup in a cluster system (in Windows)

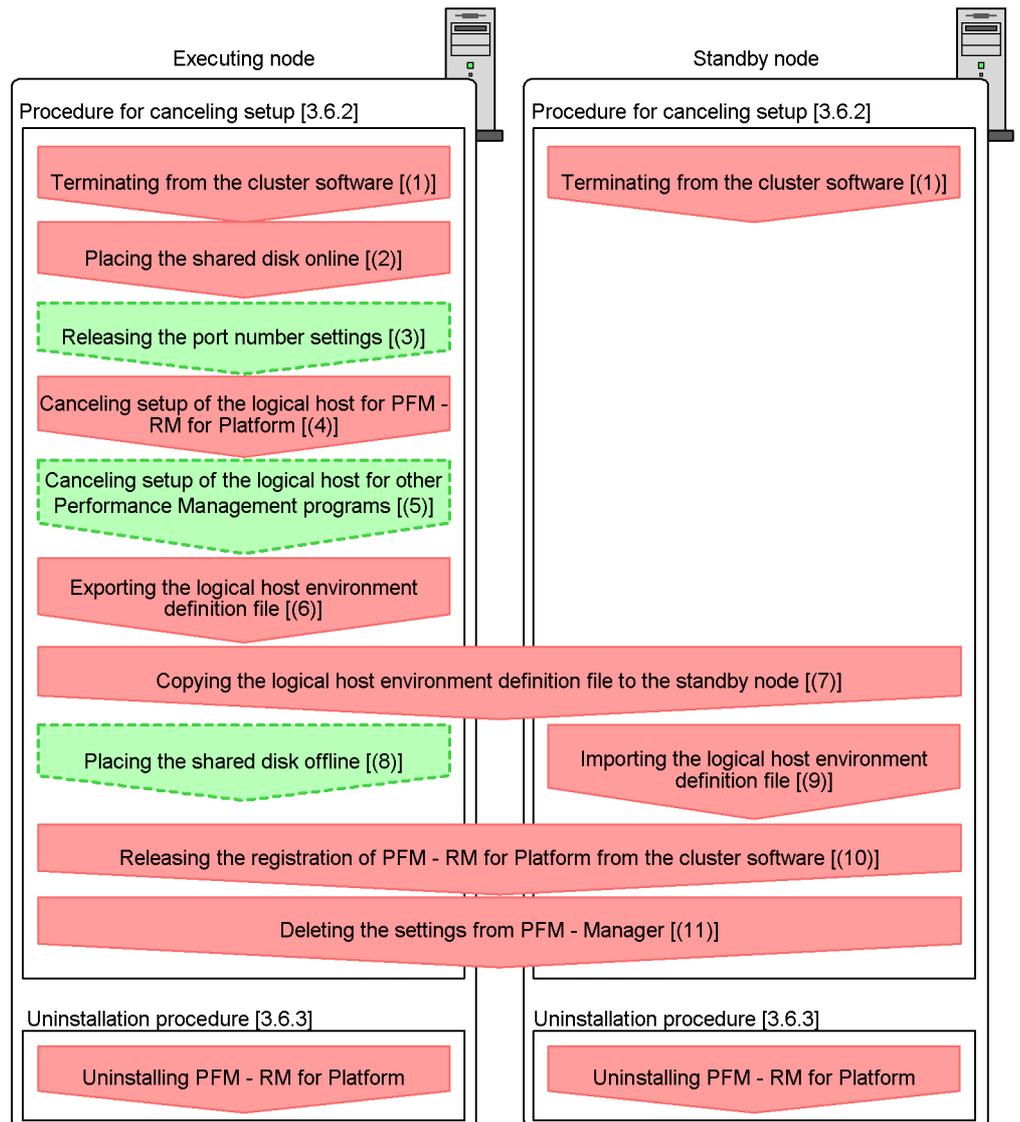
This section describes the procedures for uninstalling and canceling the setup of a PFM - RM for Platform that is running in a cluster system.

For details about uninstalling and canceling the setup of PFM - Manager, see the chapter that describes configuration and operation of cluster systems in the *Job Management Partner 1/Performance Management User's Guide*.

3.6.1 Procedure for uninstalling and canceling the setup in a cluster system (for Windows)

The following figure shows the procedure for uninstalling and canceling the setup of a PFM - RM for Platform that is running in a cluster system.

Figure 3-7: Procedure for uninstalling and canceling the setup of a PFM - RM for Platform in a cluster system (for Windows)

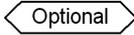


- Legend:
- : Required setup item
 - : Optional setup item
 - [] : Reference

3.6.2 Procedure for canceling the setup in a cluster system (for Windows)

Cancel the setup of the logical host environment.

This procedure must be performed at both the executing node and the standby node. Cancel the setup at the executing node first and then at the standby node.

Note that  indicates the items to be executed at the executing node,  indicates the items to be executed at the standby node, and  indicates the following setup items:

- Setup items that are required depending on the environment in use
- Setup items for changing the default settings

The following subsections describe how to cancel the setup of PFM - RM for Platform.

(1) **Terminating from the cluster software**

Use the cluster software to stop the Performance Management programs and services that are running at the executing and standby nodes.

For details about how to stop programs and services, see the cluster software documentation.

(2) **Placing the shared disk online**

Make sure that the shared disk is online.

If the shared disk is not in online status, use a program such as the cluster software or a volume manager to place it online.

(3) **Releasing the port number settings**

This procedure is required only when the `jpcconf 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 in the *Job Management Partner 1/Performance Management Planning and Configuration Guide* and the chapter that describes configuration and operation of cluster systems in the *Job Management Partner 1/Performance Management User's Guide*.

(4) **Canceling setup of the logical host for PFM - RM for Platform**

This subsection describes how to cancel the setup of the logical host.

If a logical host environment is deleted while the shared disk is in offline status, the logical host settings are deleted from the physical host, but the folders 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` folder under the environment folder.

To cancel the setup of the logical host for PFM - RM for Platform:

1. Execute the `jpccconf ha list` command to check the logical host settings.

Execute the following command:

```
jpccconf ha list -key all-lhost logical-host-name
```

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 path to the shared disk.

2. Execute the `jpccconf target unsetup` command to delete information about the monitoring host for PFM - RM for Platform.

Execute the following command:

```
jpccconf target unsetup -key RMPlatform -lhost logical-host-name
-inst instance-name -target monitoring-target-name
```

The `jpccconf target unsetup` command excludes the specified monitored host on the logical host as a monitoring target.

3. Execute the `jpccconf inst unsetup` command to delete the instance environment for PFM - RM for Platform.

Execute the following command:

```
jpccconf inst unsetup -key RMPlatform -lhost logical-host-name
-inst instance-name
```

The `jpccconf inst unsetup` command deletes the settings for starting the instance of the logical host. It also deletes files for the instance from the shared disk.

4. Execute the `jpccconf ha unsetup` command to delete the logical host environment for PFM - RM for Platform.

Execute the following command:

```
jpccconf ha unsetup -key RMPlatform -lhost logical-host-name
```

The `jpccconf ha unsetup` command deletes the settings for starting PFM - RM for Platform on the logical host. It also deletes files for the logical host from the shared disk.

3. Operation in a Cluster System

5. Execute the `jpccconf ha list` command to check the logical host settings.

Execute the following command:

```
jpccconf ha list -key all
```

Make sure that PFM - RM for Platform has been deleted from the logical host environment.

(5) Canceling setup of the logical host for other Performance Management

programs Executing system Optional

If you are also canceling from the same logical host the setup of Performance Management programs other than PFM - RM for Platform, do so at this stage.

For details about the procedure for canceling the setup, see the chapter that describes configuration and operation of cluster systems in the *Job Management Partner 1/ Performance Management User's Guide*. Also see the chapter that describes cluster system operation in each PFM - RM manual or PFM - Agent manual.

(6) Exporting the logical host environment definition file Executing system

After you have deleted the logical host environment for PFM - RM for Platform, export the environment definition to a file.

Performance Management achieves a matching environment in the executing and standby nodes 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 portion deleted at the executing node) and then deletes the Performance Management environment definition.

To export the logical host environment definition file:

1. Execute the `jpccconf ha 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
```

(7) Copying the logical host environment definition file to the standby

node Executing system Standby system

Copy from the executing node to the standby node the logical host environment

definition file that was exported in (6) *Exporting the logical host environment definition file*.

(8) Placing the shared disk offline Executing system Optional

Use a program such as the cluster software or a volume manager to place the shared disk in offline status and finish the procedure.

If you will be using the shared disk after this procedure is completed, there is no need to place it in offline status.

(9) Importing the logical host environment definition file Standby system

Import to the standby node the export file that was copied from the executing node. At the standby node, there is no need to place the shared disk in offline status during the import processing.

To import the logical host environment definition file:

1. Execute the `jpccconf ha import` command to import the logical host environment definition.

Execute the following command:

```
jpccconf ha import -f lhostexp.txt
```

This command changes settings in such a manner that the environment for the standby node becomes the same as for the export file. As a result, the settings for starting PFM - RM for Platform on the logical host are deleted. If you have canceled the setup of other Performance Management programs on the logical host, those settings are also deleted. If a fixed port number was set by the `jpccconf port` command during the setup, it is also released.

2. Execute the `jpccconf ha list` command to check the logical host settings.

Execute the following command:

```
jpccconf ha list -key all
```

Make sure that the displayed information is the same as when the `jpccconf ha list` command is executed at the executing node.

(10) Releasing the registration of PFM - RM for Platform from the cluster

software Executing system Standby system

From the cluster software, delete the settings related to PFM - RM for Platform on the logical host.

For details about how to delete the settings, see the cluster software documentation.

(11) Deleting the settings from PFM - Manager

Executing system

Standby system

Use PFM - Web Console to log on to PFM - Manager and delete the definitions related to the PFM - RM for Platform 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 - RM for Platform is running on logical host `jp1-halrmp`, execute the following command:

```
jpctool service delete -id service-ID -host jp1-halrmp -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*.

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.

3.6.3 Uninstallation procedure in a cluster system (for Windows)

Uninstall PFM - RM for Platform from both the executing node and the standby node.

The uninstallation procedure is the same as when a cluster system is not employed. For details about the procedure, see *2.3.3 How to uninstall (for Windows)*.

Notes

- Before you uninstall PFM - RM for Platform, stop all Performance Management programs and services at the node where PFM - RM for Platform is to be uninstalled.
- If you uninstall PFM - RM for Platform without deleting the logical host environment, the environment folders may remain. In such a case, manually delete the environment folders.

3.7 Uninstallation and unsetup in a cluster system (in UNIX)

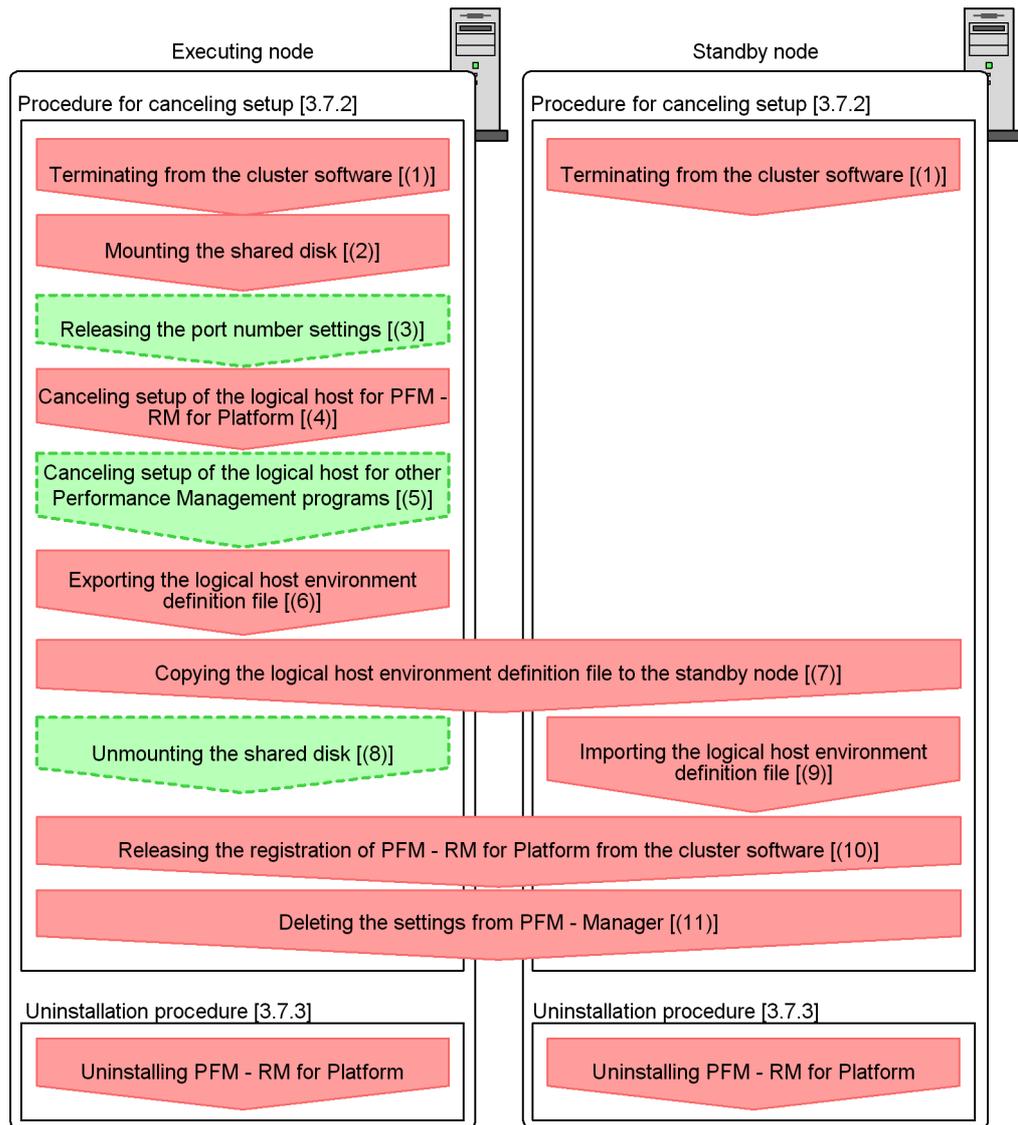
This section describes the procedures for uninstalling and canceling the setup of a PFM - RM for Platform that is running in a cluster system.

For details about uninstalling and canceling the setup of PFM - Manager, see the chapter that describes configuration and operation of cluster systems in the *Job Management Partner 1/Performance Management User's Guide*.

3.7.1 Procedure for uninstalling and canceling the setup in a cluster system (for UNIX)

The following figure shows the procedure for uninstalling and canceling the setup of a PFM - RM for Platform that is running in a cluster system.

Figure 3-8: Procedure for uninstalling and canceling the setup of a PFM - RM for Platform in a cluster system (for UNIX)



- Legend:
- : Required setup item
 - : Optional setup item
 - [] : Reference

3.7.2 Procedure for canceling the setup in a cluster system (for UNIX)

Cancel the setup of the logical host environment.

This procedure must be performed at both the executing node and the standby node. Cancel the setup at the executing node first and then at the standby node.

Note that  indicates the items to be executed at the executing node,  indicates the items to be executed at the standby node, and  indicates the following setup items:

- Setup items that are required depending on the environment in use
- Setup items for changing the default settings

The following subsections describe how to cancel the setup of PFM - RM for Platform.

(1) **Terminating from the cluster software**

Use the cluster software to stop the Performance Management programs and services that are running at the executing and standby nodes.

For details about how to stop programs and services, see the cluster software documentation.

(2) **Mounting the shared disk**

Make sure that the shared disk is mounted.

If the shared disk is not mounted, use a program such as the cluster software or a volume manager to mount it.

Note

If the shared disk is unmounted but the environment directory on the logical host whose setup is to be canceled contains the `jp1pc` directory and there are files under the `jp1pc` directory, the setup cancellation is performed without unmounting the shared disk. In this case, perform the following procedure:

1. Use the `tar` command to archive the `jp1pc` directory that is located in the environment directory on the logical host whose setup is to be canceled on the local disk.
2. Mount the shared disk.
3. If the environment directory on the logical host whose setup is to be canceled does not exist on the shared disk, create an environment directory.
4. Expand the `tar` file in the environment directory on the logical host whose

setup is to be canceled on the shared disk.

5. Unmount the shared disk.
6. Delete all files and directories under the `jp1pc` directory that is located in the environment directory on the logical host whose setup is to be canceled on the local disk.

(3) Releasing the port number settings

Executing system

Optional

This procedure is required only when the `jpccconf 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 in the *Job Management Partner 1/Performance Management Planning and Configuration Guide* and the chapter that describes configuration and operation of cluster systems in the *Job Management Partner 1/Performance Management User's Guide*.

(4) Canceling setup of the logical host for PFM - RM for Platform

Executing system

This subsection describes how to cancel the setup of the logical host.

If a logical host environment is deleted while the shared disk is in offline status, 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 the logical host for PFM - RM for Platform:

1. Execute the `jpccconf ha list` command to check the logical host settings.

Execute the following command:

```
jpccconf ha list -key all -lhost logical-host-name
```

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 path to the shared disk.

2. Execute the `jpccconf target unsetup` command to delete information about the monitoring host for PFM - RM for Platform.

Execute the following command:

```
jpccconf target unsetup -key RMPlatform -lhost logical-host-name
-inst instance-name -target monitoring-target-name
```

The `jpccconf target unsetup` command excludes the specified monitored host on the logical host as a monitoring target.

- Execute the `jpccconf inst unsetup` command to delete the instance environment for PFM - RM for Platform.

Execute the following command:

```
jpccconf inst unsetup -key RMPlatform -lhost logical-host-name
-inst instance-name
```

The `jpccconf inst unsetup` command deletes the settings for starting the instance of the logical host. It also deletes files for the instance from the shared disk.

- Execute the `jpccconf ha unsetup` command to delete the logical host environment for PFM - RM for Platform.

Execute the following command:

```
jpccconf ha unsetup -key RMPlatform -lhost logical-host-name
```

The `jpccconf ha unsetup` command deletes the settings for starting PFM - RM for Platform on the logical host. It also deletes files for the logical host from the shared disk.

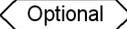
- Execute the `jpccconf ha list` command to check the logical host settings.

Execute the following command:

```
jpccconf ha list -key all
```

Make sure that PFM - RM for Platform has been deleted from the logical host environment.

(5) Canceling setup of the logical host for other Performance Management

programs  

If you are also canceling from the same logical host the setup of Performance Management programs other than PFM - RM for Platform, do so at this stage.

For details about the procedure for canceling the setup, see the chapter that describes configuration and operation of cluster systems in the *Job Management Partner 1/ Performance Management User's Guide*. Also see the chapter that describes cluster system operation in each PFM - RM manual or PFM - Agent manual.

(6) Exporting the logical host environment definition file

After you have deleted the logical host environment for PFM - RM for Platform, export the environment definition to a file.

Performance Management achieves a matching environment in the executing and standby nodes 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 portion deleted at the executing node) and then deletes the Performance Management environment definition.

To export the logical host environment definition file:

1. Execute the `jpccconf ha 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
```

(7) Copying the logical host environment definition file to the standby

node Executing system Standby system

Copy from the executing node to the standby node the logical host environment definition file that was exported in (6) *Exporting the logical host environment definition file*.

(8) Unmounting the shared disk Executing system Optional

Unmount the file system and finish the procedure.

If you will be using the shared disk after this procedure is completed, there is no need to unmount the file system.

(9) Importing the logical host environment definition file Standby system

Import to the standby node the export file that was copied from the executing node. At the standby node, there is no need to unmount the shared disk during the import processing.

To import the logical host environment definition file:

1. Execute the `jpccconf ha import` command to import the logical host environment definition.

Execute the following command:

```
jpccconf ha 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 - RM for Platform on the logical host are deleted. If you have canceled the setup of other Performance Management programs on the logical

host, those settings are also deleted. If a fixed port number was set by the `jpccconf port` command during the setup, it is also released.

- Execute the `jpccconf ha list` command to check the logical host settings.

Execute the following command:

```
jpccconf ha list -key all
```

Make sure that the displayed information is the same as when the `jpccconf ha list` command is executed at the executing node.

(10) Releasing the registration of PFM - RM for Platform from the cluster

software Executing system Standby system

From the cluster software, delete the settings related to PFM - RM for Platform on the logical host.

For details about how to delete the settings, see the cluster software documentation.

(11) Deleting the settings from PFM - Manager Executing system Standby system

Use PFM - Web Console to log on to PFM - Manager and delete the definitions related to the PFM - RM for Platform whose setup is being canceled.

To delete the settings from PFM - Manager:

- From PFM - Web Console, delete the agent.
- Delete the agent information from PFM - Manager.

For example, if PFM - Manager is running on logical host `jp1-hal` and PFM - RM for Platform is running on logical host `jp1-halrmp`, execute the following command:

```
jpctool service delete -id service-ID -host jp1-halrmp -lhost jp1-hal
```

In *service-ID*, specify the service ID of the agent that is to be deleted.

- 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*.

- 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.

3.7.3 Uninstallation procedure in a cluster system (for UNIX)

Uninstall PFM - RM for Platform from both the executing node and the standby node.

The uninstallation procedure is the same as when a cluster system is not employed. For details about the procedure, see *2.4.3 How to uninstall (for UNIX)*.

Notes

- Before you uninstall PFM - RM for Platform, stop all Performance Management programs and services at the node where PFM - RM for Platform is to be uninstalled.
- If you uninstall PFM - RM for Platform without deleting the logical host environment, the environment directories may remain. In such a case, manually delete the environment directories.

3.8 Changing the PFM - RM for Platform system configuration

When a change occurs, such as the monitoring target system's network configuration and host names, you must change the system configuration for PFM - RM for Platform.

When you change the system configuration for PFM - RM for Platform, 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*. When you rename a logical host, some additions of PFM - Agent require additional tasks. PFM - RM for Platform requires no additional tasks.

3.9 Changing the PFM - RM for Platform operation method in a cluster system

This section describes how to change the PFM - RM for Platform operation method in a cluster system.

For details about how to change the operation method for the entire Performance Management system, see the chapter that describes installation and setup in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

3.9.1 Updating an instance environment in a cluster system

To update an instance environment in a cluster system, check the logical host name and instance name and then update each setting for the instance environment. Perform the instance environment setup on the PFM - RM host at the executing node.

Check the information to be updated in advance by referencing *2.6.2 Updating an instance environment*.

Use the `jpccconf ha list` command to check the logical host name and instance name; use the `jpccconf inst setup` command to update the instance environment.

To update multiple instance environments, repeat the procedure described below.

To update an instance environment:

1. Check the logical host name and instance name.

Execute the `jpccconf ha list` command specifying the service key that indicates the PFM - RM for Platform running in the instance environment that you want to update.

For example, to check the logical host name and instance name of PFM - RM for Platform, execute the following command:

```
jpccconf ha list -key all
```

If the set logical host name is `jp1-halrmp` and the instance name is `SDC1`, the command displays as follows:

Output example:

Logical Host Name	Key	Environment Directory	[Instance Name]
jp1-halrmp	RMPlatform	path-of-logical-host	SDC1

2. If services of PFM - RM for Platform are running in the instance environment that is to be updated, stop them from the cluster software.
3. If the shared disk was placed offline (or unmounted) in step 2, use a program such as the cluster software or a volume manager to place it online (or mount it).
4. Execute the `jpccconf inst setup` command specifying the service key that indicates PFM - RM for Platform in the instance environment that you want to update.

For example, to update the instance environment where the logical host name for PFM - RM for Platform is `jp1-halrmp` and the instance name is `SDC1`, execute the following command:

```
jpccconf inst setup -key RMPlatform -lhost jp1-halrmp -inst SDC1
```

5. Update the instance environment for PFM - RM for Platform.

Enter the instance environment settings for PFM - RM for Platform according to the command's instructions. For details about each instance environment setting for PFM - RM for Platform, see *2.6.2 Updating an instance environment*. The current settings are displayed (note that the value of `RMHost_Password` is not displayed). To not change a displayed value, simply press the return key. When all entries have been completed, the instance environment is updated.

6. Restart the services for the updated instance environment from the cluster software.

For details about how to start and stop services, see the chapter that describes startup and termination of Performance Management in the *Job Management Partner 1/Performance Management User's Guide*.

Note:

To change the value of an item that cannot be updated, you must 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 1/Performance Management Reference*.

3.9.2 Updating the monitoring target in a cluster system

To update the monitoring target in a cluster system, check the monitoring target name and then update the monitoring target. Perform the monitoring target settings on the PFM - RM host at the executing node.

Check the information to be updated in advance by referencing *2.1.4(3) Setting the monitored host* for Windows and *2.2.4(4) Setting the monitored host* for UNIX.

Use the `jpccconf target list` command to check the monitoring target name; use

the `jpccconf target display` command to check the settings for the monitoring target; use the `jpccconf target setup` command to update the monitoring target.

Reference note:

When you update the monitoring target, there is no need to stop services of PFM - RM for Platform.

To update multiple monitoring targets, repeat the procedure described below.

To update the monitoring target:

1. Check the name of the monitoring target.

Execute the `jpccconf target list` command specifying the service key that indicates the PFM - RM for Platform that is monitoring the target to be updated, the logical host name, and the instance name.

For example, to check the name of the monitoring target for the PFM - RM for Platform whose logical host name is `jp1-halrmp` and instance name is `SDC1`, execute the following command:

```
jpccconf target list -key RMPlatform -lhost jp1-halrmp -inst SDC1
```

When this command is executed, the following information is displayed:

Output example:

```
Targets:
targethost1
targethost2
Groups:
All
```

2. Check the settings for the monitoring target.

Execute the `jpccconf target display` command specifying the service key that indicates the PFM - RM for Platform that is monitoring the target to be updated, the logical host name, the instance name, and the monitoring target name.

For example, to check the settings for the monitoring target whose name is `targethost1`, logical host name is `jp1-halrmp`, and instance name is `SDC1`, execute the following command:

```
jpccconf target display -key RMPlatform -lhost jp1-halrmp -inst SDC1 -target targethost1
```

3. If the shared disk is in offline status (or is unmounted), use a program such as the cluster software or a volume manager to place it online (or mount it).

4. Execute the `jpccconf target setup` command specifying the service key that indicates the PFM - RM for Platform that is monitoring the target to be updated, the logical host name, the instance name, and the monitoring target name.

For example, to update the monitoring target whose name is `targethost1`, logical host name is `jp1-halrmp`, and instance name is `SDC1`, execute the following command:

```
jpccconf target setup -key RMPlatform -lhost jp1-halrmp -inst SDC1 -target targethost1
```

5. Update the monitoring target for PFM - RM for Platform.

Enter the monitoring target information for PFM - RM for Platform according to the command's instructions. For details about the monitoring target information for PFM - RM for Platform, see *2.6.3 Updating a monitoring target*. The current settings are displayed (note that the value of `password` is not displayed). To not change a displayed value, simply press the return key. When all entries have been completed, the monitoring target is updated.

Note:

To change the value of an item that cannot be updated, you must delete the monitoring target information and then re-create it.

3.9.3 Importing and exporting the logical host environment definition file

Import and export the logical host environment definition file only if you have performed the following operations:

- You changed the node configuration on the logical host when you set up the logical host, instance environment, and monitoring target.

For details about how to set up the logical host for PFM - RM for Platform, see the following subsections:

- For Windows: *3.4.4(3) Setting up a logical host environment for PFM - RM for Platform*
- For UNIX: *3.5.4(3) Setting up a logical host environment for PFM - RM for Platform*

For details about how to set up an instance environment, see the following subsections:

- For Windows: *3.4.4(5) Setting up an instance environment*
- For UNIX: *3.5.4(5) Setting up an instance environment*

For details about how to set the monitoring target, see the following subsections:

- For Windows: *3.4.4(6) Setting the monitoring target*
- For UNIX: *3.5.4(6) Setting the monitoring target*
- You executed an operation that requires export of the logical host environment definition file when you set up a logical host for other Performance Management programs.

For details about how to set up a logical host for other Performance Management programs, see the following subsections:

- For Windows: *3.4.4(7) Setting up the logical host for other Performance Management programs*
- For UNIX: *3.5.4(7) Setting up the logical host for other Performance Management programs*
- You set port numbers during network setup.

For details about how to set up a network, see the following subsections:

- For Windows: *3.4.4(8) Setting up a network*
- For UNIX: *3.5.4(8) Setting up a network*

For details about how to import and export the logical host environment definition file, see the following subsections:

- For Windows: *3.4.4(12) Exporting the logical host environment definition file through 3.4.4(15) Importing the logical host environment definition file*
- For UNIX: *3.5.4(12) Exporting the logical host environment definition file through 3.5.4(15) Importing the logical host environment definition file*

If you have only updated the instance environment and monitoring target, there is no need to import or export the logical host environment definition file.

For details about how to set up an instance environment, see *3.9.1 Updating an instance environment in a cluster system*. For details about how to update the monitoring target, see *3.9.2 Updating the monitoring target in a cluster system*.

Chapter

4. Monitoring Template

This chapter describes the monitoring template for PFM - RM for Platform.

- Overview of the monitoring template
- Format of alarm explanations
- List of alarms
- Format of report explanations
- Organization of report directories
- List of reports

Overview of the monitoring template

A set of alarms and reports provided by PFM - RM for Platform is called a *monitoring template*. You can define alarms and reports by the following methods:

- Use the alarms and reports defined by PFM - RM for Platform
- Copy and customize the alarms and reports defined by PFM - RM for Platform
- Use a wizard to define new information

Because the necessary information for reports and alarms is predefined in the provided monitoring template, you can use the provided monitoring template as-is, or you can copy the provided template's reports and alarms and customize them as appropriate for your environment. Thus, it is not necessary to use the wizard to create new definitions, which simplifies the preparations for monitoring the operation status of a monitoring target.

This chapter describes the alarm and report settings in the monitoring template that have been defined by PFM - RM for Platform.

For details about how to use the monitoring template, see the chapter that describes report creation for operation analysis or operation monitoring by alarms in the *Job Management Partner 1/Performance Management User's Guide*.

Format of alarm explanations

This section describes the format used to explain alarms. The alarms are presented in alphabetical order.

Alarm name

Indicates the alarm's name in the monitoring template.

Overview

Provides an overview of the target that can be monitored by the alarm.

Main settings

Explains in tabular format the main settings for this alarm.

This table lists the correspondence between settings on the Properties window of PFM - Web Console and the alarm settings defined in the monitoring template.

To display the Properties window in PFM - Web Console, click the alarm icon on the **Alarms** page, and then click the **Properties** method. For details about the settings for each alarm, check the Properties window.

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.

To display these reports in PFM - Web Console, on the **Agents** page, click the agent icon, and then click the  icon displayed in the **Display Alarm Status** method.

List of alarms

A table containing one or more alarms is called an *alarm table*. The alarms defined in the monitoring template of PFM - RM for Platform are in alarm table format and are stored in the `RM Platform` folder that is displayed on the **Alarms** page of PFM - Web Console.

The alarm table name is as follows:

- PFM RM Platform Template Alarms 09.00

Alarm table name version

The numerics (09.00) at the end of the alarm table name indicate the alarm table's version number.

When you use alarms defined in the 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 *H. Version Compatibility*.

The following table lists (in alphabetical order) and describes the alarms defined in the monitoring template of PFM - RM for Platform.

Table 4-1: List of alarms

Alarm name	Monitoring target	Purpose
Available Memory	Size of the unused physical memory area	Monitoring operation status
CPU Usage	Processor usage rate	Monitoring performance data
Disk Busy %	Percentage of time the disk was busy (%)	
Disk Free Size	Size of the unused area on the logical disk (in megabytes)	Monitoring operation status
Disk Service Time	Device usage (in busy status)	Monitoring performance data
Disk Space	Ratio of the free area on the logical disk to the total available area	Monitoring operation status
I/O Wait Time	Percentage of the time all processors in the entire host were in I/O wait status	Monitoring performance data
Kernel CPU	Percentage of the time all processors in the entire host were running in the kernel mode	
Network Received	Rate of data received by the network interface	

Alarm name	Monitoring target	Purpose
Page Faults	Page fault count	
Pagescans	Page scan rate	
Processor Queue	Number of requests in the processor queue that are ready for execution	
Run Queue	Number of threads in the execution queue	
Swap Outs	Number of pages that were swapped out	
Target Host Status	Status of the connection to the monitored host	Monitoring operation status
Used Swap Mbytes	Size of the memory used in the virtual memory area (in megabytes)	
User CPU	Percentage of the time all processors in the entire host were running in the user mode	Monitoring performance data

PFM - RM for Platform provides in the monitoring template various alarms for monitoring the operation status in order to determine whether the system is running normally, as well as alarms for monitoring performance data in order to determine whether the system is providing adequate services. You can set use of the alarms that are appropriate to your purposes.

Note

Some fields used in alarms may not be supported by the OS of the monitored host. Do not use alarm fields that are not supported.

The following table shows which alarm fields are supported by the monitored host OSs.

Table 4-2: Support status of alarm fields (monitoring template)

Alarm name	OS of the monitored host					When an unsupported alarm is used by the OS
	Windows	HP-UX	Solaris	AIX	Linux	
Available Memory	Y	Y	Y	Y	Y	--
CPU Usage	Y	Y	Y	Y	Y	--
Disk Busy %	Y	Y	Y	Y	Y	--
Disk Free Size	Y	Y	Y	Y	Y	--
Disk Service Time	Y	Y	Y	Y	Y	--
Disk Space	Y	Y	Y	Y	Y	--

Alarm name	OS of the monitored host					When an unsupported alarm is used by the OS
	Windows	HP-UX	Solaris	AIX	Linux	
I/O Wait Time	N	Y	Y	Y	Y	No alarm event is issued because the field does not match the conditional expression for alarm.
Kernel CPU	Y	Y	Y	Y	Y	--
Network Received	Y	N	N	N	N	No alarm event is issued because the field does not match the conditional expression for alarm.
Page Faults	Y	N	Y	Y	N	No alarm event is issued because the field does not match the conditional expression for alarm.
Pagescans	N	Y	N	Y	N	No alarm event is issued because the field does not match the conditional expression for alarm.
Processor Queue	Y	N	N	N	N	No alarm event is issued because the field does not match the conditional expression for alarm.
Run Queue	N	Y	Y	Y	Y	No alarm event is issued because the field does not match the conditional expression for alarm.
Swap Outs	N	Y	Y	N	Y	No alarm event is issued because the field does not match the conditional expression for alarm.
Target Host Status	Y	Y	Y	Y	Y	--
Used Swap Mbytes	Y	Y	Y	Y	Y	--
User CPU	Y	Y	Y	Y	Y	--

Legend:

Y: Field's use is supported for alarms.

N: Field's use is not supported for alarms.

--: Not applicable

Available Memory

Overview

The Available Memory alarm monitors the unused size of the physical memory area (in megabytes).

The monitored value is the total size of zero memory, available memory, and standby memory (already cached) that can be allocated to processes or that can be used immediately by the system during collection. This is the most recent monitored value, not an average value.

Main settings

Table 4-3: Alarm property settings in PFM - Web Console (Available Memory)

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Product	RM Platform
	Message	Available memory is below %CVS megabytes
	Enable alarm	Selected
	Monitoring time range	Always monitor
	Report alarm when the following damping condition is reached	Selected
	Interval(s)	3
	occurrence(s) during	2
Action	Email	--
	Command	--
	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	System Summary (PI)
	Field	Free Mem Mbytes
	Abnormal condition	Free Mem Mbytes < 3
	Warning condition	Free Mem Mbytes < 4

Available Memory

Legend:

--: The setting is always ignored.

Alarm table

PFM RM Platform Template Alarms 09.00

Related reports

Reports/RM Platform/Troubleshooting/Real-Time/Memory Used
Status

CPU Usage

Overview

The CPU Usage alarm monitors the processor usage rate (%). The monitored value is the percentage of time the processor was executing non-idle threads.

The maximum value is 100% regardless of the multiprocessor environment.

Main settings

Table 4-4: Alarm property settings in PFM - Web Console (CPU Usage)

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Product	RM Platform
	Message	CPU is at %CVS% utilization
	Enable alarm	Selected
	Monitoring time range	Always monitor
	Report alarm when the following damping condition is reached	Selected
	Interval(s)	3
	Occurrence(s) during	2
Action	Email	--
	Command	--
	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	System Summary (PI)
	Field	CPU %
	Abnormal condition	CPU % >= 90
	Warning condition	CPU % >= 80

Legend:

--: The setting is always ignored.

CPU Usage

Alarm table

PFM RM Platform Template Alarms 09.00

Related reports

Reports/RM Platform/Status Reporting/Real-Time/CPU Used Status

Disk Busy %

Overview

The Disk Busy % alarm monitors the disk busy rate (%). The monitored value is the percentage of time the disk was busy during read and write request processing.

This value may exceed 100 if processing for the device is executed continuously.

Main settings

Table 4-5: Alarm property settings in PFM - Web Console (Disk Busy %)

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Product	RM Platform
	Message	Disk busy(%CVS1) is %CVS2%
	Enable alarm	Selected
	Monitoring time range	Always monitor
	Report alarm when the following damping condition is reached	Selected
	Interval(s)	5
	occurrence(s) during	4
Action	Email	--
	Command	--
	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	Physical Disk Overview (PI_PDSK)
	Field	<ul style="list-style-type: none"> • ID • Busy %
	Abnormal condition	ID <> "_Total" AND (Busy % >= "90")
	Warning condition	ID <> "_Total" AND (Busy % >= "80")

Legend:

--: The setting is always ignored.

Disk Busy %

Alarm table

PFM RM Platform Template Alarms 09.00

Related reports

Reports/RM Platform/Troubleshooting/Real-Time/Physical Disk
Busy Status

Note

To display a value in the message text, set a field in the alarm condition expression. For the Disk Busy % alarm, a condition value that always satisfies the ID field is specified.

Disk Free Size

Overview

The Disk Free Size alarm monitors the size of the unused area on the logical disk.

Main settings

Table 4-6: Alarm property settings in PFM - Web Console (Disk Free Size)

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Product	RM Platform
	Message	Disk free size(%CVS1) is %CVS2 megabytes
	Enable alarm	Selected
	Evaluate all data	Selected
	Monitoring time range	Always monitor
	Report alarm when the following damping condition is reached	--
	Interval(s)	--
	occurrence(s) during	--
Action	Email	--
	Command	--
	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	Logical Disk Overview (PI_LDSK)
	Field	<ul style="list-style-type: none"> • ID • Free Mbytes
	Abnormal condition	ID <> "_Total" AND (Free Mbytes < "5120")
	Warning condition	ID <> "_Total" AND (Free Mbytes < "10240")

Legend:

--: The setting is always ignored.

Alarm table

PFM RM Platform Template Alarms 09.00

Related reports

Reports/RM Platform/Status Reporting/Real-Time/Free Megabytes - Logical Disk

Note

To display a value in the message text, set a field in the alarm condition expression. For the Disk Free Size alarm, a condition value that always satisfies the ID field (drive name) is set.

Disk Service Time

Overview

The Disk Service Time alarm monitors the device usage (in busy status). The monitored value is the average time required for a request to be completed from the time it goes into the I/O queue.

Main settings

Table 4-7: Alarm property settings in PFM - Web Console (Disk Service Time)

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Product	RM Platform
	Message	Average disk time(%CVS1) is %CVS2 secs
	Enable alarm	Selected
	Monitoring time range	Always monitor
	Report alarm when the following damping condition is reached	Selected
	Interval(s)	3
	occurrence(s) during	2
Action	Email	--
	Command	--
	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	Physical Disk Overview (PI_PDSK)
	Field	<ul style="list-style-type: none"> • ID • Avg Disk Time
	Abnormal condition	ID <> "_Total" AND Avg Disk Time > 0.1
	Warning condition	ID <> "_Total" AND Avg Disk Time > 0.06

Disk Service Time

Legend:

--: The setting is always ignored.

Alarm table

PFM RM Platform Template Alarms 09.00

Related reports

Reports/RM Platform/Status Reporting/Real-Time/Avg Disk Time
Status

Disk Space

Overview

The Disk Space alarm monitors the ratio of the free area on the logical disk to the total available area.

Main settings

Table 4-8: Alarm property settings in PFM - Web Console (Disk Space)

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Product	RM Platform
	Message	Available disk space(%CVS1) is %CVS2%
	Enable alarm	Selected
	Monitoring time range	Always monitor
	Report alarm when the following damping condition is reached	Selected
	Interval(s)	3
	occurrence(s) during	2
Action	Email	--
	Command	--
	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	Logical Disk Overview (PI_LDSK)
	Field	<ul style="list-style-type: none"> • ID • Free Mbytes % • Size
	Abnormal condition	ID <> "_Total" AND (Free Mbytes % < 5 AND Size > 0)
	Warning condition	ID <> "_Total" AND (Free Mbytes % < 15 AND Size > 0)

Disk Space

Legend:

--: The setting is always ignored.

Alarm table

PFM RM Platform Template Alarms 09.00

Related reports

Reports/RM Platform/Status Reporting/Real-Time/Free Megabytes -
Logical Disk

I/O Wait Time

Overview

The I/O Wait Time alarm monitors the percentage of time all processors on the entire host were in I/O wait status.

Main settings

Table 4-9: Alarm property settings in PFM - Web Console (I/O Wait Time)

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Product	RM Platform
	Message	I/O wait time is %CVS%
	Enable alarm	Selected
	Monitoring time range	Always monitor
	Report alarm when the following damping condition is reached	Selected
	Interval(s)	3
	occurrence(s) during	2
Action	Email	--
	Command	--
	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	System Summary (PI)
	Field	Wait %
	Abnormal condition	Wait % > 80
	Warning condition	Wait % > 60

Legend:

--: The setting is always ignored.

Alarm table

PFM RM Platform Template Alarms 09.00

Related reports

Reports/RM Platform/Status Reporting/Real-Time/CPU Used Status

Note

Do not use this alarm when the OS of the monitored host is Windows.

Kernel CPU

Overview

The Kernel CPU alarm monitors the percentage of time all processors in the entire host were running in the kernel mode.

Main settings

Table 4-10: Alarm property settings in PFM - Web Console (Kernel CPU)

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Product	RM Platform
	Message	Kernel mode CPU usage is %CVS%
	Enable alarm	Selected
	Monitoring time range	Always monitor
	Report alarm when the following damping condition is reached	Selected
	Interval(s)	3
	occurrence(s) during	2
Action	Email	--
	Command	--
	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	System Summary (PI)
	Field	System %
	Abnormal condition	System % > 75
	Warning condition	System % > 50

Legend:

--: The setting is always ignored.

Alarm table

PFM RM Platform Template Alarms 09.00

Kernel CPU

Related reports

Reports/RM Platform/Status Reporting/Real-Time/CPU Used Status

Network Received

Overview

The Network Received alarm monitors for reception of data that exceeds the bandwidth of the network interface card.

Main settings

Table 4-11: Alarm property settings in PFM - Web Console (Network Received)

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Product	RM Platform
	Message	Received is %CVS bytes/sec
	Enable alarm	Selected
	Monitoring time range	Always monitor
	Report alarm when the following damping condition is reached	Selected
	Interval(s)	5
	occurrence(s) during	3
Action	Email	--
	Command	--
	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	Network Interface Overview (PI_NET)
	Field	Rcvd Bytes/sec
	Abnormal condition	Rcvd Bytes/sec >= 50000 ^{#1}
	Warning condition	Rcvd Bytes/sec >= 50000 ^{#2}

Legend:

--: The setting is always ignored.

#1

A guideline for the value to be set is about 70% of the NIC bandwidth.

#2

A guideline for the value to be set is about 50% of the NIC bandwidth.

Alarm table

PFM RM Platform Template Alarms 09.00

Related reports

Reports/RM Platform/Troubleshooting/Real-Time/Network Data

Note

- Do not use this alarm when the OS of the monitored host is UNIX.
- 50000 is set as the value for this alarm for both abnormal and warning conditions. To use this alarm, change the values for abnormal and warning conditions as appropriate to the user's environment.

Page Faults

Overview

The Page Faults alarm monitors the memory load status.

Main settings

Table 4-12: Alarm property settings in PFM - Web Console (Page Faults)

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Product	RM Platform
	Message	Page fault is %CVS/sec
	Enable alarm	Selected
	Monitoring time range	Always monitor
	Report alarm when the following damping condition is reached	Selected
	Interval(s)	3
	occurrence(s) during	2
Action	Email	--
	Command	--
	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	System Summary (PI)
	Field	Page Fault Counts/sec
	Abnormal condition	Page Fault Counts/sec >= 5
	Warning condition	Page Fault Counts/sec >= 4

Legend:

--: The setting is always ignored.

Alarm table

PFM RM Platform Template Alarms 09.00

Related reports

Reports/RM Platform/Troubleshooting/Real-Time/System Overview

Note

Do not use this alarm when the OS of the monitored host is HP-UX or Linux.

Pagescans

Overview

The Pagescans alarm monitors the virtual memory available to the system. The monitored value is the number of page scans per second.

Main settings

Table 4-13: Alarm property settings in PFM - Web Console (Pagescans)

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Product	RM Platform
	Message	Pagescan rate is %CVS/sec
	Enable alarm	Selected
	Monitoring time range	Always monitor
	Report alarm when the following damping condition is reached	Selected
	Interval(s)	3
	occurrence(s) during	2
Action	Email	--
	Command	--
	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	System Summary (PI)
	Field	Page Scan Counts/sec
	Abnormal condition	Page Scan Counts/sec > 150
	Warning condition	Page Scan Counts/sec > 100

Legend:

--: The setting is always ignored.

Alarm table

PFM RM Platform Template Alarms 09.00

Related reports

Reports/RM Platform/Troubleshooting/Real-Time/System Overview

Note

Do not use this alarm when the OS of the monitored host is Windows, Linux, or Solaris.

Processor Queue

Overview

The Processor Queue alarm monitors processor congestion.

Main settings

Table 4-14: Alarm property settings in PFM - Web Console (Processor Queue)

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Product	RM Platform
	Message	Queue Length is %CVS
	Enable alarm	Selected
	Monitoring time range	Always monitor
	Report alarm when the following damping condition is reached	Selected
	Interval(s)	3
	occurrence(s) during	2
Action	Email	--
	Command	--
	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	System Summary (PI)
	Field	Processor Queue Length
	Abnormal condition	Processor Queue Length >= 10
	Warning condition	Processor Queue Length >= 2

Legend:

--: The setting is always ignored.

Alarm table

PFM RM Platform Template Alarms 09.00

Related reports

Reports/RM Platform/Status Reporting/Real-Time/CPU Used Status

Note

Do not use this alarm when the OS of the monitored host is UNIX.

Run Queue

Overview

The Run Queue alarm monitors the number of threads in the execution queue.

Main settings

Table 4-15: Alarm property settings in PFM - Web Console (Run Queue)

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Product	RM Platform
	Message	Run queue avg five minute is %CVS
	Enable alarm	Selected
	Monitoring time range	Always monitor
	Report alarm when the following damping condition is reached	--
	Interval(s)	--
	occurrence(s) during	--
Action	Email	--
	Command	--
	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	System Summary (PI)
	Field	Run Queue Avg 5 min
	Abnormal condition	Run Queue Avg 5 min > 8
	Warning condition	Run Queue Avg 5 min > 4

Legend:

--: The setting is always ignored.

Alarm table

PFM RM Platform Template Alarms 09.00

Related reports

Reports/RM Platform/Status Reporting/Real-Time/CPU Used Status

Note

Do not use this alarm when the OS of the monitored host is Windows.

Swap Outs

Overview

The Swap Outs alarm monitors the swap area.

Main settings

Table 4-16: Alarm property settings in PFM - Web Console (Swap Outs)

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Product	RM Platform
	Message	Swapout rate is %CVS/sec
	Enable alarm	Selected
	Monitoring time range	Always monitor
	Report alarm when the following damping condition is reached	--
	Interval(s)	--
	occurrence(s) during	--
Action	Email	--
	Command	--
	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	System Summary (PI)
	Field	Swap-Out Pages/sec
	Abnormal condition	Swap-Out Pages/sec > 200
	Warning condition	Swap-Out Pages/sec > 100

Legend:

--: The setting is always ignored.

Alarm table

PFM RM Platform Template Alarms 09.00

Related reports

Reports/RM Platform/Troubleshooting/Real-Time/System Overview

Note

Do not use this alarm when the OS of the monitored host is Windows or AIX.

Target Host Status

Overview

The Target Host Status alarm monitors the status of the connection to the monitored host.

Main settings

Table 4-17: Alarm property settings in PFM - Web Console (Target Host Status)

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Product	RM Platform
	Message	Target Host not available
	Enable alarm	Selected
	Monitoring time range	Always monitor
	Report alarm when the following damping condition is reached	Selected
	Interval(s)	3
	occurrence(s) during	2
Action	Email	--
	Command	--
	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	System Status (PD)
	Field	Status
	Abnormal condition	Status <> SUCCESS
	Warning condition	Status <> SUCCESS

Legend:

--: The setting is always ignored.

Alarm table

PFM RM Platform Template Alarms 09.00

Target Host Status

Related reports

Reports/RM Platform/Troubleshooting/Recent Past/Target Host Status

Used Swap Mbytes

Overview

The Used Swap Mbytes alarm monitors the memory usage status.

Main settings

Table 4-18: Alarm property settings in PFM - Web Console (Used Swap Mbytes)

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Product	RM Platform
	Message	Used swap is %CVS megabytes
	Enable alarm	Selected
	Monitoring time range	Always monitor
	Report alarm when the following damping condition is reached	Selected
	Interval(s)	3
	occurrence(s) during	2
Action	Email	--
	Command	--
	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	System Summary (PI)
	Field	Used Swap Mbytes
	Abnormal condition	Used Swap Mbytes >= 1024 ^{#1}
	Warning condition	Used Swap Mbytes >= 1024 ^{#2}

Legend:

--: The setting is always ignored.

#1

A guideline for the value to be set is about 90% of the value set for Total Swap Mbytes.

Used Swap Mbytes

#2

Set the same value as for Total Mem Mbytes.

Alarm table

PFM RM Platform Template Alarms 09.00

Related reports

Reports/RM Platform/Troubleshooting/Real-Time/Pool Nonpaged Status

Note

1024 is set as the value for this alarm for both abnormal and warning conditions. To use this alarm, change the values for abnormal and warning conditions as appropriate to the user's environment.

User CPU

Overview

The User CPU alarm monitors the percentage of the time all processors in the entire host were running in the user mode.

Main settings

Table 4-19: Alarm property settings in PFM - Web Console (User CPU)

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Product	RM Platform
	Message	User mode CPU usage is %CVS%
	Enable alarm	Selected
	Monitoring time range	Always monitor
	Report alarm when the following damping condition is reached	Selected
	Interval(s)	3
	occurrence(s) during	2
Action	Email	--
	Command	--
	SNMP	Abnormal, Warning, Normal
Conditional expression	Record	System Summary (PI)
	Field	User %
	Abnormal condition	User % > 85
	Warning condition	User % > 65

Legend:

--: The setting is always ignored.

Alarm table

PFM RM Platform Template Alarms 09.00

User CPU

Related reports

Reports/RM Platform/Status Reporting/Real-Time/CPU Used Status

Format of report explanations

This section describes the format used to explain reports. The reports are presented in alphabetical order.

Report name

Indicates the report's name in the monitoring template.

A report whose name includes (Multi-Agent) displays information about multiple instances.

A report whose name does not include (Multi-Agent) 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.

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 indicated record. Before displaying a historical report, check the Agents window in PFM - Web Console to see if **Log** is set to **Yes**. 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 these drilldown reports, in the PFM - Web Console Report window, select the name of the desired drilldown report from the drilldown report drop-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 the drilldown report in smaller intervals by displaying it from the time item. Note that some reports do not have any drilldown reports.

For details about the 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 directories

The following shows the organization of the report directories for PFM - RM for Platform. Angle brackets enclose directory names.

```
+-- <RM Platform>
  +-- <Monthly Trend>
    |   +-- CPU Used Status
    |   +-- CPU Used Status (Multi-Agent)
    |   +-- Memory Used Status (Multi-Agent)
  +-- <Status Reporting>
    |   +-- <Daily Trend>
    |       +-- CPU Used Status (Multi-Agent)
    |       +-- Memory Paging Status
    |       +-- Memory Used Status
    |       +-- Memory Used Status (Multi-Agent)
    |   +-- <Real-Time>
    |       +-- Avg Disk Time Status
    |       +-- CPU Used Status
    |       +-- Free Megabytes - Logical Disk
  +-- <Troubleshooting>
    |   +-- <Real-Time>
    |       +-- CPU Per Processor Status
    |       +-- Memory Paging Status
    |       +-- Memory Used Status
    |       +-- Network Data
    |       +-- Physical Disk Busy Status
    |       +-- Pool Nonpaged Status
    |       +-- System Overview
    |   +-- <Recent Past>
    |       +-- Avg Disk Time Status
    |       +-- CPU Used Status
    |       +-- Free Megabytes - Logical Disk
    |       +-- Memory Paging Status
    |       +-- Memory Used Status
    |       +-- Network Data
    |       +-- Physical Disk Busy Status
    |       +-- Pool Nonpaged Status
    |       +-- System Overview
    |       +-- Target Host Status
```

The following describes each directory.

Monthly Trend directory

This directory contains reports that display daily information for the past month. Use the reports in this directory to check monthly trends in the system.

Status Reporting directory

This directory contains reports that display daily information. Use the reports in this directory to check the overall status of the system. You can display real-time reports as well as historical reports.

Daily Trend directory

This directory contains reports for displaying hourly information for the past 24 hours. Use the reports in this directory to check the daily status of the system.

Real-Time directory

This directory contains real-time reports for checking the system status.

Troubleshooting directory

This directory contains reports for displaying information that is useful for resolving problems. In the event of a system problem, use the reports in this directory to check the cause of the problem.

Real-Time directory

This directory contains real-time reports for checking the current system status.

Recent Past directory

This directory contains historical reports for displaying minute-by-minute information for the past hour.

List of reports

The following table lists and describes the reports defined in the monitoring template for PFM - RM for Platform.

Table 4-20: List of reports

Category	Report name	Displayed information
System	System Overview (real-time report indicating the system operation status)	Displays the current operation status of the system.
	System Overview (historical report indicating the system operation status)	Displays the minute-by-minute system operation status over the past hour.
	Target Host Status (historical report indicating the status of the connection to the monitored host and information about the OS of the monitored host)	Displays the minute-by-minute status of the connection to the monitored host and information about the OS of the monitored host over the past hour.
Disk	Avg Disk Time Status (real-time report indicating the average I/O time for the physical disk)	Displays the current average I/O operation time for the physical disk.
	Avg Disk Time Status (historical report indicating the average I/O time for the physical disk)	Displays minute-by-minute the average I/O operation time for the physical disk over the past hour.
	Free Megabytes - Logical Disk (real-time report indicating the available area on the logical disk)	Displays information about the area that is currently available on the logical disk.
	Free Megabytes - Logical Disk (historical report indicating the available area on the logical disk)	Displays minute-by-minute information about the area that is available on the logical disk over the past hour.
	Physical Disk Busy Status (real-time report indicating the length of time the disk was busy)	Displays the percentage of time the current disk was busy.
	Physical Disk Busy Status (historical report indicating the length of time the disk was busy)	Displays minute-by-minute information about the percentage of time the disk was busy over the past hour.
Network	Network Data (real-time report indicating the status of communication between networks)	Displays the current status of communication between networks.
	Network Data (historical report indicating the status of communication between networks)	Displays the minute-by-minute status of communication between networks over the past hour.

Category	Report name	Displayed information
Processor	CPU Per Processor Status (real-time report indicating the processor usage rate for each processor)	Displays the current processor usage rate for each processor.
	CPU Used Status (real-time report indicating the CPU usage status)	Displays the current CPU usage status in the system.
	CPU Used Status (historical report indicating the CPU usage status (1 month))	Displays the daily CPU usage status over the past month.
	CPU Used Status (historical report indicating the CPU usage status (1 hour))	Displays the minute-by-minute CPU usage status in the system over the past hour.
	CPU Used Status (Multi-Agent) (historical report indicating the CPU usage status in multiple systems (1 month))	Displays the daily CPU usage status in multiple systems over the past month.
	CPU Used Status (Multi-Agent) (historical report indicating the CPU usage status in multiple systems (1 day))	Displays the hourly CPU usage status in multiple systems over the past day (24 hours).
Memory	Memory Paging Status (real-time report indicating information about memory and paging)	Displays current information about memory and paging.
	Memory Paging Status (historical report indicating information about memory and paging (1 day))	Displays hourly information about memory and paging over the past day (24 hours).
	Memory Paging Status (historical report indicating information about memory and paging (1 hour))	Displays minute-by-minute information about memory and paging over the past hour.
	Memory Used Status (real-time report indicating the physical memory usage status in the system)	Displays the current physical memory usage status in the system.
	Memory Used Status (historical report indicating the physical memory usage status in the system (1 day))	Displays the hourly physical memory usage status in the system over the past day (24 hours).
	Memory Used Status (historical report indicating the physical memory usage status in the system (1 hour))	Displays the minute-by-minute physical memory usage status in the system over the past hour.
	Memory Used Status (Multi-Agent) (historical report indicating the physical memory usage status in multiple systems (1 month))	Displays the daily physical memory usage status in multiple systems over the past month.

Category	Report name	Displayed information
	Memory Used Status (Multi-Agent) (historical report indicating the physical memory usage status in multiple systems (1 day))	Displays the hourly physical memory usage status in multiple systems over the past day (24 hours).
	Pool Nonpaged Status (real-time report indicating the size of the physical memory in the system that cannot be paged out)	Displays the current size of the physical memory in the system that cannot be paged out.
	Pool Nonpaged Status (historical report indicating the size of the physical memory in the system that cannot be paged out)	Displays the minute-by-minute size of the physical memory in the system that cannot be paged out over the past hour.

Avg Disk Time Status (real-time report indicating the average I/O time for the physical disk)

Overview

The Avg Disk Time Status report displays the current average I/O operation time for the physical disk. The display format is a bar graph.

Storage location

/RM Platform/Status Reporting/Real-Time

Record

PI_PDSK

Fields

Table 4-21: Description of fields (Avg Disk Time Status (Real-time report indicating the average I/O time for the physical disk))

Field name	Description
Avg Disk Time	Average disk I/O operation time (seconds)
ID	In Windows: Physical disk number In UNIX: Device name
Polling Time	Time the performance data was collected on the PFM - RM host
Read Counts/sec	Disk read processing speed (times/second)
Read MBytes/sec	Speed of data transfer to the disk during read processing (megabytes/second)
Target Host Time	Time the performance data was collected on the monitored host
Total Counts/sec	Disk read and write processing speed (times/second)
Total MBytes/sec	Speed of data transfer between disks during read and write processing (megabytes/second)
Write Counts/sec	Disk write processing speed (times/second)
Write MBytes/sec	Speed of data transfer to the disk during write processing (megabytes/second)

Avg Disk Time Status (historical report indicating the average I/O time for the physical disk)

Overview

The Avg Disk Time Status report displays minute-by-minute the average I/O operation time for the physical disk over the past hour. The display format is a bar graph.

Storage location

/RM Platform/Troubleshooting/Recent Past

Record

PI_PDSK

Fields

Table 4-22: Description of fields (Avg Disk Time Status (historical report indicating the average I/O time for the physical disk))

Field name	Description
Avg Disk Time	Average disk I/O operation time (seconds)
ID	In Windows: Physical disk number In UNIX: Device name
Polling Time	Time the performance data was collected on the PFM - RM host
Read Counts/sec	Disk read processing speed (times/second)
Read MBytes/sec	Speed of data transfer to the disk during read processing (megabytes/second)
Target Host Time	Time the performance data was collected on the monitored host
Total Counts/sec	Disk read and write processing speed (times/second)
Total MBytes/sec	Speed of data transfer between disks during read and write processing (megabytes/second)
Write Counts/sec	Disk write processing speed (times/second)
Write MBytes/sec	Speed of data transfer to the disk during write processing (megabytes/second)

CPU Per Processor Status (real-time report indicating the processor usage rate for each processor)

Overview

The CPU Per Processor Status report displays the current processor usage rate for each processor. The display format is a stacked bar graph.

Storage location

/RM Platform/Troubleshooting/Real-Time

Record

PI_CPU

Fields

Table 4-23: Description of fields (CPU Per Processor Status (real-time report indicating the processor usage rate for each processor))

Field name	Description
CPU %	Processor's CPU usage rate (%)
ID	Processor ID
Idle %	Percentage of the time the processor was in idle status (%)
Interrupt Counts/sec	<p>In Windows: Frequency of hardware interrupt reception processing performed by the processor (times/second); <i>hardware</i> refers to devices that generate interrupts, such as the system clock, mouse, disk driver, data communication line, NIC, and other peripheral devices. This value does not include DPC (delayed procedure call) interrupts. Normally, if the value of this field increases greatly while there is no system activity, a hardware problem is suspected (such as a slow device).</p> <p>In UNIX: Frequency of interrupts (times/second)</p>
Polling Time	Time the performance data was collected on the PFM - RM host
System %	Usage rate for a processor that was executed in the kernel mode (%)
Target Host Time	Time the performance data was collected on the monitored host
User %	Usage rate for a processor that was executed in the user mode (%)
Wait %	Percentage of the time the processor was in I/O wait status (%)

CPU Used Status (real-time report indicating the CPU usage status)

Overview

The CPU Used Status report displays the current CPU usage status in the system. The display format is a line graph.

Storage location

/RM Platform/Status Reporting/Real-Time

Record

PI

Fields

Table 4-24: Description of fields (CPU Used Status (real-time report indicating the CPU usage status))

Field name	Description
Active CPUs	Number of processors
CPU %	Processor usage rate (%). This is also the average value for all processors.
Idle %	Percentage of the time the processor was in idle status (%). This is also the average value for all processors.
Interrupt Counts/sec	<p>In Windows: Frequency of hardware interrupt reception processing performed by the processor (times/second); <i>hardware</i> refers to devices that generate interrupts, such as system clock, mouse, disk driver, data communication line, NIC, and other peripheral devices. This value does not include DPC (delayed procedure call) interrupts. Normally, if the value of this field increases greatly while there is no system activity, a hardware problem is suspected (such as a slow device).</p> <p>In UNIX: Frequency of interrupts (times/second)</p>
Polling Time	Time the performance data was collected on the PFM - RM host
Processor Queue Length	Number of requests ready for execution that are waiting in the processor queue for processor time. Normally, if the queue length exceeds 2 continuously, the processor is busy.
Run Queue Avg 5 min	<p>Average number of threads waiting in the execution queue for the past 5 minutes.</p> <p>In the case of UNIX (HP-UX, Solaris, and AIX), this value does not include the number of threads waiting for I/O. In Linux, this value does contain the number of threads waiting for I/O.</p>

CPU Used Status (real-time report indicating the CPU usage status)

Field name	Description
System %	Usage rate for a processor that was executed in the kernel mode (%). This is also the average value for all processors.
Target Host Time	Time the performance data was collected on the monitored host
User %	Usage rate for a processor that was executed in the user mode (%). This is also the average value for all processors.
Wait %	Percentage of the time the processor was in I/O wait status (%). This is also the average value for all processors.

Drilldown report (report level)

Table 4-25: Description of drilldown report (report level) (CPU Used Status (real-time report indicating the CPU usage status))

Report name	Description
CPU Per Processor Status	Displays the current processor usage rate for each processor.

CPU Used Status (historical report indicating the CPU usage status (1 month))

Overview

The `CPU Used Status` report displays the daily CPU usage status over the past month. The display format is a line graph.

Storage location

`/RM Platform/Monthly Trend`

Record

PI

Fields

Table 4-26: Description of fields (CPU Used Status (historical report indicating the CPU usage status (1 month)))

Field name	Description
Active CPUs	Number of processors
CPU %	Processor usage rate (%). This is also the average value for all processors.
System %	Usage rate for a processor that was executed in the kernel mode (%). This is also the average value for all processors.
User %	Usage rate for a processor that was executed in the user mode (%). This is also the average value for all processors.

CPU Used Status (historical report indicating the CPU usage status (1 hour))

Overview

The `CPU Used Status` report displays the minute-by-minute CPU usage status over the past hour. The display format is a line graph.

Storage location

`/RM Platform/Troubleshooting/Recent Past`

Record

PI

Fields

Table 4-27: Description of fields (CPU Used Status (historical report indicating the CPU usage status (1 hour)))

Field name	Description
Active CPUs	Number of processors
CPU %	Processor usage rate (%). This is also the average value for all processors.
Idle %	Percentage of the time the processor was in idle status (%). This is also the average value for all processors.
Interrupt Counts/sec	<p>In Windows: Frequency of hardware interrupt reception processing performed by the processor (times/second); <i>hardware</i> refers to devices that generate interrupts, such as system clock, mouse, disk driver, data communication line, NIC, and other peripheral devices. This value does not include DPC (delayed procedure call) interrupts. Normally, if the value of this field increases greatly while there is no system activity, a hardware problem is suspected (such as a slow device).</p> <p>In UNIX: Frequency of interrupts (times/second)</p>
Polling Time	Time the performance data was collected on the PFM - RM host
Processor Queue Length	Number of requests ready for execution that are waiting in the processor queue for processor time. Normally, if the queue length exceeds 2 continuously, the processor is busy.

Field name	Description
Run Queue Avg 5 min	Average number of threads waiting in the execution queue for the past 5 minutes. In the case of UNIX (HP-UX, Solaris, and AIX), this value does not include the number of threads waiting for I/O. In Linux, this value does contain the number of threads waiting for I/O.
System %	Usage rate for a processor that was executed in the kernel mode (%). This is also the average value for all processors.
Target Host Time	Time the performance data was collected on the monitored host
User %	Usage rate for a processor that was executed in the user mode (%). This is also the average value for all processors.
Wait %	Percentage of the time the processor was in I/O wait status (%). This is also the average value for all processors.

CPU Used Status (Multi-Agent) (historical report indicating the CPU usage status in multiple systems (1 month))

Overview

The CPU Used Status (Multi-Agent) report displays the daily CPU usage status in multiple systems over the past month. The display format is a line graph.

Storage location

/RM Platform/Monthly Trend

Record

PI

Fields

Table 4-28: Description of fields (CPU Used Status (Multi-Agent) (historical report indicating the CPU usage status in multiple systems (1 month)))

Field name	Description
Active CPUs	Number of processors
Agent Host	Identifier including the name of the host where PFM - RM for Platform is running
CPU %	Processor usage rate (%). This is also the average value for all processors.
System %	Usage rate for a processor that was executed in the kernel mode (%). This is also the average value for all processors.
User %	Usage rate for a processor that was executed in the user mode (%). This is also the average value for all processors.

Drilldown report (report level)

Table 4-29: Description of drilldown report (report level) (CPU Used Status (Multi-Agent) (historical report indicating the CPU usage status in multiple systems (1 month)))

Report name	Description
CPU Used Status	Displays the minute-by-minute CPU usage status in the system over the past hour.

CPU Used Status (Multi-Agent) (historical report indicating the CPU usage status in multiple systems (1 day))

Overview

The CPU Used Status (Multi-Agent) report displays the hourly CPU usage status in multiple systems over the past day (24 hours). The display format is a line graph.

Storage location

/RM Platform/Status Reporting/Daily Trend

Record

PI

Fields

Table 4-30: Description of fields (CPU Used Status (Multi-Agent) (historical report indicating the CPU usage status in multiple systems (1 day)))

Field name	Description
Active CPUs	Number of processors
Agent Host	Identifier including the name of the host where PFM - RM for Platform is running
CPU %	Processor usage rate (%). This is also the average value for all processors.
Idle %	Percentage of the time the processor was in idle status (%). This is also the average value for all processors.
Interrupt Counts/sec	<p>In Windows: Frequency of hardware interrupt reception processing performed by the processor (times/second); <i>hardware</i> refers to devices that generate interrupts, such as system clock, mouse, disk driver, data communication line, NIC, and other peripheral devices. This value does not include DPC (delayed procedure call) interrupts. Normally, if the value of this field increases greatly while there is no system activity, a hardware problem is suspected (such as a slow device).</p> <p>In UNIX: Frequency of interrupts (times/second)</p>
Processor Queue Length	Number of requests ready for execution that are waiting in the processor queue for processor time. Normally, if the queue length exceeds 2 continuously, the processor is busy.
System %	Usage rate for a processor that was executed in the kernel mode (%). This is also the average value for all processors.

CPU Used Status (Multi-Agent) (historical report indicating the CPU usage status in multiple systems (1 day))

Field name	Description
User %	Usage rate for a processor that was executed in the user mode (%). This is also the average value for all processors.
Wait %	Percentage of the time the processor was in I/O wait status (%). This is also the average value for all processors.

Free Megabytes - Logical Disk (real-time report indicating the available area on the logical disk)

Overview

The Free Megabytes - Logical Disk report displays information about the area that is currently available on the logical disk. The display format is a bar graph.

Storage location

/RM Platform/Status Reporting/Real-Time

Record

PI_LDSK

Fields

Table 4-31: Description of fields (Free Megabytes - Logical Disk (real-time report indicating the available area on the logical disk))

Field name	Description
Device Name	Device name
Free Mbytes	Size of the unused area (megabytes)
Free Mbytes %	Percentage of unused area (%)
ID	In Windows: Logical disk volume name In UNIX: Mount point of the file system
Polling Time	Time the performance data was collected on the PFM - RM host
Size	Disk size (megabytes)
Target Host Time	Time the performance data was collected on the monitored host

Free Megabytes - Logical Disk (historical report indicating the available area on the logical disk)

Overview

The `Free Megabytes - Logical Disk` report displays minute-by-minute information about the area that is available on the logical disk over the past hour. The display format is a bar graph.

Storage location

/RM Platform/Troubleshooting/Recent Past

Record

PI_LDSK

Fields

Table 4-32: Description of fields (Free Megabytes - Logical Disk (historical report indicating the available area on the logical disk))

Field name	Description
Device Name	Device name
Free Mbytes	Size of unused area (megabytes)
Free Mbytes %	Percentage of unused area (%)
ID	In Windows: Logical disk volume name In UNIX: Mount point of the file system
Polling Time	Time the performance data was collected on the PFM - RM host
Size	Disk size (megabytes)
Target Host Time	Time the performance data was collected on the monitored host

Memory Paging Status (real-time report indicating information about memory and paging)

Overview

The Memory Paging Status report displays current information about memory and paging. The display format is a line graph.

Storage location

/RM Platform/Troubleshooting/Real-Time

Record

PI

Fields

Table 4-33: Description of fields (Memory Paging Status (real-time report indicating information about memory and paging))

Field name	Description
Free Swap %	In Windows: Percentage of unused space in the virtual memory area (%) In UNIX: Percentage of unused space in the swap area (%)
Free Swap Mbytes	In Windows: Size of the unused space in the virtual memory area (megabytes) In UNIX: Size of the unused space in the swap area (megabytes)
Page Fault Counts/sec	Frequency of page faults (times/second)
Page-In Pages/sec	Rate at which pages were paged in (pages/second)
Page-Out Pages/sec	Rate at which pages were paged out (pages/second)
Page Scan Counts/sec	Frequency of page scans (times/second)
Paging Pages/sec	Rate at which pages were being paged in and out when a page fault occurred (pages/second). This is the total of the Page-In Pages/sec and Page-Out Pages/sec fields. If this value exceeds 5 continuously, the memory may be the bottleneck in the system.
Polling Time	Time the performance data was collected on the PFM - RM host
Target Host Time	Time the performance data was collected on the monitored host

Memory Paging Status (real-time report indicating information about memory and paging)

Field name	Description
Total Swap Mbytes	In Windows: Size of the virtual memory area (megabytes) In UNIX: Size of the swap area (megabytes)
Used Swap %	In Windows: Virtual memory usage rate (%) In UNIX: Swap area usage rate (%)
Used Swap Mbytes	In Windows: Size of the virtual memory area used (committed) (megabytes) In UNIX: Size of the swap area used (megabytes)

Memory Paging Status (historical report indicating information about memory and paging (1 day))

Overview

The Memory Paging Status report displays hourly information about memory and paging over the past day (24 hours). The display format is a line graph.

Storage location

/RM Platform/Status Reporting/Daily Trend

Record

PI

Fields

Table 4-34: Description of fields (Memory Paging Status (historical report indicating information about memory and paging (1 day)))

Field name	Description
Free Swap %	In Windows: Percentage of unused space in the virtual memory area (%) In UNIX: Percentage of unused space in the swap area (%)
Free Swap Mbytes	In Windows: Size of the unused space in the virtual memory area (megabytes) In UNIX: Size of the unused space in the swap area (megabytes)
Page Fault Counts/ sec	Frequency of page faults (times/second)
Page-In Pages/sec	Rate at which pages were paged in (pages/second)
Page-Out Pages/sec	Rate at which pages were paged out (pages/second)
Page Scan Counts/ sec	Frequency of page scans (times/second)
Paging Pages/sec	Rate at which pages were being paged in and out when a page fault occurred (pages/second). This is the total of the Page-In Pages/sec and Page-Out Pages/sec fields. If this value exceeds 5 continuously, the memory may be the bottleneck in the system.

Memory Paging Status (historical report indicating information about memory and paging (1 day))

Field name	Description
Total Swap Mbytes	In Windows: Size of the virtual memory area (megabytes) In UNIX: Size of the swap area (megabytes)
Used Swap %	In Windows: Virtual memory usage rate (%) In UNIX: Swap area usage rate (%)
Used Swap Mbytes	In Windows: Size of the virtual memory area used (committed) (megabytes) In UNIX: Size of the swap area used (megabytes)

Memory Paging Status (historical report indicating information about memory and paging (1 hour))

Overview

The Memory Paging Status report displays minute-by-minute information about memory and paging over the past hour. The display format is a line graph.

Storage location

/RM Platform/Troubleshooting/Recent Past

Record

PI

Fields

Table 4-35: Description of fields (Memory Paging Status (historical report indicating information about memory and paging (1 hour)))

Field name	Description
Free Swap %	In Windows: Percentage of unused space in the virtual memory area (%) In UNIX: Percentage of unused space in the swap area (%)
Free Swap Mbytes	In Windows: Size of the unused space in the virtual memory area (megabytes) In UNIX: Size of the unused space in the swap area (megabytes)
Page Fault Counts/ sec	Frequency of page faults (times/second)
Page-In Pages/sec	Rate at which pages were paged in (pages/second)
Page-Out Pages/sec	Rate at which pages were paged out (pages/second)
Page Scan Counts/ sec	Frequency of page scans (times/second)
Paging Pages/sec	Rate at which pages were being paged in and out when a page fault occurred (pages/second). This is the total of the Page-In Pages/sec and Page-Out Pages/sec fields. If this value exceeds 5 continuously, the memory may be the bottleneck in the system.
Polling Time	Time the performance data was collected on the PFM - RM host

Memory Paging Status (historical report indicating information about memory and paging (1 hour))

Field name	Description
Target Host Time	Time the performance data was collected on the monitored host
Total Swap Mbytes	In Windows: Size of the virtual memory area (megabytes) In UNIX: Size of the swap area (megabytes)
Used Swap %	In Windows: Virtual memory usage rate (%) In UNIX: Swap area usage rate (%)
Used Swap Mbytes	In Windows: Size of the virtual memory area used (committed) (megabytes) In UNIX: Size of the swap area used (megabytes)

Memory Used Status (real-time report indicating the physical memory usage status in the system)

Overview

The `Memory Used Status` report displays the current physical memory usage status in the system. The display format is a line graph.

Storage location

/RM Platform/Troubleshooting/Real-Time

Record

PI

Fields

Table 4-36: Description of fields (Memory Used Status (real-time report indicating the physical memory usage status in the system))

Field name	Description
Free Mem %	Percentage of the physical memory size actually available to applications (%)
Free Mem Mbytes	Size of the physical memory actually available to applications (megabytes)
Free Swap %	In Windows: Percentage of unused space in the virtual memory area (%) In UNIX: Percentage of unused space in the swap area (%)
Free Swap Mbytes	In Windows: Size of the unused space in the virtual memory area (megabytes) In UNIX: Size of the unused space in the swap area (megabytes)
Page Fault Counts/sec	Frequency of page faults (times/second)
Page-In Pages/sec	Rate at which pages were paged in (pages/second)
Page-Out Pages/sec	Rate at which pages were paged out (pages/second)
Page Scan Counts/sec	Frequency of page scans (times/second)
Paging Pages/sec	Rate at which pages were being paged in and out when a page fault occurred (pages/second). This is the total of the Page-In Pages/sec and Page-Out Pages/sec fields. If this value exceeds 5 continuously, the memory may be the bottleneck in the system.

Memory Used Status (real-time report indicating the physical memory usage status in the system)

Field name	Description
Polling Time	Time the performance data was collected on the PFM - RM host
Target Host Time	Time the performance data was collected on the monitored host
Total Mem Mbytes	Size of the physical memory (megabytes)
Total Swap Mbytes	In Windows: Size of the virtual memory area (megabytes) In UNIX: Size of the swap area (megabytes)
Used Mem %	Physical memory usage rate (%)
Used Mem Mbytes	Size of the physical memory area used (megabytes)
Used Swap %	In Windows: Virtual memory usage rate (%) In UNIX: Swap area usage rate (%)
Used Swap Mbytes	In Windows: Size of the virtual memory area used (committed) (megabytes) In UNIX: Size of the swap area used (megabytes)

Memory Used Status (historical report indicating the physical memory usage status in the system (1 day))

Overview

The `Memory Used Status` report displays the hourly physical memory usage status in the system over the past day (24 hours). The display format is a line graph.

Storage location

/RM Platform/Status Reporting/Daily Trend

Record

PI

Fields

Table 4-37: Description of fields (Memory Used Status (historical report indicating the physical memory usage status in the system (1 day)))

Field name	Description
Free Mem %	Percentage of the physical memory size actually available to applications (%)
Free Mem Mbytes	Size of the physical memory actually available to applications (megabytes)
Free Swap %	In Windows: Percentage of unused space in the virtual memory area (%) In UNIX: Percentage of unused space in the swap area (%)
Free Swap Mbytes	In Windows: Size of the unused space in the virtual memory area (megabytes) In UNIX: Size of the unused space in the swap area (megabytes)
Page Fault Counts/sec	Frequency of page faults (times/second)
Page-In Pages/sec	Rate at which pages were paged in (pages/second)
Page-Out Pages/sec	Rate at which pages were paged out (pages/second)
Page Scan Counts/sec	Frequency of page scans (times/second)
Paging Pages/sec	Rate at which pages were being paged in and out when a page fault occurred (pages/second). This is the total of the Page-In Pages/sec and Page-Out Pages/sec fields. If this value exceeds 5 continuously, the memory may be the bottleneck in the system.

Memory Used Status (historical report indicating the physical memory usage status in the system (1 day))

Field name	Description
Total Mem Mbytes	Size of the physical memory (megabytes)
Total Swap Mbytes	In Windows: Size of the virtual memory area (megabytes) In UNIX: Size of the swap area (megabytes)
Used Mem %	Physical memory usage rate (%)
Used Mem Mbytes	Size of the physical memory area used (megabytes)
Used Swap %	In Windows: Virtual memory usage rate (%) In UNIX: Swap area usage rate (%)
Used Swap Mbytes	In Windows: Size of the virtual memory area used (committed) (megabytes) In UNIX: Size of the swap area used (megabytes)

Memory Used Status (historical report indicating the physical memory usage status in the system (1 hour))

Overview

The `Memory Used Status` report displays the minute-by-minute physical memory usage status in the system over the past hour. The display format is a line graph.

Storage location

`/RM Platform/Troubleshooting/Recent Past`

Record

PI

Fields

Table 4-38: Description of fields (Memory Used Status (historical report indicating the physical memory usage status in the system (1 hour)))

Field name	Description
Free Mem %	Percentage of the physical memory size actually available to applications (%)
Free Mem Mbytes	Size of the physical memory actually available to applications (megabytes)
Free Swap %	In Windows: Percentage of unused space in the virtual memory area (%) In UNIX: Percentage of unused space in the swap area (%)
Free Swap Mbytes	In Windows: Size of the unused space in the virtual memory area (megabytes) In UNIX: Size of the unused space in the swap area (megabytes)
Page Fault Counts/sec	Frequency of page faults (times/second)
Page-In Pages/sec	Rate at which pages were paged in (pages/second)
Page-Out Pages/sec	Rate at which pages were paged out (pages/second)
Page Scan Counts/sec	Frequency of page scans (times/second)
Paging Pages/sec	Rate at which pages were being paged in and out when a page fault occurred (pages/second). This is the total of the Page-In Pages/sec and Page-Out Pages/sec fields. If this value exceeds 5 continuously, the memory may be the bottleneck in the system.

Memory Used Status (historical report indicating the physical memory usage status in the system (1 hour))

Field name	Description
Polling Time	Time the performance data was collected on the PFM - RM host
Target Host Time	Time the performance data was collected on the monitored host
Total Mem Mbytes	Size of the physical memory (megabytes)
Total Swap Mbytes	In Windows: Size of the virtual memory area (megabytes) In UNIX: Size of the swap area (megabytes)
Used Mem %	Physical memory usage rate (%)
Used Mem Mbytes	Size of the physical memory area used (megabytes)
Used Swap %	In Windows: Virtual memory usage rate (%) In UNIX: Swap area usage rate (%)
Used Swap Mbytes	In Windows: Size of the virtual memory area used (committed) (megabytes) In UNIX: Size of the swap area used (megabytes)

Memory Used Status (Multi-Agent) (historical report indicating the physical memory usage status in multiple systems (1 month))

Overview

The `Memory Used Status (Multi-Agent)` report displays the daily physical memory usage status in multiple systems over the past month. The display format is a stacked bar graph.

Storage location

`/RM Platform/Monthly Trend`

Record

PI

Fields

Table 4-39: Description of fields (`Memory Used Status (Multi-Agent)` (historical report indicating the physical memory usage status in multiple systems (1 month)))

Field name	Description
Agent Host	Identifier including the name of the host where PFM - RM for Platform is running
Free Mem %	Percentage of the physical memory size actually available to applications (%)
Free Mem Mbytes	Size of the physical memory actually available to applications (megabytes)
Total Mem Mbytes	Size of the physical memory (megabytes)
Used Mem %	Physical memory usage rate (%)
Used Mem Mbytes	Size of the physical memory area used (megabytes)

Memory Used Status (Multi-Agent) (historical report indicating the physical memory usage status in multiple systems (1 day))

Overview

The Memory Used Status (Multi-Agent) report displays the hourly physical memory usage status in multiple systems over the past day (24 hours). The display format is a stacked bar graph.

Storage location

/RM Platform/Status Reporting/Daily Trend

Record

PI

Fields

Table 4-40: Description of fields (Memory Used Status (Multi-Agent) (historical report indicating the physical memory usage status in multiple systems (1 day)))

Field name	Description
Agent Host	Identifier including the name of the host where PFM - RM for Platform is running
Free Mem %	Percentage of the physical memory size actually available to applications (%)
Free Mem Mbytes	Size of the physical memory actually available to applications (megabytes)
Free Swap %	In Windows: Percentage of unused space in the virtual memory area (%) In UNIX: Percentage of unused space in the swap area (%)
Free Swap Mbytes	In Windows: Size of the unused space in the virtual memory area (megabytes) In UNIX: Size of the unused space in the swap area (megabytes)
Page-In Pages/sec	Rate at which pages were paged in (pages/second)
Page-Out Pages/sec	Rate at which pages were paged out (pages/second)
Page Scan Counts/sec	Frequency of page scans (times/second)
Used Mem %	Physical memory usage rate (%)

Memory Used Status (Multi-Agent) (historical report indicating the physical memory usage status in multiple systems (1 day))

Field name	Description
Used Mem Mbytes	Size of the physical memory area used (megabytes)

Network Data (real-time report indicating the status of communication between networks)

Overview

The `Network Data` report displays the current status of communication between networks. The display format is a line graph.

Storage location

`/RM Platform/Troubleshooting/Real-Time`

Record

`PI_NET`

Fields

Table 4-41: Description of fields (Network Data (real-time report indicating the status of communication between networks))

Field name	Description
ID	Instance name of the network
Max Transmission Unit	Maximum packet size (bytes)
Polling Time	Time the performance data was collected on the PFM - RM host
Rcvd Bytes/sec	Rate of data received by the network interface (bytes/second)
Rcvd Packets/sec	Rate of packets received by the network interface (packets/second)
Sent Bytes/sec	Rate of data sent by the network interface (bytes/second)
Sent Packets/sec	Rate of packets sent by the network interface (packets/second)
Target Host Time	Time the performance data was collected on the monitored host
Total Bytes/sec	Rate of data sent and received by the network interface (bytes/second)
Total Packets/sec	Rate of packets sent and received by the network interface (packets/second)

Network Data (historical report indicating the status of communication between networks)

Overview

The `Network Data` report displays the minute-by-minute status of communication between networks over the past hour. The display format is a line graph.

Storage location

`/RM Platform/Troubleshooting/Recent Past`

Record

`PI_NET`

Fields

Table 4-42: Description of fields (Network Data (historical report indicating the status of communication between networks))

Field name	Description
ID	Instance name of the network
Max Transmission Unit	Maximum packet size (bytes)
Polling Time	Time the performance data was collected on the PFM - RM host
Rcvd Bytes/sec	Rate of data received by the network interface (bytes/second)
Rcvd Packets/sec	Rate of packets received by the network interface (packets/second)
Sent Bytes/sec	Rate of data sent by the network interface (bytes/second)
Sent Packets/sec	Rate of packets sent by the network interface (packets/second)
Target Host Time	Time the performance data was collected on the monitored host
Total Bytes/sec	Rate of data sent and received by the network interface (bytes/second)
Total Packets/sec	Rate of packets sent and received by the network interface (packets/second)

Physical Disk Busy Status (real-time report indicating the length of time the disk was busy)

Overview

The Physical Disk Busy Status report displays the percentage of time the current disk was busy. The display format is a bar graph.

Storage location

/RM Platform/Troubleshooting/Real-Time

Record

PI_PDSK

Fields

Table 4-43: Description of fields (Physical Disk Busy Status (real-time report indicating the length of time the disk was busy))

Field name	Description
Busy %	Percentage of the time the disk was busy during read and write request processing. In UNIX, this value may exceed 100 when device processing is executed continuously.
ID	In Windows: Physical disk number In UNIX: Device name
Polling Time	Time the performance data was collected on the PFM - RM host
Queue Length	In Windows: Average number of read and write requests placed in the disk queue In UNIX: Length of the device queue. A one-second volume of I/O processing is indicated as 1.
Read Counts/sec	Disk read processing speed (times/second)
Read MBytes/sec	Speed of data transfer to the disk during read processing (megabytes/second)
Target Host Time	Time the performance data was collected on the monitored host
Total Counts/sec	Disk read and write processing speed (times/second)

Field name	Description
Total MBytes/sec	Speed of data transfer between disks during read and write processing (megabytes/second)
Write Counts/sec	Disk write processing speed (times/second)
Write MBytes/sec	Speed of data transfer to the disk during write processing (megabytes/second)

Physical Disk Busy Status (historical report indicating the length of time the disk was busy)

Overview

The Physical Disk Busy Status report displays minute-by-minute information about the percentage of time the disk was busy over the past hour. The display format is a bar graph.

Storage location

/RM Platform/Troubleshooting/Recent Past

Record

PI_PDSK

Fields

Table 4-44: Description of fields (Physical Disk Busy Status (historical report indicating the length of time the disk was busy))

Field name	Description
Busy %	Percentage of time the disk was busy during read and write request processing. In UNIX, this value may exceed 100 when device processing is executed continuously.
ID	In Windows: Physical disk number In UNIX: Device name
Polling Time	Time the performance data was collected on the PFM - RM host
Queue Length	In Windows: Average number of read and write requests placed in the disk queue In UNIX: Length of the device queue. A one-second volume of I/O processing is indicated as 1.
Read Counts/sec	Disk read processing speed (times/second)
Read MBytes/sec	Speed of data transfer to the disk during read processing (megabytes/second)
Target Host Time	Time the performance data was collected on the monitored host
Total Counts/sec	Disk read and write processing speed (times/second)

Field name	Description
Total MBytes/sec	Speed of data transfer between disks during read and write processing (megabytes/second)
Write Counts/sec	Disk write processing speed (times/second)
Write MBytes/sec	Speed of data transfer to the disk during write processing (megabytes/second)

Pool Nonpaged Status (real-time report indicating the size of physical memory in the system that cannot be paged out)

Overview

The Pool Nonpaged Status report displays the current size of the physical memory in the system that cannot be paged out. The display format is a line graph.

Storage location

/RM Platform/Troubleshooting/Real-Time

Record

PI

Fields

Table 4-45: Description of fields (Pool Nonpaged Status (real-time report indicating the size of physical memory in the system that cannot be paged out))

Field name	Description
Free Mem %	Percentage of the physical memory size actually available to applications (%)
Free Mem Mbytes	Size of the physical memory actually available to applications (megabytes)
Free Swap %	In Windows: Percentage of unused space in the virtual memory area (%) In UNIX: Percentage of unused space in the swap area (%)
Free Swap Mbytes	In Windows: Size of the unused space in the virtual memory area (megabytes) In UNIX: Size of the unused space in the swap area (megabytes)
Page Fault Counts/sec	Frequency of page faults (times/second)
Paging Pages/sec	Rate at which pages were being paged in and out when a page fault occurred (pages/second). This is the total of the Page-In Pages/sec and Page-Out Pages/sec fields. If this value exceeds 5 continuously, the memory might be the bottleneck in the system.
Polling Time	Time the performance data was collected on the PFM - RM host

Pool Nonpaged Status (real-time report indicating the size of physical memory in the system that cannot be paged out)

Field name	Description
Pool Nonpaged KBytes	Size of the physical memory that cannot be paged out and that was used to allocate area when system components executed tasks (kilobytes). Normally, if server activity has not increased but the value of this field keeps increasing, a process that causes a memory leak might be executing.
Target Host Time	Time the performance data was collected on the monitored host
Total Mem Mbytes	Size of the physical memory (megabytes)
Total Swap Mbytes	In Windows: Size of the virtual memory area (megabytes) In UNIX: Size of the swap area (megabytes)
Used Mem %	Physical memory usage rate (%)
Used Mem Mbytes	Size of the physical memory area used (megabytes)
Used Swap %	In Windows: Virtual memory usage rate (%) In UNIX: Swap area usage rate (%)
Used Swap Mbytes	In Windows: Size of the virtual memory area used (committed) (megabytes) In UNIX: Size of the swap area used (megabytes)

Pool Nonpaged Status (historical report indicating the size of physical memory in the system that cannot be paged out)

Overview

The `Pool Nonpaged Status` report displays the minute-by-minute size of the physical memory in the system that cannot be paged out over the past hour. The display format is a line graph.

Storage location

`/RM Platform/Troubleshooting/Recent Past`

Record

PI

Fields

Table 4-46: Description of fields (Pool Nonpaged Status (historical report indicating the size of physical memory in the system that cannot be paged out))

Field name	Description
Free Mem %	Percentage of the physical memory size actually available to applications (%)
Free Mem Mbytes	Size of the physical memory actually available to applications (megabytes)
Free Swap %	In Windows: Percentage of unused space in the virtual memory area (%) In UNIX: Percentage of unused space in the swap area (%)
Free Swap Mbytes	In Windows: Size of the unused space in the virtual memory area (megabytes) In UNIX: Size of the unused space in the swap area (megabytes)
Page Fault Counts/sec	Frequency of page faults (times/second)
Paging Pages/sec	Rate at which pages were being paged in and out when a page fault occurred (pages/second). This is the total of the Page-In Pages/sec and Page-Out Pages/sec fields. If this value exceeds 5 continuously, the memory might be the bottleneck in the system.
Polling Time	Time the performance data was collected on the PFM - RM host

Field name	Description
Pool Nonpaged KBytes	Size of the physical memory that cannot be paged out and that was used to allocate area when system components executed tasks (kilobytes). Normally, if server activity has not increased but the value of this field keeps increasing, a process that causes a memory leak might be executing.
Target Host Time	Time the performance data was collected on the monitored host
Total Mem Mbytes	Size of the physical memory (megabytes)
Total Swap Mbytes	In Windows: Size of the virtual memory area (megabytes) In UNIX: Size of the swap area (megabytes)
Used Mem %	Physical memory usage rate (%)
Used Mem Mbytes	Size of the physical memory area used (megabytes)
Used Swap %	In Windows: Virtual memory usage rate (%) In UNIX: Swap area usage rate (%)
Used Swap Mbytes	In Windows: Size of the virtual memory area used (committed) (megabytes) In UNIX: Size of the swap area used (megabytes)

System Overview (real-time report indicating the system operation status)

Overview

The System Overview report displays the current operation status of the system. The display format is a line graph.

Storage location

/RM Platform/Troubleshooting/Real-Time

Record

PI

Fields

Table 4-47: Description of fields (System Overview (real-time report indicating the system operation status))

Field name	Description
Active CPUs	Number of processors
CPU %	Processor usage rate (%). This is also the average value for all processors.
Free Mem %	Percentage of the physical memory size actually available to applications (%)
Free Mem Mbytes	Size of the physical memory actually available to applications (megabytes)
Free Swap %	In Windows: Percentage of unused space in the virtual memory area (%) In UNIX: Percentage of unused space in the swap area (%)
Free Swap Mbytes	In Windows: Size of the unused space in the virtual memory area (megabytes) In UNIX: Size of the unused space in the swap area (megabytes)
Idle %	Percentage of the time the processor was in idle status (%). This is also the average value for all processors.
Page Fault Counts/sec	Frequency of page faults (times/second)
Page Scan Counts/sec	Frequency of page scans (times/second)

Field name	Description
Paging Pages/sec	Rate at which pages were being paged in and out when a page fault occurred (pages/second). This is the total of the Page-In Pages/sec and Page-Out Pages/sec fields. If this value exceeds 5 continuously, the memory might be the bottleneck in the system.
Polling Time	Time the performance data was collected on the PFM - RM host
Pool Nonpaged KBytes	Size of the physical memory that cannot be paged out and that was used to allocate area when system components executed tasks (kilobytes). Normally, if server activity has not increased but the value of this field keeps increasing, a process that causes a memory leak might be executing.
Run Queue Avg 5 min	Average number of threads waiting in the execution queue for the past 5 minutes. In the case of UNIX (HP-UX, Solaris, and AIX), this value does not include the number of threads waiting for I/O. In Linux, this value does contain the number of threads waiting for I/O.
Swap-In Pages/sec	Frequency of page loading by swap-in processing (pages/second). In AIX, this is the frequency of page loading by swap-in processing only in the paging area (pages/second).
Swap-Out Pages/sec	Frequency of page removal by swap-out processing (pages/second). In AIX, this is the frequency of page removal by swap-out processing only in the paging area (pages/second).
System %	Usage rate for a processor that was executed in the kernel mode (%). This is also the average value for all processors.
Target Host Time	Time the performance data was collected on the monitored host
Total Mem Mbytes	Size of the physical memory (megabytes)
Total Swap Mbytes	In Windows: Size of the virtual memory area (megabytes) In UNIX: Size of the swap area (megabytes)
Used Mem %	Physical memory usage rate (%)
Used Mem Mbytes	Size of the physical memory area used (megabytes)
Used Swap %	In Windows: Virtual memory usage rate (%) In UNIX: Swap area usage rate (%)

System Overview (real-time report indicating the system operation status)

Field name	Description
Used Swap Mbytes	In Windows: Size of the virtual memory area used (committed) (megabytes) In UNIX: Size of the swap area used (megabytes)
User %	Usage rate for a processor that was executed in the user mode (%). This is also the average value for all processors.
Wait %	Percentage of the time the processor was in I/O wait status (%). This is also the average value for all processors.

System Overview (historical report indicating the system operation status)

Overview

The System Overview report displays the minute-by-minute system operation status over the past hour. The display format is a line graph.

Storage location

/RM Platform/Troubleshooting/Recent Past

Record

PI

Fields

Table 4-48: Description of fields (System Overview (historical report indicating the system operation status))

Field name	Description
Active CPUs	Number of processors
CPU %	Processor usage rate (%). This is also the average value for all processors.
Free Mem %	Percentage of the physical memory size actually available to applications (%)
Free Mem Mbytes	Size of the physical memory actually available to applications (megabytes)
Free Swap %	In Windows: Percentage of unused space in the virtual memory area (%) In UNIX: Percentage of unused space in the swap area (%)
Free Swap Mbytes	In Windows: Size of the unused space in the virtual memory area (megabytes) In UNIX: Size of the unused space in the swap area (megabytes)
Idle %	Percentage of the time the processor was in idle status (%). This is also the average value for all processors.
Page Fault Counts/sec	Frequency of page faults (times/second)
Page Scan Counts/sec	Frequency of page scans (times/second)

Field name	Description
Paging Pages/sec	Rate at which pages were being paged in and out when a page fault occurred (pages/second). This is the total of the Page-In Pages/sec and Page-Out Pages/sec fields. If this value exceeds 5 continuously, the memory might be the bottleneck in the system.
Polling Time	Time the performance data was collected on the PFM - RM host
Pool Nonpaged KBytes	Size of the physical memory that cannot be paged out and that was used to allocate area when system components executed tasks (kilobytes). Normally, if server activity has not increased but the value of this field keeps increasing, a process that causes a memory leak might be executing.
Run Queue Avg 5 min	Average number of threads waiting in the execution queue for the past 5 minutes. In the case of UNIX (HP-UX, Solaris, and AIX), this value does not include the number of threads waiting for I/O. In Linux, this value does contain the number of threads waiting for I/O.
Swap-In Pages/sec	Frequency of page loading by swap-in processing (pages/second). In AIX, this is the frequency of page loading by swap-in processing only in the paging area (pages/second).
Swap-Out Pages/sec	Frequency of page removal by swap-out processing (pages/second). In AIX, this is the frequency of page removal by swap-out processing only in the paging area (pages/second).
System %	Usage rate for a processor that was executed in the kernel mode (%). This is also the average value for all processors.
Target Host Time	Time the performance data was collected on the monitored host
Total Mem Mbytes	Size of the physical memory (megabytes)
Total Swap Mbytes	In Windows: Size of the virtual memory area (megabytes) In UNIX: Size of the swap area (megabytes)
Used Mem %	Physical memory usage rate (%)
Used Mem Mbytes	Size of the physical memory area used (megabytes)
Used Swap %	In Windows: Virtual memory usage rate (%) In UNIX: Swap area usage rate (%)

Field name	Description
Used Swap Mbytes	In Windows: Size of the virtual memory area used (committed) (megabytes) In UNIX: Size of the swap area used (megabytes)
User %	Usage rate for a processor that was executed in the user mode (%). This is also the average value for all processors.
Wait %	Percentage of the time the processor was in I/O wait status (%). This is also the average value for all processors.

Drilldown report (field level)

Table 4-49: Description of drilldown report (field level) (System Overview (historical report indicating the system operation status))

Report name	Description
CPU Used Status	Displays the minute-by-minute CPU usage status in the system over the past hour. To display this report, click the CPU % field.

Target Host Status (historical report indicating the status of the connection to the monitored host and information about the OS of the monitored host)

Overview

The `Target Host Status` report displays the minute-by-minute status of the connection to the monitored host and information about the OS of the monitored host over the past hour.

Storage location

`/RM Platform/Troubleshooting/Recent Past`

Record

PD

Fields

Table 4-50: Description of fields (Target Host Status (historical report indicating the status of the connection to the monitored host and information about the OS of the monitored host))

Field name	Description
Detail	Detailed information about the monitored host
OS Type	Name of the OS of the monitored host
Polling Time	Time the performance data was collected on the PFM - RM host
Processor Type	Processor type of the monitored host
Reason	Cause of <code>ERROR</code> in the Status field. If the value of Status field is <code>SUCCESS</code> , this field contains a null character string. When <code>Connection failed</code> is displayed: Connection failed. When <code>Authorization failed</code> is displayed: Authentication failed. When <code>Response invalid</code> is displayed: An unexpected response was received from the server. When <code>Collection error</code> is displayed: A collection error occurred.

Target Host Status (historical report indicating the status of the connection to the monitored host and information about the OS of the monitored host)

Field name	Description
Status	Connection status. When SUCCESS is displayed: Execution is underway. When ERROR is displayed: Connection failed.
Target Host Time	Time the performance data was collected on the monitored host
Version	OS version of the monitored host

Chapter

5. Records

This chapter describes the records for PFM - RM for Platform. For details about how to collect performance data for each 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
- Summarization rules
- Grouping rules
- List of data types
- Field values
- Fields that are added only when a record is recorded in the Store database
- Notes on records
- List of records

Data model

The records and fields of PFM - RM for Platform are referred to collectively as a *data model*. A specific version number is assigned to the data model for PFM - RM for Platform.

For details about the relationship between the PFM - RM for Platform version and the data model version, see *H. Version Compatibility*.

To check the data model version of your PFM - RM for Platform, use the Properties window of PFM - Web Console. To open the Properties window, on the **Agents** page of PFM - Web Console, click the agent icon, and then click the **Properties** method.

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

The records for PFM - RM for Platform are described in this chapter 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 that should be noted.

Default and changeable values

Consists of a table of the default values for the performance data collection conditions that are defined for the record, and indicates whether each value 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 the management of operation monitoring data in the *Job Management Partner 1/Performance Management User's Guide*.

Table 5-1: Default and changeable values (record)

Item	Description	Changeable
Collection Interval	Performance data collection interval (in seconds)	Y: Changeable N: Not changeable
Collection Offset [#]	Delay (offset value) for starting performance data collection (in seconds). For details about the offset value, see the chapter that describes the management of operation monitoring data in the <i>Job Management Partner 1/Performance Management User's Guide</i> . For details about the performance data collection start time, 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: Stored. However, if <code>Collection Interval=0</code> is set, no collected performance data is stored. No: Not stored.	
LOGIF	Conditions for storing collected performance data in the Store database	

#

The value must be in the range from 0 to 32,767 seconds (but within the collection interval specified in `Collection Interval`). This value is used to distribute the workload of collection processing so as to avoid concentration of the workload when multiple data items are collected. Note that the recording time for data collection is the same as for `Collection Interval` regardless of the `Collection Offset` value.

To change the `Collection Offset` value, specify an appropriate value taking into account the workload of collection processing.

ODBC key field

Indicates the ODBC key field that is required in order that the record data stored in the Store database can be used by SQL statements with PFM - Manager. Some ODBC key fields are common to all records, and some are specific to individual records. This section presents the ODBC key field that is specific to each record. Note that only multi-instance records have a specific ODBC key field.

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 the record during a single collection operation.

Fields

Provides a table that describes the record's fields. The table contains the following columns:

- PFM - View name (PFM - Manager name)

PFM - View name

Indicates the field name (PFM - View name) that is displayed with PFM - Web Console.

PFM - Manager name

Indicates the field name (PFM - Manager name) to be specified in SQL statements when statements are used from PFM - Manager to access the field data stored in the Store database.

Specify the record ID at the beginning of an SQL statement. For example, to specify the Polling Time (`POLLING_TIME`) field of the System Status (PD) record, specify `PD_POLLING_TIME`.

■ Description

Describes the performance data that is stored in each field.

The performance data in each field can be obtained in the following ways:

- Obtaining an average or a rate from the current data and the data collected during the previous interval
- Obtaining by using only the current data that has been collected
- Obtaining from the data in other fields

The value obtained at the set data collection interval is used, unless indicated otherwise.

When records of the PI record type are summarized for a historical report with a value other than *minute* specified as the reporting interval, the following types of values can be displayed:

- Average value over the summarized intervals
- Last value collected
- Total value
- Minimum value
- Maximum value

A displayed field value is the average value over the summarized intervals, unless indicated otherwise.

■ Summary rule

Indicates the summarization method used by Remote Monitor Store to summarize the data. This summarization method is referred to as the *summary rules*. For details about the summary rules, see *Summarization rules* in *5. Records*.

■ Grouping rule

Indicates the method for consolidating performance information for remote agents that belong to the same instance. This summarization method is referred to as the *grouping rules*. For details about the grouping rules, see *Grouping rules* in *5. Records*.

■ Format

Indicates the data type of the field's value. For details about the data types, see *List of data types* in this chapter.

■ Delta

Indicates whether the value is a delta value. In contrast to data collected as a cumulative value, data expressed by the amount the value has changed is called *delta*. For details about delta, see *Field values* in this chapter.

■ Unsupported

Indicates the OSs of the monitored host that do not support use of the field.

List of ODBC key fields

Some ODBC key fields are common to all records, and some are specific to individual records. This section presents the ODBC key fields common to all records. With PFM - Manager, ODBC key fields are required in order for you to use SQL statements to access record data stored in the Storage database.

The table below lists the ODBC key fields that are common to all records. For details about the ODBC key fields specific to individual records, see the details for each record.

Table 5-2: List of ODBC key fields common to all records

ODBC key field	ODBC format	Data	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	Indicates one of the following: <ul style="list-style-type: none"> <i>instance-name</i> [<i>monitored-host-name</i>@<i>PFM-RM-host-name</i>] <i>instance-name</i> [<i>all</i>@<i>PFM-RM-host-name</i>]
<i>record-ID_DRAWER_TYPE</i>	SQL_VARCHAR	Internal	Type. Valid values are as follows: <ul style="list-style-type: none"> 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 - RM for Platform
<i>record-ID_PRODID</i>	SQL_VARCHAR	Internal	Product ID of PFM - RM for Platform
<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)

Summarization rules

For records of the PI record type, the data that is collected is stored in the Store database. This includes data collected at the interval set in `Collection Interval`, as well as data that is collected on a specific interval basis derived from defined rules (such as minute, hour, day, week, month, or year). The type of summarization is defined for each field; this definition is referred to as the *summary rules*.

Some summary rules require intermediate data to be retained during the summarization period. In such a case, a field for retaining the intermediate data is added to the record in the Store database; this is called an *added field*. Some added fields are displayed as record fields in PFM - Web Console. These added fields that are displayed in PFM - Web Console can be used as fields for display in historical reports.

As distinguished from the *added fields* that are created 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 for the PFM - Manager name, the suffixes for the corresponding PFM - View name, and the data that is stored in each field.

Table 5-3: List of suffixes for added fields

Suffix for PFM - Manager name	Suffix for PFM - View name	Stored data
_TOTAL	(Total)	Sum of the field's value in the records over the summary period
_COUNT	--	Number of records collected during the summary period
_HI	(Max)	Maximum field value in the records over the summary period
_LO	(Min)	Minimum field value in the records over the summary period

Legend:

--: There is no added field.

The following table lists and describes the summary rules.

Table 5-4: List of summary rules

Summary rule name	Description of summary rule
COPY	Stores the field value in the most recent record in the summary period.
AVG	<p>Stores the average field value in the summary period.</p> <p>The formula is as follows: <i>(Sum-of-field-values)/(number-of-collected-records)</i></p> <p>Added fields (Store database):</p> <ul style="list-style-type: none"> • <code>_TOTAL</code> • <code>_COUNT</code> <p>Added field (PFM - Web Console):</p> <ul style="list-style-type: none"> • <code>(Total)</code>
HILO	<p>Stores the maximum, minimum, and average field values in the summary period.</p> <p>In the fixed field, the average value is stored.</p> <p>The formula is as follows: <i>(Sum-of-field-values)/(number-of-collected-records)</i></p> <p>Added fields (Store database):</p> <ul style="list-style-type: none"> • <code>_HI</code> • <code>_LO</code> • <code>_TOTAL</code> • <code>_COUNT</code> <p>Added fields (PFM - Web Console):</p> <ul style="list-style-type: none"> • <code>(Max)</code> • <code>(Min)</code> • <code>(Total)</code>
--	Indicates that data is not summarized.

Grouping rules

Performance data for the monitored hosts in the same instance environment is summarized as the data for the group agent based on predefined rules. This definition is referred to as the *grouping rules*.

The following table lists the grouping rules.

Table 5-5: List of grouping rules

Grouping rule name	Description of grouping rule
ADD	Stores the sum of all the performance data for the monitored hosts in the same instance environment.
AVG	Stores the average value of the performance data for the monitored hosts in the same instance environment.
COPY	Stores the value of specific performance data in all the performance data for the monitored hosts in the same instance environment.
FIXED	Stores a specific value regardless of the performance data.

List of data types

The table below lists the data types of the field values, together with their corresponding C and C++ data types. The values shown in the *Field* column under *Data type* are those shown in the *Format* column of the record field tables.

Table 5-6: List of data types

Data type		Size (bytes)	Description
Field	C and C++		
char(<i>n</i>)	char()	1	Character data (from 0x20 to 0x7e)
double	double	8	Numeric value (1.7E ± 308 (15 digits))
long	long	4	Numeric value (from -2,147,483,648 to 2,147,483,647)
short	short	2	Numeric value (from -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 the null.
time_t	unsigned long	4	Numeric value (from 0 to 4,294,967,295)
timeval	struct	8	Numeric value (the first 4 bytes are the seconds, the next 4 bytes are the microseconds)
ulong	unsigned long	4	Numeric value (from 0 to 4,294,967,295)
ushort	unsigned short	2	Numeric value (from 0 to 65,535)
utime	struct	8	Numeric value (the first 4 bytes are the seconds, the next 4 bytes are the microseconds)
word	unsigned short	2	Numeric value (from 0 to 65,535)
(Not applicable)	unsigned char	1	Numeric value (from 0 to 255)

Field values

This section describes the values stored in the fields.

Delta

In contrast to data collected as a cumulative value, a so-called *delta* value is data that indicates the amount by which the collection value has changed. For example, if the performance data value obtained during the first collection was 3 and the performance data value obtained during the second collection is 4, then the cumulative value is 7 but the change in the collected value is 1. In the tables, the *Delta* column indicates whether each field's value is a delta value. The performance data collected by PFM - RM for Platform varies as shown in the table below.

Note that the delta value can be a negative because it is a value relative to the previous data.

Table 5-7: Performance data collected by PFM - RM for Platform

Record type	Delta	Performance data referencing method	Indicate delta value [#]	Performance data value
PI record type	Yes	• Real-time report	Selected	The displayed value is the change amount.
			Not selected	The displayed value is the change amount.
		• Historical report • Alarm evaluation	--	The displayed value is the change amount.
	No	• Real-time report	Selected	The displayed value is the actual value at the time of data collection.
			Not selected	The displayed value is the actual value at the time of data collection.
		• Historical report • Alarm evaluation	--	The displayed value is the actual value at the time of data collection.
PD record type	Yes	• Real-time report	Selected	The displayed value is the change amount.
			Not selected	The displayed value is the cumulative value.

Record type	Delta	Performance data referencing method	Indicate delta value [#]	Performance data value
		<ul style="list-style-type: none"> Historical report Alarm evaluation 	--	The displayed value is the cumulative value.
	No	<ul style="list-style-type: none"> Real-time report 	Selected	The displayed value is the actual value at the time of data collection.
Not selected			The displayed value is the actual value at the time of data collection.	
<ul style="list-style-type: none"> Historical report Alarm evaluation 		--	The displayed value is the actual value at the time of data collection.	

Legend:

--: Not applicable because the item is not displayed.

#

Indicates whether one of the following items is selected in the check boxes for real-time report settings in PFM - Web Console:

- **Indicate delta value** in the report wizard's Edit > Indication Settings(Realtime) window
- **Indicate delta value in Indication Settings(Realtime)** on the **Properties** page in the Report window.

■ Notes about performance data collection

The following notes apply to collection of performance data:

- For a record of the PI record type to be stored, performance data must be collected at least twice.

For the records of the PI record type, performance data is collected at the interval set by PFM - Web Console. However, no collected performance data is stored in the Store database at the time the performance data collection setting is executed in PFM - Web Console.

Because historical data for records of the PI record type contains data (delta value) that requires a difference from the previously collected data, data obtained by two collections is required. Therefore, a maximum of twice the set time is required before historical data can be stored in the Store database.

For example, if 300 seconds (5 minutes) is set as the performance data collection

interval at 18:32 in PFM - Web Console, the first data collection will begin at 18:35. The next data collection will begin at 18:40. Historical data will be created from the data collected at 18:35 and 18:40; this historical data will be stored in the Store database at 18:40 (8 minutes after 18:32 when the settings were specified).

- In real-time reports, values are displayed from the first time data is collected. If a report requires initial data, 0 will be displayed as the initial value. For the second and subsequent data collections, the operation depends on the report.
- In the following cases, the value of the collected data is displayed after the second data collection:
 - **Indicate delta value** is not selected in the real-time report settings for records of the PI record type.
 - **Indicate delta value** is selected in the real-time report settings for records of the PD record type.
- In the following case, the difference between the first and second data is displayed at the time of the second data collection, and the value of the collected data is displayed at the time of the third and subsequent collections:
 - **Indicate delta value** is selected in the real-time report settings for records of the PI record type.
- If the monitoring target's channel is restarted when PFM - RM for Platform starts, the value of collected data may become negative. For the second and subsequent data that is collected, a positive value will be displayed as the difference between the data.

Fields that are added only when a record is recorded in the Store database

The following table lists the fields that are added only when data is recorded in the Store database.

Table 5-8: Fields that are added only when a record is recorded in the Store database

PFM - View name (PFM - Manager name)	Description	Format	Delta	Supported version
Agent Host (DEVICEID)	Identifier including the name of the host where PFM - RM for Platform is running	string (256)	No	All
Agent Instance (PROD_INST)	Instance name of PFM - RM for Platform	string (256)	No	All
Agent Type (PROPID)	Product ID of PFM - RM for Platform, expressed as a 1-byte identifier	char	No	All
Date (DATE)	Record creation date, in GMT (Greenwich Mean Time) ^{#1, #2}	char (3)	No	All
Date and Time (DATETIME)	Combination of the Date (DATE) and Time (TIME) fields ^{#2}	char (6)	No	All
Drawer Type (DRAWER_TYPE)	For a record of the PI record type, the data summarization type. The type displayed in PFM - Web Console reports differs from the type displayed using the ODBC driver. ^{#3}	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 in GMT (Greenwich Mean Time) ^{#1, #2}	char (3)	No	All

#1

A relative time during summarization is set because data is summarized for records of the PI record type. The following table shows the setting for each record type:

Table 5-9: Setting for each record type

Type	Setting for each record type
Minute	At the 0 second of the time when the record was created.
Hour	At the 0 minute and 0 second of the time when the record was created.
Day	At 00:00:00 of the day when the record was created.
Week	At 00:00:00 on Monday of the week when the record was created.
Month	At 00:00:00 on the first of the month when the record was created.
Year	At 00:00:00 on January 1st of the year when the record was created.

#2

When data is displayed in reports and by the ODBC driver, the Date field is displayed in the format *YYYYMMDD*, the Date and Time field is displayed in the format *YYYYMMDD hh:mm:ss*, and the Time field is displayed in the format *hh:mm:ss*.

#3

The following table shows the summary type displayed in PFM - Web Console reports and the type displayed when the ODBC driver is used.

Table 5-10: Differences in summary type depending on the display method

Type	PFM - Web Console	ODBC driver
Minute	Minute	m
Hour	Hour	H
Day	Day	D
Week	Week	W
Month	Month	M
Year	Year	Y

Notes on records

This section provides notes about record collection.

Notes about preparing for collection of performance data

The following point should be noted before you collect performance data:

Changing registry

This note is applicable to Windows.

PFM - RM for Platform supports operation in an environment that is set up by the OS-provided standard method.

If you use special OS settings, such as by using a registry editor to directly edit registry information, performance data may not be collected correctly even if such customization is disclosed in the Microsoft technical support information.

Notes about identifying record instances

The following note is about identifying record instances.

When instances are not identified uniquely

This note is applicable to Windows.

PFM - RM for Platform collects performance data by referencing the most recent information at specific intervals. If PFM - RM for Platform cannot identify the record instance uniquely from the information acquired from the OS, it adds a number in the format #*n* (*n*: 1, 2, 3, ...) at the end of the following field:

Record name	Field name
Network Interface Overview (PI_NET)	Interface (INTERFACE)

Notes about changing the system resources for the monitored host

The following note concerns changing the system resources for the monitored host.

Performance data before and after system resources are changed

When you change system resources for the monitored host, continuity between the performance data collected before and after the change is lost. Therefore, the performance data before and after the change must be handled as different sets of performance data.

Notes about records

Data values in a record whose instance name is `_Total`

The total and average values of all instances are collected as data values in the record whose instance name is indicated as `_Total` among all multi-instance records. If the instance environment is changed during the collection interval, values may not match.

Value exceeding the data type defined in the data model

PFM - RM for Platform does not support a value that is outside the permissible range for the data type defined in the data model. If a value exceeding the data type defined in the data model is collected, the values that are displayed may not be accurate.

When records are not created

If PFM - RM for Platform cannot collect the performance data for the field that is defined as the ODBC key field, no record is created.

Fields for which performance data is not collected during the first collection

Non-PD records contain fields for which performance data is not collected during the first collection. For these fields, performance data is collected during the second and subsequent collections.

List of records

The following table lists and describes the records that can be collected by PFM - RM for Platform and the information that is stored in each record.

Table 5-11: List of records

Category	Record name	Record ID	Information stored in record
Disk	Logical Disk Overview	PI_LDSK	Performance data, taken at a specific interval, about the capacity of a logical disk at the monitored host
Network	Network Interface Overview	PI_NET	Performance data, taken at a specific interval, about the network interface for the monitored host
Disk	Physical Disk Overview	PI_PDSK	Performance data, taken at a specific interval, about physical disks on the monitored host
Processor	Processor Overview	PI_CPU	Performance data, taken at a specific interval, about the processors on the monitored host
System	System Status	PD	Status of the connection to the monitored host and information about the OS of the monitored host at a specific time
	System Summary	PI	Performance data, taken at a specific interval, about the processors and memory in the entire system of the monitored host

Logical Disk Overview (PI_LDSK)

Function

The Logical Disk Overview (PI_LDSK) record stores performance data, taken at a specific interval, about the capacity of a logical disk at the monitored host. This is a multi-instance record.

■ Notes

- If the connection to the monitored host fails, the information cannot be collected.
- If you collect this record in a Windows environment, note the following:
 - This record collects performance information for hard disk drives and fixed disk drives. Performance information for other devices (such as network disks) cannot be monitored.
 - If a disk volume corresponding to the ID (ID) field is not accessible due to the security settings, no record for that disk volume is created. To create a record for such a disk volume, change the security settings so that the user account specified for USER in the monitoring target settings can be used to access the disk volume.
 - If no drive letter or drive path is assigned to the disk volume, 0 is set in the Size (SIZE) field.
 - If multiple drive letters or drive paths are assigned to the same disk volume, 0 may be set in the Size (SIZE) field.
 - If you have changed the drive letter or drive path of a disk volume, you must restart the modified monitoring target. If you attempt to collect records without restarting the monitoring target, the record for that disk volume may not be collected. Even if the record is collected, the Size (SIZE) field may contain a value of 0 and the ID (ID) field may contain the logical disk volume name before the change was made.

Default and changeable values

Item	Default value	Changeable
Collection Interval	300	Y
Collection Offset	0	Y
Log	No	Y
LOGIF	(Blank)	Y

Legend:

Y: Changeable

ODBC key field

PI_LDSK_ID

Lifetime

None

Record size

- Fixed part: 1,034 bytes
- Variable part: 1,216 bytes

Fields

PFM - View name (PFM - Manager name)	Description	Summary rule	Grouping rule	Format	Delta	Unsupported
Record Type (INPUT_RECORD_TYPE)	The record name. This is always LDSK.	COPY	COPY	char (8)	No	--
Record Time (RECORD_TIME)	Time when the record was created.	COPY	COPY	time_t	No	--
Interval (INTERVAL)	Interval during which the information is collected. [Units: seconds] If the data is summarized in historical reports, the last value stored is displayed.	COPY	FIXED	ulong	No	--
VA DeviceID (VADEVICEID)	Device ID of the monitored host.	COPY	COPY	string (256)	No	--
Target Host (TARGET_HOST)	Name of the monitored host.	COPY	FIXED	string (33)	No	--

PFM - View name (PFM - Manager name)	Description	Summary rule	Grouping rule	Format	Delta	Unsupported
Polling Time (POLLING_TIME)	Time when performance data was collected on the PFM - RM host.	COPY	FIXED	string (32)	No	--
Target Host Time (TARGET_HOST_TIME)	Time when performance data was collected on the monitored host.	COPY	FIXED	string (32)	No	--
ID (ID)	Windows: Logical disk volume name. UNIX: File system mount point.	COPY	COPY	string (1024)	No	--
Device Name (DEVICE_NAME)	Device name.	COPY	FIXED	string (40)	No	Windows
Free Mbytes (FREE_MBYTES)	Size of unused area. [Units: MB]	HILO	ADD	double	No	--
Free Mbytes % (FREE_MBYTES_PERCENT)	Percentage of area unused. [Units: %]	HILO	AVG	double	No	--
Size (SIZE)	Disk size. [Units: MB]	COPY	ADD	double	No	--
Ext1 (EXT1)#	Extension field 1.	HILO	AVG	double	No	All
Ext2 (EXT2)#	Extension field 2.	HILO	AVG	double	No	All

Legend:

--: All OSs of PFM - RM for Platform are supported.

All: All OSs of PFM - RM for Platform are unsupported.

#

This field is not used for operations.

Network Interface Overview (PI_NET)

Function

The Network Interface Overview (PI_NET) record stores performance data, taken at a specific interval, about the network interface for the monitored host. This is a multi-instance record.

■ Notes

- If the connection to the monitored host fails, the information cannot be collected.
- If the monitored host is Windows, Solaris, AIX, or Linux, and this record is collected in an environment where IPv4 and IPv6 coexist, a summary of the information for IPv4 and IPv6 is collected.
- If the monitored host is HP-UX and this record is collected in an environment where IPv4 and IPv6 coexist, information is collected separately for IPv4 and IPv6. In an IPv4 environment, IPv4 : is attached to the beginning of the ID, while in an IPv6 environment, IPv6 : is attached to the beginning of the ID.

Default and changeable values

Item	Default value	Changeable
Collection Interval	300	Y
Collection Offset	0	Y
Log	No	Y
LOGIF	(Blank)	Y

Legend:

Y: Changeable

ODBC key field

PI_NET_ID

Lifetime

None

Record size

- Fixed part: 1,034 bytes
- Variable part: 548 bytes

Fields

PFM - View name (PFM - Manager name)	Description	Summary rule	Grouping rule	Format	Delta	Unsupported
Record Type (INPUT_RECORD_TYPE)	The record name. This is always NET.	COPY	COPY	char (8)	No	--
Record Time (RECORD_TIME)	Time when the record was created.	COPY	COPY	time_t	No	--
Interval (INTERVAL)	Interval during which the information is collected. [Units: seconds] If the data is summarized in historical reports, the last value stored is displayed.	COPY	FIXED	ulong	No	--
VA DeviceID (VADEVICEID)	Device ID of the monitored host.	COPY	COPY	string (256)	No	--
Target Host (TARGET_HOST)	Name of the monitored host.	COPY	FIXED	string (33)	No	--
Polling Time (POLLING_TIME)	Time when performance data was collected on the PFM - RM host.	COPY	FIXED	string (32)	No	--
Target Host Time (TARGET_HOST_TIME)	Time when performance data was collected on the monitored host.	COPY	FIXED	string (32)	No	--
ID (ID)	Instance name of network.	COPY	COPY	string (256)	No	--

PFM - View name (PFM - Manager name)	Description	Summary rule	Grouping rule	Format	Delta	Unsupported
Max Transmission Unit (MAX_TRANSMISSION_UNIT)	Maximum packet size. [Units: bytes]	COPY	FIXED	ulong	No	Windows
Rcvd Packets/sec (RCVD_PACKETS_PER_SEC)	Rate of receiving network interface packets. [Units: packets/second]	HILO	AVG	double	No	--
Sent Packets/sec (SENT_PACKETS_PER_SEC)	Rate of transmitting network interface packets. [Units: packets/second]	HILO	AVG	double	No	--
Total Packets/sec (TOTAL_PACKETS_PER_SEC)	Total rate of receiving and transmitting network interface packets. [Units: packets/second]	HILO	AVG	double	No	--
Rcvd Bytes/sec (RCVD_BYTES_PER_SEC)	Rate of receiving network interface data. [Units: bytes/second]	HILO	AVG	double	No	UNIX

PFM - View name (PFM - Manager name)	Description	Summary rule	Grouping rule	Format	Delta	Unsupported
Sent Bytes/sec (SENT_BYTES_PER_SEC)	Rate of transmitting network interface data. [Units: bytes/second]	HILO	AVG	double	No	UNIX
Total Bytes/sec (TOTAL_BYTES_PER_SEC)	Total rate of receiving transmitting network interface data. [Units: bytes/second]	HILO	AVG	double	No	UNIX
Ext1 (EXT1)#	Extension field 1.	HILO	AVG	double	No	All
Ext2 (EXT2)#	Extension field 2.	HILO	AVG	double	No	All

Legend:

--: All OSs of PFM - RM for Platform are supported.

All: All OSs of PFM - RM for Platform are unsupported.

UNIX: Indicates HP-UX, Solaris, AIX, and Linux.

#

This field is not used for operations.

Physical Disk Overview (PI_PDSK)

Function

The Physical Disk Overview (PI_PDSK) record stores performance data, taken at a specific interval, about physical disks on the monitored host. This is a multi-instance record.

■ Notes

- If the connection to the monitored host fails, the information cannot be collected.
- If the OS of the monitored host is AIX, only the following users can collect this record information:
 - root user
 - User who belongs to both adm and system groups

Default and changeable values

Item	Default value	Changeable
Collection Interval	300	Y
Collection Offset	0	Y
Log	No	Y
LOGIF	(Blank)	Y

Legend:

Y: Changeable

ODBC key field

PI_PDSK_ID

Lifetime

None

Record size

- Fixed part: 1,034 bytes
- Variable part: 652 bytes

Fields

PFM - View name (PFM - Manager name)	Description	Summary rule	Grouping rule	Format	Delta	Unsupported
Record Type (INPUT_RECORD_TYPE)	The record name. This is always PDSK.	COPY	COPY	char (8)	No	--
Record Time (RECORD_TIME)	Time when the record was created.	COPY	COPY	time_t	No	--
Interval (INTERVAL)	Interval during which the information is collected. [Units: seconds] If the data is summarized in historical reports, the last value stored is displayed.	COPY	FIXED	ulong	No	--
VA DeviceID (VADEVICEID)	Device ID of the monitored host.	COPY	COPY	string (256)	No	--
Target Host (TARGET_HOST)	Name of the monitored host.	COPY	FIXED	string (33)	No	--
Polling Time (POLLING_TIME)	Time when performance data was collected on the PFM - RM host.	COPY	FIXED	string (32)	No	--
Target Host Time (TARGET_HOST_TIME)	Time when performance data was collected on the monitored host.	COPY	FIXED	string (32)	No	--

PFM - View name (PFM - Manager name)	Description	Summary rule	Grouping rule	Format	Delta	Unsupported
ID (ID)	Windows: Physical disk number. Unix: Device name.	COPY	COPY	string (256)	No	--
Avg Disk Time (AVG_DISK_TIME)	Average operation time for disk I/O. [Units: seconds]	HILO	AVG	double	No	--
Busy % (BUSY_PERCENT)	Percentage of time the disk was busy with read and write requests. [Units: %] In Unix, if a device continuously performs processing, 100 might be exceeded.	HILO	AVG	double	No	--
Read MBytes/sec (READ_MBYTES_PER_SEC)	Speed at which data is transmitted to disk during read processing. [Units: MB/second]	HILO	AVG	double	No	AIX, HP-UX
Write MBytes/sec (WRITE_MBYTES_PER_SEC)	Speed at which data is transmitted to disk during write processing. [Units: MB/second]	HILO	AVG	double	No	AIX, HP-UX

PFM - View name (PFM - Manager name)	Description	Summary rule	Grouping rule	Format	Delta	Unsupported
Total MBytes/sec (TOTAL_MBYTES_PER_SEC)	Speed at which data is transmitted between disks during read and write processing. [Units: MB/second]	HILO	AVG	double	No	--
Read Counts/sec (READ_COUNTS_PER_SEC)	Speed of disk reads. [Units: reads/second]	HILO	AVG	double	No	AIX, HP-UX
Write Counts/sec (WRITE_COUNTS_PER_SEC)	Speed of disk writes. [Units: writes/second]	HILO	AVG	double	No	AIX, HP-UX
Total Counts/sec (TOTAL_COUNTS_PER_SEC)	Speed of disk reads and writes. [Units: reads and writes/second]	HILO	AVG	double	No	--
Queue Length (QUEUE_LENGTH)	Windows: Average number of read and write requests in the disk queue. Unix: Device queue length. One item of I/O processing per second is assumed.	HILO	AVG	double	No	--
Ext1 (EXT1)#	Extension field 1.	HILO	AVG	double	No	All
Ext2 (EXT2)#	Extension field 2.	HILO	AVG	double	No	All

Legend:

--: All OSs of PFM - RM for Platform are supported.

All: All OSs of PFM - RM for Platform are unsupported.

#

This field is not used for operations.

Processor Overview (PI_CPU)

Function

The Processor Overview (PI_CPU) record stores performance data, taken at a specific interval, about the processors on the monitored host. This is a multi-instance record.

■ Notes

- If the connection to the monitored host fails, the information cannot be collected.
- If this record is collected in a Windows environment, 100 is set as the maximum value of the following fields whose ID (ID) field is `_Total`:
 - CPU % (CPU_PERCENT)
 - System % (SYSTEM_PERCENT)
 - User % (USER_PERCENT)
- If the OS of the monitored host is AIX, only the following users can collect this record information:
 - root user
 - User who belongs to both adm and system groups

Default and changeable values

Item	Default value	Changeable
Collection Interval	300	Y
Collection Offset	0	Y
Log	No	Y
LOGIF	(Blank)	Y

Legend:

Y: Changeable

ODBC key field

PI_CPU_ID

Lifetime

None

Record size

- Fixed part: 1,034 bytes
- Variable part: 544 bytes

Fields

PFM - View name (PFM - Manager name)	Description	Summary rule	Grouping rule	Format	Delta	Unsupported
Record Type (INPUT_RECORD_TYPE)	The record name. This is always CPU.	COPY	COPY	char(8)	No	--
Record Time (RECORD_TIME)	Time when the record was created.	COPY	COPY	time_t	No	--
Interval (INTERVAL)	Interval during which the information is collected. [Units: seconds] If the data is summarized in historical reports, the last value stored is displayed.	COPY	FIXED	ulong	No	--
VA DeviceID (VADEVICEID)	Device ID of the monitored host.	COPY	COPY	string(256)	No	--
Target Host (TARGET_HOST)	Name of the monitored host.	COPY	FIXED	string(33)	No	--
Polling Time (POLLING_TIME)	Time when performance data was collected on the PFM - RM host.	COPY	FIXED	string(32)	No	--

PFM - View name (PFM - Manager name)	Description	Summary rule	Grouping rule	Format	Delta	Unsupported
Target Host Time (TARGET_HOST_TIME)	Time when performance data was collected on the monitored host.	COPY	FIXED	string (32)	No	--
ID (ID)	Processor ID.	COPY	COPY	string (256)	No	--
CPU % (CPU_PERCENT)	Processor CPU usage. [Units: %]	HILO	AVG	double	No	--
Idle % (IDLE_PERCENT)	Percentage of time the processor was idle. [Units: %]	HILO	AVG	double	No	--

PFM - View name (PFM - Manager name)	Description	Summary rule	Grouping rule	Format	Delta	Unsupported
Interrupt Counts/sec (INTERRUPT_COUNTS_PER_SEC)	<p>Windows: Rate at which the processor processed interrupt requests generated by hardware devices (for example, the system clock, mouse, disk drivers, data communication line, and NIC). DPC (delay procedure call) interrupts are not included. If this field increases greatly when there is no system activity, a hardware problem (e.g., a low-speed device) probably exists. [Units: times/second]</p> <p>Unix: Rate at which interrupts are generated. [Units: times/second]</p>	HILO	AVG	double	No	HP-UX
System % (SYSTEM_PERCENT)	<p>Percentage of processor usage in kernel mode. [Units: %]</p>	HILO	AVG	double	No	--

PFM - View name (PFM - Manager name)	Description	Summary rule	Grouping rule	Format	Delta	Unsupported
User % (USER_PERCENT)	Percentage of processor usage in user mode. [Units: %]	HILO	AVG	double	No	--
Wait % (WAIT_PERCENT)	Percentage of time waiting for I/O. [Units: %]	HILO	AVG	double	No	Windows
Ext1 (EXT1)#	Extension field 1.	HILO	AVG	double	No	Windows, HP-UX, Solaris
Ext2 (EXT2)#	Extension field 2.	HILO	AVG	double	No	Windows, HP-UX, Solaris

Legend:

--: All OSs of PFM - RM for Platform are supported.

#

This field is not used for operations.

System Status (PD)

Function

The System Status (PD) record stores the status of the connection to the monitored host and information about the OS of the monitored host at a specific time.

■ Notes

If the connection to the monitored host fails, information is collected only in the following fields:

- Record Type (INPUT_RECORD_TYPE)
- Record Time (RECORD_TIME)
- Interval (INTERVAL)
- VA DeviceID (VADEVICEID)
- Target Host (TARGET_HOST)
- Polling Time (POLLING_TIME)
- Status (STATUS)
- Reason (REASON)

Default and changeable values

Item	Default value	Changeable
Collection Interval	300	Y
Collection Offset	0	Y
Log	Yes	Y
LOGIF	(Blank)	Y

Legend:

Y: Changeable

ODBC key field

None

Lifetime

None

Record size

- Fixed part: 2,050 bytes
- Variable part: 0 bytes

Fields

PFM - View name (PFM - Manager name)	Description	Summary rule	Grouping rule	Format	Delta	Unsupported
Record Type (INPUT_RECORD_TYPE)	The record name. This is always PD.	--	COPY	char (8)	No	--
Record Time (RECORD_TIME)	Time when the record was created.	--	COPY	time_t	No	--
Interval (INTERVAL)	This is always 0.	--	FIXED	ulong	No	--
VA DeviceID (VADEVICEID)	Device ID of the monitored host.	--	COPY	string (256)	No	--
Target Host (TARGET_HOST)	Name of the monitored host.	--	FIXED	string (33)	No	--
Polling Time (POLLING_TIME)	Time when performance data was collected on the PFM - RM host.	--	FIXED	string (32)	No	--
Target Host Time (TARGET_HOST_TIME)	Time when performance data was collected on the monitored host.	--	FIXED	string (32)	No	--

PFM - View name (PFM - Manager name)	Description	Summary rule	Grouping rule	Format	Delta	Unsupported
Status (STATUS)	Connection status. SUCCESS: Connected ERROR: Connection failed	--	FIXED	string (8)	No	--
Reason (REASON)	Cause when the Status field is ERROR. Connection failed: Connection failed. Authorization failed: Authorization failed. Response invalid: There was an unintended response from the server. Collection error: Collection failed. If the Status field is SUCCESS, this item is empty.	--	FIXED	string (128)	No	--
OS Type (OS_TYPE)	OS on the monitored host.	--	FIXED	string (16)	No	--
Version (VERSION)	OS version on the monitored host.	--	FIXED	string (32)	No	--

PFM - View name (PFM - Manager name)	Description	Summary rule	Grouping rule	Format	Delta	Unsupported
Processor Type (PROCESSOR_TYPE)	Type of processor on the monitored host.	--	FIXED	string (64)	No	--
Detail (DETAIL)	Details about the monitored host.	--	FIXED	string (256)	No	--
Ext1 (EXT1) [#]	Extension field 1.	--	FIXED	string (256)	No	All
Ext2 (EXT2) [#]	Extension field 2.	--	FIXED	string (256)	No	All

Legend:

--: All OSs of PFM - RM for Platform are supported (or there is no corresponding summary rule).

All: All OSs of PFM - RM for Platform are supported.

#

This field is not used for operations.

System Summary (PI)

Function

The System Summary (PI) record stores performance data, taken at a specific interval, about the processors and memory in the entire system of the monitored host.

- Note

If the connection to the monitored host fails, the information cannot be collected.

Default and changeable values

Item	Default value	Changeable
Collection Interval	300	Y
Collection Offset	0	Y
Log	Yes	Y
LOGIF	(Blank)	Y

Legend:

Y: Changeable

ODBC key field

None

Lifetime

None

Record size

- Fixed part: 2,206 bytes
- Variable part: 0 bytes

Fields

PFM - View name (PFM - Manager name)	Description	Summary rule	Grouping rule	Format	Delta	Unsupported
Record Type (INPUT_RECORD_TYPE)	The record name. This is always PI.	COPY	COPY	char (8)	No	--

PFM - View name (PFM - Manager name)	Description	Summary rule	Grouping rule	Format	Delta	Unsupported
Record Time (RECORD_TIME)	Time when the record was created.	COPY	COPY	time_t	No	--
Interval (INTERVAL)	Interval during which the information is collected. [Units: seconds] If the data is summarized in historical reports, the last value stored is displayed.	COPY	FIXED	ulong	No	--
VA DeviceID (VADEVICEID)	Device ID of the monitored host.	COPY	COPY	string (256)	No	--
Target Host (TARGET_HOST)	Name of the monitored host.	COPY	FIXED	string (33)	No	--
Polling Time (POLLING_TIME)	Time when performance data was collected on the PFM - RM host.	COPY	FIXED	string (32)	No	--
Target Host Time (TARGET_HOST_TIME)	Time when performance data was collected on the monitored host.	COPY	FIXED	string (32)	No	--
Active CPUs (ACTIVE_CPUS)	Number of processors.	COPY	ADD	ulong	No	--
CPU % (CPU_PERCENT)	Processor usage rate. [Units: %] This is the average of all processors.	HILO	AVG	double	No	--

PFM - View name (PFM - Manager name)	Description	Summary rule	Grouping rule	Format	Delta	Unsupported
Idle % (IDLE_PERCENT)	Percentage of time the processors are idle. [Units: %] This is the average of all processors.	HILO	AVG	double	No	--
System % (SYSTEM_PERCENT)	Percentage of processor usage in kernel mode. [Units: %] This is the average of all processors.	HILO	AVG	double	No	--
User % (USER_PERCENT)	Percentage of processor usage in user mode. [Units: %] This is the average of all processors.	HILO	AVG	double	No	--
Wait % (WAIT_PERCENT)	Percentage of time the processors are waiting for I/O. [Units: %] This is the average of all processors.	HILO	AVG	double	No	Windows

PFM - View name (PFM - Manager name)	Description	Summary rule	Grouping rule	Format	Delta	Unsupported
Processor Queue Length (PROCESSOR_QUEUE_LENGTH)	Number of requests in the processor queue that are ready to execute and waiting for processor time. If the length of the queue continuously exceeds 2, the processor is probably busy.	HILO	AVG	double	No	UNIX
Run Queue Avg 5 min (RUN_QUEUE_AVG_5_MIN)	Average number of threads waiting in the execution queue for the past 5 minutes. In HP-UX, Solaris, and AIX, this value includes the number of I/O waiting threads. In LINUX, this value does not include the number of I/O waiting threads.	HILO	AVG	double	No	Windows

PFM - View name (PFM - Manager name)	Description	Summary rule	Grouping rule	Format	Delta	Unsupported
Interrupt Counts/sec (INTERRUPT_COUNTS_PER_SEC)	<p>Windows: Rate at which the processor processed interrupt requests generated by hardware devices (for example, the system clock, mouse, disk drivers, data communication line, and NIC). DPC (delay procedure call) interrupts are not included. If this field increases greatly when there is no system activity, a hardware problem (e.g., a low-speed device) probably exists. [Units: times/second]</p> <p>Unix: Rate at which interrupts are generated. [Units: times/second]</p>	HILO	AVG	double	No	--
Effective Free Mem % (EFFECTIVE_FREE_MEM_PERCENT)	<p>Percentage of physical memory available to applications. [Units: %]</p>	HILO	AVG	double	No	Windows, AIX, HP-UX, Solaris

PFM - View name (PFM - Manager name)	Description	Summary rule	Grouping rule	Format	Delta	Unsupported
Effective Free Mem Mbytes (EFFECTIVE_FREE_MEM_MBYTES)	Amount of physical memory available to applications. [Units: MB]	HILO	AVG	double	No	Windows, AIX, HP-UX, Solaris
Free Mem % (FREE_MEM_PERCENT)	Percentage of physical memory that is unused. [Units: %]	HILO	AVG	double	No	--
Free Mem Mbytes (FREE_MEM_MBYTES)	Amount of unused physical memory. [Units: MB]	HILO	AVG	double	No	--
Used Mem % (USED_MEM_PERCENT)	Percentage of physical memory used. [Units: %]	HILO	AVG	double	No	--
Used Mem Mbytes (USED_MEM_MBYTES)	Amount of used physical memory. [Units: MB]	HILO	AVG	double	No	--
Total Mem Mbytes (TOTAL_MEM_MBYTES)	Amount of physical memory. [Units: MB]	COPY	ADD	double	No	--
Free Swap % (FREE_SWAP_PERCENT)	Windows: Percentage of virtual memory that is unused. [Units: %] UNIX: Percentage of swap area that is unused. [Units: %]	HILO	AVG	double	No	--

PFM - View name (PFM - Manager name)	Description	Summary rule	Grouping rule	Format	Delta	Unsupported
Free Swap Mbytes (FREE_SWAP_MBYTES)	Windows: Amount of unused virtual memory. [Units: MB] Unix: Amount of unused swap space. [Units: MB]	HILO	AVG	double	No	--
Used Swap % (USED_SWAP_PERCENT)	Windows: Percentage of virtual memory used. [Units: %] Unix: Percentage of swap space used. [Units: %]	HILO	AVG	double	No	--
Used Swap Mbytes (USED_SWAP_MBYTES)	Windows: Size of area committed for virtual memory. [Units: MB] Unix: Size of swap space. [Units: MB]	HILO	AVG	double	No	--
Total Swap Mbytes (TOTAL_SWAP_MBYTES)	Windows: Amount of virtual memory. [Units: MB] UNIX: Amount of swap area. [Units: MB]	COPY	ADD	double	No	--

PFM - View name (PFM - Manager name)	Description	Summary rule	Grouping rule	Format	Delta	Unsupported
Page Fault Counts/sec (PAGE_FAULT_COUNTS_PER_SEC)	Frequency of page faults. [Units: faults/second]	HILO	AVG	double	No	HP-UX, Linux
Page Scan Counts/sec (PAGE_SCAN_COUNTS_PER_SEC)	Frequency of page scans. [Units: scans/second]	HILO	AVG	double	No	Windows, Linux, Solaris
Page-In Counts/sec (PAGE_IN_COUNTS_PER_SEC)	Rate of page-in operations. [Units: operations/second]	HILO	AVG	double	No	Linux
Page-Out Counts/sec (PAGE_OUT_COUNTS_PER_SEC)	Rate of page-out operations. [Units: operations/second]	HILO	AVG	double	No	Linux
Page-In Pages/sec (PAGE_IN_PAGES_PER_SEC)	Rate at which pages are paged in. [Units: pages/second]	HILO	AVG	double	No	AIX
Page-Out Pages/sec (PAGE_OUT_PAGES_PER_SEC)	Rate at which pages are paged out. [Units: pages/second]	HILO	AVG	double	No	AIX

PFM - View name (PFM - Manager name)	Description	Summary rule	Grouping rule	Format	Delta	Unsupported
Paging Pages/sec (PAGING_PAGES_PER_SEC)	Rate at which pages were being paged in and out when a page fault occurred. [Units: pages/second] This is the total of the Page-In Pages/sec and Page-Out Pages/sec fields. If this value continuously exceeds 5, lack of memory might be causing a system bottleneck.	HILO	AVG	double	No	UNIX
Pool Nonpaged KBytes (POOL_NONPAGED_KBYTES)	Amount of physical memory allocated for executing system component tasks for which page-outs could not be performed. [Units: KB] If this value continuously increases even though server processing is not becoming busier, a process might have a memory leak.	HILO	AVG	double	No	UNIX

PFM - View name (PFM - Manager name)	Description	Summary rule	Grouping rule	Format	Delta	Unsupported
Swap-In Counts/ sec (SWAP_IN_COUNT S_PER_SEC)	Frequency of swap-in operations. [Units: operations/second]	HILO	AVG	double	No	Windows, AIX, Linux
Swap-Out Counts/ sec (SWAP_OUT_COUN TS_PER_SEC)	Frequency of swap-out operations. [Units: operations/second]	HILO	AVG	double	No	Windows, AIX, Linux
Swap-In Pages/ sec (SWAP_IN_PAGES _PER_SEC)	Frequency of page loading by swap-in operations. [Units: pages/second] AIX: Frequency of page loading in the paging area by swap-in operations. [Units: pages/second]	HILO	AVG	double	No	Windows, AIX
Swap-Out Pages/ sec (SWAP_OUT_PAGE S_PER_SEC)	Frequency of page retrieval by swap-out operations. [Units: pages/second] AIX: Frequency of page retrieval in the paging area by swap-out operations. [Units: pages/second]	HILO	AVG	double	No	Windows, AIX

PFM - View name (PFM - Manager name)	Description	Summary rule	Grouping rule	Format	Delta	Unsupported
Ext1 (EXT1) [#]	Extension field 1.	HILO	AVG	double	No	All
Ext2 (EXT2) [#]	Extension field 2.	HILO	AVG	double	No	All

Legend:

--: All OSs of PFM - RM for Platform are supported.

All: All OSs of PFM - RM for Platform are unsupported.

UNIX: Indicates HP-UX, Solaris, AIX, and Linux.

#

This field is not used for operations.

Chapter

6. Messages

This chapter describes the format of the PFM - RM for Platform messages, lists the destinations to which messages are output, shows which messages are output to the Windows event log and syslog, and describes the messages in detail.

- 6.1 Message format
- 6.2 Message output destinations
- 6.3 List of messages output to the Windows event log and syslog
- 6.4 Messages

6.1 Message format

This section explains the format of messages issued by PFM - RM for Platform. It also describes the notations used in this manual to explain the messages.

6.1.1 Format of output messages

This section explains the format of the messages issued by PFM - RM for Platform.

Each message consists of a message ID, followed by a message text. The message format is as follows:

KAVLnnnnn - Y message-text

The message ID is composed of the following elements:

K

Identifier of the system.

AVL

Indicates a PFM - RM for Platform message.

nnnnn

Message number. The message numbers for PFM - RM for Platform are in the 17,000 series (17xxx).

Y

Type of message:

- **E: Error**
The processing has been cancelled.
- **w: Warning**
The processing resumes after the message has been output.
- **I: Information**
The system is providing the user with information.
- **Q: Query**
The system is prompting the user to enter a response.

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)

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)

6.1.2 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 will depend 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 the system administrator is contacted by the operator, the system administrator should collect log information and conduct initial checking in accordance with the procedures explained in 7. *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 or syslog) and the log information output by PFM - RM for Platform. The log information enables you to understand the details of the processing that was underway when the problem occurred and to take appropriate action. You should also make a record of the operations that led up to the problem and evaluate whether the problem is likely to recur.

6.2 Message output destinations

This section shows the output destinations of the messages issued by PFM - RM for Platform.

Whether a message is output to a destination shown in the table below is indicated by "Y" or "--":

Y: Message is output to the destination.

--: Message is not output to the destination.

Table 6-1: PFM - RM for Platform message output destinations

Message ID	Output destination							
	Win. event log	syslog	Common message log	stdout	stderr	JP1 system event#1	Agent event#2	Trace log of Remote Monitor Collector service
KAVL17000	Y	Y	Y	--	--	--	--	--
KAVL17001	Y	Y	Y	--	--	--	--	--
KAVL17002	Y	Y	Y	--	--	--	--	--
KAVL17003	Y	Y	Y	--	--	--	--	--
KAVL17004	Y	Y	Y	--	--	--	--	--
KAVL17005	Y	Y	Y	--	--	--	--	--
KAVL17006	Y	Y	Y	--	--	--	--	--
KAVL17007	Y	Y	Y	--	--	--	--	--
KAVL17008	Y	Y	Y	--	--	--	--	--
KAVL17009	Y	Y	Y	--	--	--	--	--
KAVL17010	--	--	Y	--	--	--	--	--
KAVL17011	--	--	Y	--	--	Y	Y	--
KAVL17012	--	--	Y	--	--	--	--	--
KAVL17013	--	--	Y	--	--	--	--	--
KAVL17014	--	--	Y	--	--	--	--	--

Message ID	Output destination							
	Win. event log	syslog	Common message log	stdout	stderr	JP1 system event ^{#1}	Agent event ^{#2}	Trace log of Remote Monitor Collector service
KAVL17015	--	--	Y	--	--	--	--	--
KAVL17016	--	--	Y	--	--	--	--	--
KAVL17017	--	--	Y	--	--	--	--	--
KAVL17018	--	--	--	--	--	--	--	Y
KAVL17019	--	--	Y	--	--	--	--	--
KAVL17020	--	--	Y	--	--	--	--	--
KAVL17021	--	--	Y	--	--	--	--	--
KAVL17022	--	--	Y	--	--	--	--	--

Legend

Win. event log: Windows event log

stdout: Standard output

stderr: Standard error

#1

A JP1 system event notifies JP1/IM of a change in the agent status. For details about JP1 system events, see the chapter that describes the monitoring of operations linked with the integrated manager product (JP1/IM) in the *Job Management Partner 1/Performance Management User's Guide*.

The following table shows the programs that are required in order to issue JP1 system events.

Table 6-2: Programs required in order to issue JP1 system events

Host type	Prerequisite program	Version
PFM - Manager host	PFM - Manager	09-00 or later
PFM - Web Console host	PFM - Web Console	08-00 or later
PFM - RM host	PFM - RM for Platform	09-00 or later

Host type	Prerequisite program	Version
	PFM - Manager or PFM - Base	09-00 or later
	JP1/Base	09-00 or later

#2

An agent event notifies PFM - Manager of a change in the 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*.

The following table shows the programs that are required in order to issue agent events.

Table 6-3: Programs required in order to issue agent events

Host type	Prerequisite program	Version
PFM - Manager host	PFM - Manager	09-00 or later
PFM - Web Console host	PFM - Web Console	08-00 or later
PFM - RM host	PFM - RM for Platform	09-00 or later
	PFM - Manager or PFM - Base	09-00 or later

6.3 List of messages output to the Windows event log and syslog

This section lists the messages that PFM - RM for Platform outputs to the Windows event log and to syslog.

If the OS is Windows, the Windows event log is displayed in the application log in the Event Viewer window.

Reference note:

To open the Event Viewer window, from the Windows **Start** menu, choose **Administrative Tools**, and then **Event Viewer**.

For any event issued by PFM - RM for Platform, the identifier PFM-RMPlatform is displayed in the **Source** column of the Event Viewer window.

If the OS is UNIX, syslog means are output to the syslog file.

For details about the storage location of the syslog file, see the syslog daemon configuration file (default is /etc/syslogd.conf).

The following table lists the messages that PFM - RM for Platform outputs to the Windows event log and to syslog.

Table 6-4: Messages output to the Windows event log and syslog

Message ID	Windows event log		syslog	
	Event ID	Type	Facility	Level
KAVL17000-I	17000	Information	LOG_DAEMON	LOG_INFO
KAVL17001-E	17001	Error	LOG_DAEMON	LOG_ERR
KAVL17002-I	17002	Information	LOG_DAEMON	LOG_INFO
KAVL17003-E	17003	Error	LOG_DAEMON	LOG_ERR
KAVL17004-E	17004	Error	LOG_DAEMON	LOG_ERR
KAVL17005-E	17005	Error	LOG_DAEMON	LOG_ERR
KAVL17006-E	17006	Error	LOG_DAEMON	LOG_ERR
KAVL17007-E	17007	Error	LOG_DAEMON	LOG_ERR
KAVL17008-E	17008	Error	LOG_DAEMON	LOG_ERR
KAVL17009-E	17009	Error	LOG_DAEMON	LOG_ERR

6.4 Messages

This section explains the messages issued by PFM - RM for Platform and the actions to be taken.

KAVL17000-I

Remote Monitor Collector has stopped. (*host=host-name*,
service=service-ID)

The Remote Monitor Collector service terminated normally.

S:

Terminates the Remote Monitor Collector service processing.

KAVL17001-E

Remote Monitor Collector failed to start.

Startup of the Remote Monitor Collector service failed.

S:

Terminates the Remote Monitor Collector service processing.

O:

Check the immediately preceding message that has been output to the common message log and take appropriate action according to that message.

KAVL17002-I

Remote Monitor Collector started. (*host=host-name*,
service=service-ID)

Startup of the Remote Monitor Collector service has been completed.

S:

Starts Remote Monitor Collector's performance data collection processing.

KAVL17003-E

Remote Monitor Collector stopped abnormally.

The Remote Monitor Collector terminated abnormally.

S:

Terminates the Remote Monitor Collector service processing.

O:

Check the immediately preceding message that has been output to the common message log and take appropriate action according to that message.

KAVL17004-E

An attempt to read the service startup information file has failed.

An attempt to read the service startup initialization file failed during startup of the Remote Monitor Collector service.

S:

Terminates the Remote Monitor Collector service processing.

O:

Check whether the service startup initialization file (*jpgagt.ini*) exists under the following directory:

- In Windows:
installation-folder\agt7\agent\instance-name
- In UNIX:
/opt/jp1pc/agt7/agent/instance-name/

KAVL17005-E

An attempt to read the target information file has failed.
(Target=*monitoring-target-name*)

An attempt to read the monitoring target information file failed during startup of the Remote Monitor Collector service.

S:

Terminates the Remote Monitor Collector service processing.

O:

Check whether the monitoring target information file (*monitoring-target-name.ini*) exists under the following directory:

- In Windows:
installation-folder\agt7\agent\instance-name\targets
- In UNIX:
/opt/jp1pc/agt7/agent/instance-name/targets/

KAVL17006-E

An error occurred in the *function-name* function.
(*en=error-code, arg1=argument-1, arg2=argument-2, arg3=argument-3*)

An error occurred during execution of the function indicated by *function-name*.

S:

Terminates the Remote Monitor Collector service processing.

O:

Collect maintenance data and contact the system administrator. For details about how to collect maintenance data, see the chapter that describes troubleshooting in the *Job Management Partner 1/Performance Management User's Guide*.

KAVL17007-E

A signal interrupted processing. (signal=signal-number)

Processing was canceled by a signal.

S:

Terminates the Remote Monitor Collector service processing.

O:

Collect maintenance data and contact the system administrator. For details about how to collect maintenance data, see the chapter that describes troubleshooting in the *Job Management Partner 1/Performance Management User's Guide*.

KAVL17008-E

Remote Monitor Collector will now stop because an error occurred.

The Remote Monitor Collector service is being stopped because of an error.

S:

Terminates the Remote Monitor Collector service processing.

O:

Check the immediately preceding message that has been output to the common message log and take appropriate action according to that message.

KAVL17009-E

Memory allocation failed. (RecordType=record-type)

Memory allocation failed. If UNKNOWN is displayed in *record-type*, memory allocation failed for multiple record IDs.

S:

Terminates the Remote Monitor Collector service processing.

O:

Increase available memory.

KAVL17010-W

Memory allocation failed. (RecordType=record-type)

Memory allocation failed. If UNKNOWN is displayed in *record-type*, memory allocation failed for multiple record IDs.

S:

Resumes the Remote Monitor Collector service processing.

O:

Increase the available memory.

KAVL17011-W

An attempt to collect the record failed. (RecordType=*record-type*, Target=*monitoring-target-name*)

Acquisition of the record indicated by *record-type* failed.

S:

Resumes the Remote Monitor Collector service processing.

O:

If this message is output more than once in succession, check the monitoring target's system environment settings for any error. If the cause of the error cannot be determined, collect maintenance data and contact the system administrator. For details about how to collect maintenance data, see the chapter that describes troubleshooting in the *Job Management Partner 1/Performance Management User's Guide*.

KAVL17012-W

An invalid value or a value outside the range was specified for the property of the Remote Monitor Collector service.
(property=*property-name*, value=*value-range*, Target=*monitoring-target-name*)

An invalid value or a value outside the permitted range was specified for the indicated property of the Remote Monitor Collector service.

S:

Ignores the specified value and resumes the Remote Monitor Collector service processing. The value of this item remains unchanged.

O:

Check to see if the set value causes problems. If the value is not appropriate, specify an appropriate value.

KAVL17013-W

The collector process failed to start.

Startup of the collection process failed.

S:
Resumes the Remote Monitor Collector service processing.

O:
Collect maintenance data and contact the system administrator. For details about how to collect maintenance data, see the chapter that describes troubleshooting in the *Job Management Partner 1/Performance Management User's Guide*.

KAVL17014-W

The collector process stopped abnormally.
The collection process terminated abnormally.

S:
Resumes the Remote Monitor Collector service processing.

O:
If this message is output more than once in succession, check the monitoring target's system environment settings for any error. If the cause of the error cannot be determined, collect maintenance data and contact the system administrator. For details about how to collect maintenance data, see the chapter that describes troubleshooting in the *Job Management Partner 1/Performance Management User's Guide*.

KAVL17015-W

A performance data file is invalid. (Target=*monitoring-target-name*)
The contents of the performance data storage file are invalid.

S:
Resumes the Remote Monitor Collector service processing.

O:
Collect maintenance data and contact the system administrator. For details about how to collect maintenance data, see the chapter that describes troubleshooting in the *Job Management Partner 1/Performance Management User's Guide*.

KAVL17016-W

Performance data was not saved to the Store database because it is the same as previous performance data. (RecordType=*record-type*, Target=*monitoring-target-name*)

The performance data was not saved in the Store database because it was the same as the previous data.

S:
Resumes the Remote Monitor Collector service processing.

O:

Specify the record collection interval or the collection interval for the collection process in such a manner that the following condition is satisfied: record collection interval \geq collection interval for the collection process.

If the condition record collection interval \geq collection interval for the collection process is satisfied but this warning occurs frequently, either increase the collection interval or reduce the number of monitored hosts in the instance environment.

KAVL17017-W

The record build failed because there is no performance data.
(Target=*monitoring-target-name*)

Record creation failed because there was no performance data.

S:

Resumes the Remote Monitor Collector service processing.

O:

This warning may occur immediately after startup because there is no performance data yet. If this warning occurs even after the specified interval has elapsed since startup, check the following:

In Windows:

- Is the monitored host running?
- Is the WMI service running on the monitored host?
- Are there any errors in the following settings, which were specified when the instance and monitoring target were set up?
 - TargetHost
 - User
 - Password
 - Domain
- Can the name be resolved by the host name (TargetHost) specified when the monitoring target was set up?
- Was the WMI connection setup procedure performed correctly?

In UNIX:

- Is the monitored host running?
- Is the SSH service running on the monitored host?

- Are there any errors in the following settings, which were specified when the instance and monitoring target were set up?
 - TargetHost
 - User
 - PrivateKeyFile
 - Port
- Can the name be resolved by the host name (TargetHost) specified when the monitoring target was set up?
- Was the SSH connection setup procedure performed correctly?

If the cause of the error cannot be determined, collect maintenance data and contact the system administrator. For details about how to collect maintenance data, see the chapter that describes troubleshooting in the *Job Management Partner 1/Performance Management User's Guide*.

KAVL17018-I

The records were successfully saved onto the Store database.
(RecordType=*record-type*, count=*records-count*,
Target=*monitoring-target-name*)

The records indicated in *record-type* have been stored successfully in the Store database.

S:

Resumes the Remote Monitor Collector service processing.

KAVL17019-W

The initialization of interprocess communication failed.

Preparation for communication between the Remote Monitor Collector service and the collection process failed.

S:

Resumes the Remote Monitor Collector service processing.

O:

Processing on the work file, such as open or write processing, may have failed. Check for a shortage of available disk space.

If there is no problem with the available disk space, collect maintenance data and contact the system administrator. For details about how to collect maintenance data, see the chapter that describes troubleshooting in the *Job Management Partner 1/Performance Management User's Guide*.

KAVL17020-W

An error occurred during collection of the record.
(Target=*monitoring-target-name*)

An error occurred during record collection.

S:

Resumes the Remote Monitor Collector service processing.

O:

Collect maintenance data and contact the system administrator. For details about how to collect maintenance data, see the chapter that describes troubleshooting in the *Job Management Partner 1/Performance Management User's Guide*.

KAVL17021-I

A collector process will restart because the system detected that it stopped.

The collection process will be restarted because the system detected termination of the process.

S:

Resumes the Remote Monitor Collector service processing.

KAVL17022-W

Account authentication failed.

Account authentication failed.

S:

Resumes the Remote Monitor Collector service processing.

O:

Check for any errors in the following items, which were specified during instance environment setup:

- RMHost_User
- RMHost_Password
- RMHost_Domain

Chapter

7. Error Handling Procedures

This chapter describes how to handle errors that may occur while you are using Performance Management products. The focus of this chapter's discussion is on handling errors that occur in PFM - RM for Platform. For details about error handling for the entire Performance Management system, see the chapter that describes troubleshooting in the *Job Management Partner 1/Performance Management User's Guide*.

- 7.1 Error handling procedures
- 7.2 Troubleshooting
- 7.3 Log information
- 7.4 Data collected when a problem occurs
- 7.5 How to collect data
- 7.6 Detecting problems within Performance Management
- 7.7 Recovering from Performance Management system errors

7.1 Error handling procedures

This section describes the procedures for handling errors that occur while you are using Performance Management products.

Checking the event

Check the following:

- Event where the error occurred
- Message contents (if a message has been displayed)
- Log information (such as the common message log)

For details about the messages and how to respond to each message, see [6. Messages](#). For details about the log information that is output by the Performance Management products, see [7.3 Log information](#).

Collecting data

Collect data to determine the cause of the error. For details about how to collect the necessary data, see [7.4 Data collected when a problem occurs](#) and [7.5 How to collect data](#).

Checking the problem

Use the collected data to check the cause of the problem. You should also isolate the problem or the affected range.

7.2 Troubleshooting

This section explains how to conduct troubleshooting while you are using Performance Management products. If an error occurs, you should first check to see if any of the events described in this section has occurred.

The following table lists and describes the principal errors that may occur in Performance Management.

Table 7-1: Troubleshooting

No.	Classification	Nature of problem	Subsection
1	Setting up or starting services	<ul style="list-style-type: none"> • A Performance Management program service does not start. • It takes too long for a service to start once startup is requested. • Communication is not performed properly when a program service starts immediately after a Performance Management program service has stopped. • The message <code>The disk capacity is insufficient</code> is displayed, and then the Master Store service or the Remote Monitor Store service stops. 	7.2.1
2	Executing commands	<ul style="list-style-type: none"> • When the <code>jpctool service list</code> command is executed, the names of inactive services are displayed. • When the <code>jpctool db dump</code> command is executed, data other than the specified Store data is output. 	7.2.2
3	Report definitions	<ul style="list-style-type: none"> • There is a time period that is not included in historical reports. 	7.2.3
4	Alarm definitions	<ul style="list-style-type: none"> • The program defined for action execution does not function correctly. • An alarm event is not displayed. 	7.2.4
5	Collecting and managing performance data	<ul style="list-style-type: none"> • The size of the PFM - RM for Platform's Store database is not reduced 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. • PFM - RM for Platform was started, but no performance data is being collected. 	7.2.5

7.2.1 Setting up or starting services

This subsection describes how to handle problems that are related to service setup or service startup.

(1) A Performance Management program service does not start

The following describes the possible causes and the resolutions.

- PFM - Manager is not running.

If PFM - Manager and PFM - RM for Platform are both on the same host, the PFM - RM for Platform services cannot start if PFM - Manager is not running. Check if the PFM - Manager service is running; start it if it is not running. 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 more than one Performance Management program service.

When the same port number is set for multiple Performance Management program services, none of those Performance Management program services can be started.

The default is for the system to assign port numbers automatically, in which case there cannot be any duplicated port numbers. If you set specific port numbers for Performance Management program services during Performance Management setup, check the port numbers that you specified. 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 storage directory.

If any of the directories listed below is set to be inaccessible or does not exist, the Remote Monitor Store service cannot start. Check the specified directory names and attribute settings and correct any errors.

- Store database storage directory
- Store database backup directory
- Store database partial backup directory
- Store database export directory
- Store database import directory

If you specify these directories for multiple Remote Monitor Store services, the Remote Monitor Store services cannot start. Check the specified directory

settings and correct any errors.

- An unauthorized method was used to change a machine's host name.

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 rename a host using an unauthorized method, the Performance Management program services may not start.

- An error occurred in the service control manager.

If you execute the `jpcspm start` command in Windows, the error message `An error occurred in the Windows service control manager` may be displayed and startup of the service may fail. If this has occurred, re-execute the `jpcspm start` command. If the same 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` 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*.

(2) It takes too long for a service to start once startup is requested

It might take a long time for a service to actually start once you execute the `jpcspm start` command or you start a service by choosing the **Services** icon. If this is caused by either of the reasons listed below, the time required for starting the service will be reduced for subsequent startups of the service.

- During the first startup after a new instance has been added, the indexes of the Store database are created, which might cause the services to take longer than usual to start.
- If the Store service is unable to perform normal termination processing for a reason such as a power shut-off, the indexes of the Store database are rebuilt during the next restart, which might cause the services to take longer than usual to start.

(3) Communication is not performed properly when a program service starts immediately after a Performance Management program service has stopped

Immediately after a Performance Management program service has stopped, another program service may be started using the same port that the stopped service was using. In such a case, communication might not be performed properly. You can prevent this problem by doing the following:

- Use fixed port numbers for the Performance Management program services.

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.***(4) The message "The disk capacity is insufficient" is displayed, and then the Master Store service or the Remote Monitor Store service stops**

Data storage in the Store database is interrupted when there is not enough free space on the disk used by the Store database. In such a case, the message `The disk capacity is insufficient` is displayed and the Master Store service or the Remote Monitor Store service stops.

If this message is displayed, take one of the following actions:

- Provide sufficient disk space.

Determine the amount of disk space required for the Store database and change the Store database storage location to a disk with sufficient available space. For details about how to determine the disk space required for the Store database, see *A. Estimating System Requirements*. For details about how to change the Store database storage location, see *2.6.1 Changing performance data storage locations*.

- Change the data retention conditions for the Store database.

Change the data retention conditions for the Store database by adjusting the maximum data capacity. For details about how to change the data retention conditions 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 service or the Remote Monitor Store service will not start 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 service or the Remote Monitor Store service. If no backup is available, initialize the Store database and then start the Master Store service or the Remote Monitor Store service. To initialize the Store database, you must delete all the following files from the storage directory for the Store database:

- Files with the extension `.DB`
- Files with the extension `.IDX`

For details about the storage directory for the Store database, see *2.6.1 Changing performance data storage locations*.

7.2.2 Executing commands

This subsection describes how to handle problems that are related to command execution.

(1) When the `jpctool service list` command is executed, the names of inactive services are displayed

The following describes the possible causes and the resolutions.

- 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` 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 machine's host name was changed without deleting Performance Management program service information.

If a machine's host name was changed without deleting Performance Management program service information, the service information corresponding to the 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` command to delete 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` command is executed, data other than the specified Store data is output

If you execute the `jpctool db dump` command more than once with the same export file name specified for the same Master Store service or Remote Monitor Store service, the subsequent output results will overwrite the initial output results. Specify a different export file name each time you execute the `jpctool db dump` command for the same Master Store service or Remote Monitor Store service. For details about how to export the Store database, see the chapter that describes management of operation monitoring data in the *Job Management Partner 1/Performance Management User's Guide*.

7.2.3 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 included in historical reports

If the current time of the system on which PFM - RM for Platform is installed is changed to a future time, historical information from the time at which the change was made to the specified time is not stored. Therefore, the status of the monitoring target

during that time period is not displayed in historical reports.

7.2.4 Alarm definitions

This subsection describes how to handle problems that are related to alarm definitions.

(1) The program defined for action execution does not function correctly

The following describes a possible cause and the resolution.

- PFM - Manager or the Action Handler service at the target host is not running.

Actions cannot be executed when PFM - Manager or the Action Handler service at the target host is inactive. To execute actions, make sure that PFM - Manager and the Action Handler service are running at the target host.

(2) An alarm event is not displayed

The following describes a possible cause and the resolution.

- PFM - Manager is not running.

When PFM - Manager is inactive, the system cannot issue alarm events from PFM - RM for Platform correctly. To monitor alarm events, make sure that PFM - Manager is running.

7.2.5 Collecting and managing performance data

This subsection describes how to handle problems that are related to collection and management of Performance Management performance data.

(1) The size of the PFM - RM for Platform's Store database is not reduced even though the data retention period was shortened

If the Store database has reached its maximum size but shortening the data retention period does not reduce the file size, you need to 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 inconsistency might have occurred in the Store database due to an unexpected service stop or machine shutdown. Take one of the following actions:

- If you have backed up the Store database, restore it.
- If you have not backed up the Store database, stop the Remote Monitor Store

service, delete the corresponding database files (*.DB and *.IDX files), and then restart the service.

(3) PFM - RM for Platform was started, but no performance data is being collected

If the Status field value in the PD record is ERROR, take appropriate action based on the Reason field value.

The following describes the items to be checked for each Reason field value.

(a) Connection failed: Connection to the monitored host failed.

In Windows

- Is the monitored host running?
- Is the WMI service running on the monitored host?
- Were the settings for the following specified correctly when the monitoring target was set up?[#]
 - TargetHost
- Can the name be resolved by the host name (TargetHost) that was specified when the monitoring target was set up?
- Were the following WMI connection setup procedures performed correctly?
 - DCOM setting at the PFM - RM host
 - WMI namespace setting at the monitored host
 - Firewall setting at the monitored host
- If there is a firewall between PFM - RM for Platform and the monitoring target, is the firewall passage port set appropriately?

In UNIX

- Is the monitored host running?
- Is the SSH service running on the monitored host?
- Were the following settings specified correctly when the monitoring target was set up?[#]
 - Target Host
 - Port
 - User
 - PrivateKeyFile
- Can the name be resolved by the host name (TargetHost) that was

specified when the monitoring target was set up?

- Was the SSH connection setup procedure performed correctly?
- If there is a firewall between PFM - RM for Platform and the monitoring target, is the firewall passage port set appropriately?

#

To check the settings, execute the `jpccconf target setup` command. Alternatively, use PFM - Web Console to check the settings by displaying the Remote Monitor Configuration properties from the Remote Monitor Collector service of PFM - RM for Platform.

(b) Authorization failed: Authorization of the monitored host failed.

In Windows

- Were the following settings specified correctly when the monitoring target was set up?#
 - User
 - Password
 - Domain
- Were the following WMI connection setup procedures performed correctly?
 - DCOM setting on the PFM - RM host
 - DCOM setting on the monitored host

#

To check the settings, execute the `jpccconf target setup` command. Alternatively, use PFM - Web Console to check the settings by displaying the Remote Monitor Configuration properties from the Remote Monitor Collector service of PFM - RM for Platform.

(c) Value other than Connection failed or Authorization failed

- Collect maintenance data and contact the system administrator.
- In a Windows environment, check the application event log and take appropriate action.

To use PFM - RM for Platform to collect performance data for the records listed below, PFM - RM for Platform must be set up so that objects can be monitored on the performance console.# The table below lists the objects corresponding to each record, the source (service) names that are output to the event log, and the performance extension DLLs.

#

You can use **Performance** to check the object name that corresponds to each record. If there is no corresponding object, specify the settings according to the procedure provided in Microsoft Knowledge Base by Microsoft so that the objects can be monitored.

Table 7-2: Objects corresponding to each record, the source (service) names that are output to the event log, and the performance extension DLLs

No.	Category	Record name (record ID)	Object name	Source (service) name that is output to the event log	Performance extension DLL
1	Disk	Logical Disk Overview (PI_LDSK)	LogicalDisk	WinMgmt	perfdisk.dll
2		Physical Disk Overview (PI_PDSK)	PhysicalDisk		
3	Network-related	Network Interface Overview (PI_NET)	Network Interface	WinMgmt	perfctrs.dll
4	OS in general (such as processors and memory)	System Overview (PI)	Memory	WinMgmt	perfos.dll
5			System		
6			Processor		
7		Processor Overview (PI_CPU)	Processor	WinMgmt	perfos.dll

If the name `WinMgmt` is recorded in the application event log, PFM - RM for Platform might not function correctly or the records corresponding to that source (service) might not be collected. If the application event log contains the events shown in the table below, either reinstall the source (service) or eliminate the cause of the error that is disclosed in Microsoft Knowledge Base, or contact the developer of the source (service) and then repair the environment so that the application event logs are not recorded.

The following table shows examples of application event logs when PFM - RM for Platform is not functioning correctly or the records for the source (service) cannot be collected.

Table 7-3: Examples of application event logs when records are not collected successfully

No.	Event ID	Source (service) name	Event log information
1	37	WinMgmt	WMI ADAP 0x0 was unable to read the <i>file-name</i> performance library due to an unknown problem in the library.
2	41	WinMgmt	WMI ADAP did not create object index <i>n</i> for the performance library <i>service-name</i> because the value was not found by the 009 subkey.
3	61	WinMgmt	WMI ADAP was unable to process the <i>file-name</i> performance library due to a time violation in the open function.

7.2.6 Other problems

We recommend that you check the existing circumstances when other errors occur. If a message is output, check the details of the message. For details about the log information that is output by Performance Management, see *7.3 Log information*.

If you cannot resolve an error by taking the steps described in this section, or if an error occurs that is not described here, collect the data needed to investigate the error and contact the system administrator.

For details about the data you need to collect and how to collect it, see *7.4 Data collected when a problem occurs* and *7.5 How to collect data*.

7.3 Log information

When an error occurs in Performance Management, you need to check the log information and investigate the problem. The following five types of log information are output during operation of Performance Management:

- System log
- Common message log
- Operation status log
- Trace log
- Agent log

This section describes each type of log information.

7.3.1 Types of log information

(1) *System log*

The system log contains log information that reports the system status and errors that have occurred. This log information is output to the following file:

In Windows

Event log file

In 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 might need the log information for the cluster software in order to check such information 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 name and size of the file to which the common message log information is output, see *7.3.2 Log files and directories*. 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

When Performance Management is under logical host operation, the common message log is output to the shared disk. Because a log file on the shared disk is inherited together with the system during failover, messages are 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 file to which the operation status log information is output, see the chapter that describes troubleshooting in the *Job Management Partner 1/Performance Management User's Guide*. For details about the output formats, see the chapter that describes log information in the manual *Job Management Partner 1/Performance Management Reference*.

(4) **Trace log**

The trace log is the log information that is collected in order to investigate the details of an error and determine the processing time required by each process when an error occurs. The trace log is output to a log file for each service of the Performance Management programs.

Notes about logical host operation

When Performance Management is under logical host operation, the common message log is output to the shared disk. Because a log file on the shared disk is inherited together with the system during failover, messages are recorded in the same log file.

(5) **Agent log**

The agent log is the log information for processing related to record collection. It is output by PFM - RM for Platform. In the event of an error, the agent log is collected in order to obtain detailed information about the processing. For details about the agent log, see 7.3.2(3) *Agent log*.

Format

The agent log is output in the following format:
 yyyy/mm/dd hh:mm:ss.sss inf1 inf2 inf3 Message

The following table describes each item that is output.

Table 7-4: Items in the agent log

No.	Item	Description
1	yyyy/mm/dd	Date the log was output (year/month/day)
2	hh:mm:ss.sss	Local time the log was output (hour:minute:second.millisecond)

No.	Item	Description
3	<i>inf1 to inf3</i>	Maintenance information
4	<i>Message</i>	Message

Note

Do not change the time at the PFM - RM host or the update date and time in the agent log file. If this information is changed, the agent log may not be output correctly because the output of the agent log uses information about the last update date and time of the log file.

7.3.2 Log files and directories

This subsection describes the log information that is output from Performance Management programs. For details about the name and size of the file to which the operation status log information is output, see the chapter that describes troubleshooting in the *Job Management Partner 1/Performance Management User's Guide*.

(1) Common message log

This subsection describes the common message log, which is one of the types of log information for Performance Management.

The following table lists the output sources, the log file names, and the amount of disk space used for Windows.

Table 7-5: File names of the common message log (for Windows)

No.	Type of log information	Output source	File name	Disk space used ^{#1} (kilobytes)
1	Common message log	Performance Management	<i>installation-folder</i> \log\jpclog{01 02} ^{#2}	2,048 (x 2)
2			<i>installation-folder</i> \log\jpclogw{01 02} ^{#2}	2,048 (x 2)
3	Common message log (for logical host operation)	Performance Management for logical host operation	<i>environment-folder</i> ^{#3} \jplpc\log\jpclog{01 02} ^{#2}	2,048 (x 2)
4			<i>environment-folder</i> ^{#3} \jplpc\log\jpclogw{01 02} ^{#2}	2,048 (x 2)

#1

The value in parentheses is the number of log files that can be created for a single service. For example, 2,048 (x 2) indicates that a maximum of two log files, each

with a size of 2,048 kilobytes, can be created. In this case, the total available disk space must be 4,096 kilobytes.

#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 suffix 01 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 will be 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.

Wrap-around 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 the suffix 02 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 that log file and then 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 folder is on the shared disk that was specified when the logical host was created.

The following table lists the output sources, the log file names, and the amount of disk space used for UNIX.

Table 7-6: File names of the common message log (for UNIX)

No.	Type of log information	Output source	File name	Disk space used ^{#1} (kilobytes)
1	Common message log	Performance Management	/opt/jp1pc/log/jpclog{01 02} ^{#2}	2,048 (x 2)
2			/opt/jp1pc/log/jpclogw{01 02} ^{#2}	2,048 (x 2)

No.	Type of log information	Output source	File name	Disk space used ^{#1} (kilobytes)
3	Common message log (for logical host operation)	Performance Management for logical host operation	<i>environment-directory</i> ^{#3} <i>/jplpc/log/jpclog{01 02}</i> ^{#2}	2,048 (x 2)
4			<i>environment-directory</i> ^{#3} <i>/jplpc/log/jpclogw{01 02}</i> ^{#2}	2,048 (x 2)

#1

The value in parentheses is the number of log files that can be created for a single service. For example, 2,048 (x 2) indicates that a maximum of two log files, each with a size of 2,048 kilobytes, can be created. In this case, the total available disk space must be 4,096 kilobytes.

#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 suffix 01 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 will be 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.

Wrap-around 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 the suffix 02 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 that log file and then 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 the 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 subsection describes the trace log, which is one of the types of log information for Performance Management.

The following table lists the output sources and the storage folder names for Windows.

Table 7-7: Names of trace log storage folders (for Windows)

No.	Type of log information	Output source	Folder name
1	Trace log	Action Handler service	<i>installation-folder\bin\action\log\</i>
2		Performance Management command	<i>installation-folder\tools\log\</i>
3		Remote Monitor Collector service	<i>installation-folder\agt7\agent\instance-name\log\</i>
4		Remote Monitor Store service	<i>installation-folder\agt7\store\instance-name\log\</i>
5		Status Server service	<i>installation-folder\bin\statsvr\log\</i>
6	Trace log (for logical host operation)	Action Handler service	<i>environment-folder#\jplpc\bin\action\log\</i>
7		Performance Management command	<i>environment-folder#\jplpc\tools\log\</i>
8		Remote Monitor Collector service	<i>environment-folder#\jplpc\agt7\agent\instance-name\log\</i>
9		Remote Monitor Store service	<i>environment-folder#\jplpc\agt7\store\instance-name\log\</i>

#

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

The following table lists the output sources and the storage directory names for UNIX.

Table 7-8: Names of trace log storage directories (for UNIX)

No.	Type of log information	Output source	Directory name
1	Trace log	Action Handler service	/opt/bin/action/log/
2		Performance Management command	/opt/jp1pc/tools/log/
3		Remote Monitor Collector service	/opt/jp1pc/agt7/agent/instance-name/log/
4		Remote Monitor Store service	/opt/jp1pc/agt7/store/instance-name/log/
5		Status Server service	/opt/jp1pc/bin/statsvr/log/
6	Trace log (for logical host operation)	Action Handler service	environment-directory [#] /jp1pc/bin/action/log/
7		Performance Management command	environment-directory [#] /jp1pc/tools/log/
8		Remote Monitor Collector service	environment-directory [#] /jp1pc/agt7/agent/instance-name/log/
9		Remote Monitor Store service	environment-directory [#] /jp1pc/agt7/store/instance-name/log/

#

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

(3) Agent log

This subsection describes the agent log of PFM - RM for Platform, which is one of the types of log information for Performance Management.

The following table lists the output sources, output targets, log file names, and disk space used for Windows.

Table 7-9: Agent log files (for Windows)

No.	Type of log information	Output source	Output target	File name	Default disk space used ^{#1} (megabytes)
1	Normal log	PFM - RM for Platform	<i>installation-folder</i> \agt7\agent\ <i>instance-name</i> \log\	collect_ <i>nn</i> ^{#2}	3 (x 4) ^{#3}
2				timer_ <i>nn</i> ^{#2}	
3				target_monitoring-target-name_ <i>nn</i> ^{#2}	
4	Normal log (for logical host operation)	PFM - RM for Platform	<i>environment-folder</i> ^{#4} \jplpc\agt7\agent\ <i>instance-name</i> \log\	collect_ <i>nn</i> ^{#2}	3 (x 4) ^{#3}
5				timer_ <i>nn</i> ^{#2}	
6				target_monitoring-target-name_ <i>nn</i> ^{#2}	

#1

You can use the following methods to check and change the maximum file size for the agent log:

- `jpcconf inst` command
- Remote Monitor Configuration property in the PFM - Web Console window

For details about how to change the maximum file size with the `jpcconf inst` command, see 2.6.2 *Updating an instance environment*.

#2

The agent log uses the wrap-around method. The most recent log information is added to the log file without deleting existing log information. When the size of one log file exceeds the specified size, a new file with the log file number incremented by 1 is created. When the number of log files reaches 4 (fixed), log information is written over in the first file. In the file name, *nn* indicate a number from 01 to 04.

#3

The value in parentheses is the number of log files. For example, 3 (x 4) indicates that a maximum of four log files, each with a size of 3 megabytes, can be created. In this case, the total available disk space must be 12 megabytes.

#4

The environment folder is on the shared disk that was specified when the logical

host was created.

The following table lists the output sources, output targets, log file names, and disk space used for UNIX.

Table 7-10: Agent log files (for UNIX)

No.	Type of log information	Output source	Output target	File name	Default disk space used ^{#1} (megabytes)
1	Normal log	PFM - RM for Platform	/opt/jp1pc/agt7/agent/instance-name/log/	collect_ <i>nn</i> ^{#2}	3 (x 4) ^{#3}
2				timer_ <i>nn</i> ^{#2}	
3				target_monitoring-target-name_ <i>nn</i> ^{#2}	
4	Normal log (for logical host operation)	PFM - RM for Platform	environment-directory ^{#4} /jp1pc/agt7/agent/instance-name/log/	collect_ <i>nn</i> ^{#2}	3 (x 4) ^{#3}
5				timer_ <i>nn</i> ^{#2}	
6				target_monitoring-target-name_ <i>nn</i> ^{#2}	

#1

You can use the following methods to check and change the maximum file size for the agent log:

- `jpccconf inst` command
- Remote Monitor Configuration property in the PFM - Web Console window

For details about how to change the maximum file size with the `jpccconf inst` command, see 2.6.2 *Updating an instance environment*.

#2

The agent log employs the wrap-around method. The most recent log information is added to the log file without deleting the existing log information. When the size of one log file exceeds the specified size, a new file with the log file number incremented by 1 is created. When the number of log files reaches 4 (fixed), log information is written over in the first file. In the file name, *nn* indicate a number from 01 to 04.

#3

The value in parentheses is the number of log files. For example, 3 (x 4) indicates that a maximum of four log files, each with a size of 3 megabytes, can be created.

In this case, the total available disk space must be 12 megabytes.

#4

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

7.4 Data collected when a problem occurs

This section describes the data that needs to be collected when an error has occurred. Performance Management provides commands for collecting the needed data in the batch mode. Use the `jpcras` command to collect PFM - RM for Platform data. The tables in the following subsections indicate the data that can be collected by the `jpcras` command.

Note

The data collected by the `jpcras` command depends on options you specify when you execute the command. For details about the command's options and the data that is collected, see the chapter that describes commands in the manual *Job Management Partner 1/Performance Management Reference*.

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 online, you can use the `jpcras` command to also collect the log information on the shared disk in the batch mode.
- To investigate problems during failover, you need the information existing before and after the failover. This means that you need information from both the executing system and the standby system.
- When Performance Management runs on a logical host, its startup and termination are controlled by the cluster software. Therefore, you need information about the cluster software in order to investigate a Performance Management that is running on a logical host. Compare the cluster software operation and the Performance Management operation.

7.4.1 Data to be collected in a Windows environment

(1) Log information about the OS

The following table lists the log information about the OS that needs to be collected.

Table 7-11: Log information about the OS (for Windows)

No.	Type of information	Overview	Default file name	Collection by the <code>jpcras</code> command
1	System log	Windows event log	--	Y

No.	Type of information	Overview	Default file name	Collection by the jpcras command
2	Process information	List of processes	--	Y
3	System file	hosts file	<i>system-folder</i> \system32\drivers\etc\hosts	Y
4		services file	<i>system-folder</i> \system32\drivers\etc\services	Y
5	OS information	System information	--	Y
6		Network status	--	Y
7		Host name	--	Y
8	Dump information	Dr. Watson log file ^{#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

--: Not applicable

#1

In Windows Server 2008, **Dr. Watson** has been replaced by **Problem Reports and Solutions**.

#2

If you have set the log files to be output to a different folder, collect the data from the applicable folder.

(2) Information about Performance Management

The following table lists the Performance Management information that needs to be collected. In the case of a network connection error, you must also collect applicable files from the machine at the connection destination.

Table 7-12: Information about Performance Management (for Windows)

No.	Type of information	Overview	Default file name	Collection by the jpcras command
1	Common message log	Message log output from Performance Management (sequential file method)	<i>installation-folder\log\jpclog{01 02}#1</i>	Y
2		Message log output from Performance Management (wrap-around file method)	<i>installation-folder\log\jpclogw{01 02}#1</i>	Y
3	Configuration information	Each configuration information file	--	Y
4		Output results of the jpc tool service list command	--	Y
5	Version information	Product version	--	Y
6		Historical information	--	Y
7	Database information	Remote Monitor Store service	<ul style="list-style-type: none"> • <i>installation-folder\agt7\store\instance-name\STPD</i> • <i>installation-folder\agt7\store\instance-name\following-files-under-STPI-folder</i> <ul style="list-style-type: none"> • *.DB • *.IDX 	Y
8	Trace log	Trace information for each service of the Performance Management program	--#2	Y

No.	Type of information	Overview	Default file name	Collection by the jpcras command
9	Agent log	Normal log of the processing related to record collection by PFM - RM for Platform	<ul style="list-style-type: none"> <i>installation-folder</i>\agt7\agent\<i>instance-name</i>\log\collect_{01 02 03 04}#4 <i>installation-folder</i>\agt7\agent\<i>instance-name</i>\log\timer_{01 02 03 04}#4 <i>installation-folder</i>\agt7\agent\<i>instance-name</i>\log\target_<i>monitoring-target-name</i>_{01 02 03 04}#4 	Y
10	Work data	Work data during performance data collection	<ul style="list-style-type: none"> \agt7\agent\<i>instance-name</i>\targets* \agt7\agent\<i>instance-name</i>\groups* 	Y
11	Install log ^{#3}	Message log during installation (in Windows Server 2003)	%TEMP%\pfm_inst.log	N
		Message log during installation (in Windows Server 2008)	%WINDOWS%\TEMP\HCDINST\ <i>product-model-name</i> .LOG	N

Legend:

Y: Can be collected

N: Cannot be collected

--: Not applicable

#1

For details about how to output log information to the log files, see the chapter that describes detection of Performance Management failures in the *Job Management Partner 1/Performance Management User's Guide*.

#2

For details about the trace log storage folder, see 7.3.2(2) *Trace log*.

#3

Collect this log information if installation fails. %TEMP% indicates the folder that is set in TEMP when the set command is executed at the command prompt.

#4

For details about the agent log output method and the storage folder, see *7.3.2 Log files and directories*.

(3) Operation information

You need the following information about the operation that was underway when an error occurred:

- Details of the operation
- Time the error occurred
- Machine configuration (such as the version of each OS, host name, and configuration of PFM - Manager and PFM - RM for Platform)
- Whether the problem is repeatable
- Performance Management user name used during logon, if the user has logged on from PFM - Web Console

(4) Error information on screen displays

Obtain a hardcopy of the following information:

- The window operation when the application error occurred
- The error message dialog box (including the contents of detailed information if displayed)
- The Command Prompt window or the Administrator Console window, if the error occurred during command execution

(5) User dump (in Windows Server 2008)

In Windows Server 2008, if a Performance Management process stops due to an application error, obtain a user dump.

(6) Collecting problem reports (in Windows Server 2008)

In Windows Server 2008, if a Performance Management process stops due to an application error, obtain a problem report.

(7) Other information

You also need the following information:

- The contents of **System** and **Application** in the Event Viewer window of Windows
- The contents of **System Information**, which is displayed by choosing **Accessories** and then **System Tools**
- The arguments specified in the command, if the error occurred during command

execution

7.4.2 Data to be collected in a UNIX environment

(1) Log information about the OS

The following table lists the log information about the OS that needs to be collected.

Table 7-13: Log information about the OS (for UNIX)

No.	Type of information	Overview	Default file name	Collection by the jpcras command
1	System log	syslog	--	Y [#]
2	Process information	List of processes	--	Y
3	System file	hosts file	/etc/hosts	Y
4		services file	/etc/services	Y
5	OS information	Patch information	--	Y
6		Kernel information	--	Y
7		Version information	--	Y
8		Network status	--	Y
9		Environment variable	--	Y
10		Host name	--	Y
11	Dump information	core file	--	Y

Legend:

Y: Can be collected

--: Not applicable

#

If the system is set to output to a path and file name that are not the default, the information cannot be collected. Use an appropriate method to collect the data.

(2) Information about Performance Management

The following table lists the Performance Management information that needs to be collected. In the case of a network connection error, you must also collect applicable files from the machine at the connection destination.

Table 7-14: Information about Performance Management (for UNIX)

No.	Type of information	Overview	Default file name	Collection by the jpcras command
1	Common message log	Message log output from Performance Management (sequential file method)	/opt/jp1pc/log/jpclog{01 02} ^{#1}	Y
2		Message log output from Performance Management (wrap-around file method)	/opt/jp1pc/log/jpclogw{01 02} ^{#1}	Y
3	Configuration information	Each configuration information file	--	Y
4		Output results of the jpc tool service list command	--	Y
5	Version information	Product version	--	Y
6		Historical information	--	Y
7	Database information	Remote Monitor Store service	<ul style="list-style-type: none"> • /opt/jp1pc/agt7/store/instance-name/*.DB • /opt/jp1pc/agt7/store/instance-name/*.IDX 	Y
8	Trace log	Trace information for each service of the Performance Management program	-- ^{#2}	Y

No.	Type of information	Overview	Default file name	Collection by the jpcras command
9	Agent log	Normal log of the processing related to record collection by PFM - RM for Platform	<ul style="list-style-type: none"> • /opt/jp1pc/agt7/agent/<i>instance-name</i>/log/collect_{01 02 03 04}^{#3} • /opt/jp1pc/agt7/agent/<i>instance-name</i>/log/timer_{01 02 03 04}^{#3} • /opt/jp1pc/agt7/agent/<i>instance-name</i>/log/target_<i>monitoring-target-name</i>_{01 02 03 04}^{#3} 	Y
10	Work data	Work data during performance data collection	<ul style="list-style-type: none"> • /opt/jp1pc/agt7/agent/<i>instance-name</i>/targets/* • /opt/jp1pc/agt7/agent/<i>instance-name</i>/groups/* 	Y
11	Install log ^{#4}	Standard log of Hitachi Program Product Installer	<ul style="list-style-type: none"> • /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

Legend:

Y: Can be collected

N: Cannot be collected

--: Not applicable

#1

For details about how to output log information to the log files, see the chapter that describes detection of Performance Management failures in the *Job Management Partner 1/Performance Management User's Guide*.

#2

For details about the trace log storage directory, see *7.3.2 Log files and directories*.

#3

For details about the agent log output method and the storage directory, see *7.3.2 Log files and directories*.

#4

Collect this log information if installation fails.

(3) Operation information

You need the following information about the operation that was underway when the error occurred:

- Details of the operation
- Time the error occurred
- Machine configuration (such as the version of each OS, host name, and configuration of PFM - Manager and PFM - RM for Platform)
- Whether the problem is repeatable
- Performance Management user name used during logon, if the user has logged on from PFM - Web Console

(4) Error information on screen displays

Obtain a hardcopy of the following information:

- The window operation when the application error occurred
- The messages output to the console, if the error occurred during command execution

(5) Other information

You also need the following information:

- The arguments specified in the command, if the error occurred during command execution

7.5 How to collect data

This section describes how to collect data in the event of an error.

7.5.1 How to collect data in a Windows environment

(1) *Collecting dump information (in Windows Server 2008)*

To collect dump information in a Windows Server 2008 environment:

1. Open Task Manager.
2. Select the **Processes** tab.
3. Right-click the process name for which you want to collect dump information, and then select **Create Dump File**.

Dump files are stored in the following folder:

system-drive\Users*user-name*\AppData\Local\Temp

4. Obtain the dump file from the folder created in step 3.

If you have changed the environment variable settings so that dump files are output to a different folder, obtain the dump file from that 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 Administrator permissions 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 command extensions of the command interpreter:
`cmd /E:ON`
3. Execute the `jpcras` command, with the data to be collected and the data storage folder to be used specified.

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 *` command is executed internally in order to obtain a list of PFM services and to 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 a while for the `jpctool service list -id * -host *` command to execute. In such a case, you can suppress execution of the `jpctool service list -id * -host *` command, thus reducing the command execution time, by specifying 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*.

Note on executing the command in a Windows Server 2008 environment

If the user account control functionality (UAC) is enabled in the operating system, the User Account Control dialog box might be displayed during command execution. If it is displayed, click the **Continue** button to continue data collection, or click the **Cancel** button to cancel data collection.

(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 the executing system and the standby system.

Use the `jpccras` command to collect data needed to determine the cause of an error. Note that an OS user with Administrator permissions must execute the procedure described below.

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. Execute the `jpccras` command in both the executing system and the standby system, with the data to be collected and the data storage folder to be used specified.

The following `jpccras` command stores all the available information in the `c:\tmp\jpc\agt` folder:

```
jpccras c:\tmp\jpc\agt all all
```

Executing the `jpccras` command without the `lhost` argument specified collects all the Performance Management information on the physical and logical hosts at that 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 offline, files will not be acquired from the shared disk, but the command will terminate normally without resulting in an error.

Note

Execute the data collection command at both the executing node and the

standby node to collect information. To examine an event before and after failover, you need the information from both systems (executing and standby).

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 in Performance Management. Collect the information that provides 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, check the Windows event log. Also output the log to a file.

(5) Checking information about the operation

Check and save information about the operation that was underway when the error occurred. The following lists the information that you need to check and save:

- Details of the operation
- Time the error occurred
- Machine configuration (such as the version of each OS, host name, and configuration of PFM - Manager and PFM - RM for Platform)
- Whether the problem is repeatable
- Performance Management user name used during logon, if the user has logged on from PFM - Web Console

(6) Collecting error information on screen displays

Obtain a hardcopy of the following information:

- The window operation when the application error occurred
- The error message dialog box

If there is detailed information, also make a hardcopy of that information.

- The Command Prompt window or the Administrator Console window, if the error occurred during command execution

To print the Command Prompt window or the Administrator Console window, specify the following settings for the Command Prompt Properties window:

- **Edit options** on the **Options** page
Select **Quick Edit Mode**.

- **Layout** page

For **Screen buffer size**, set **Height** to 500.

(7) **Collecting other information**

Information to be collected for all operating systems

- If the error occurred during command execution, the argument specified for the command
- Contents of the dialog box displayed by choosing **Accessories**, **System Tools**, and then **System Information**

In Windows Server 2003

- Contents of **System** and **Application** in the Windows Event Viewer window

In Windows Server 2008

- Contents of **System** and **Application** under **Windows Logs** in the left pane of the Windows Event Viewer window

7.5.2 How to collect data in a UNIX environment

(1) **Executing the data collection command**

Use the `jpccras` command to collect data needed to determine the cause of an error. Note that an OS user with `root` user permissions 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. Execute the `jpccras` command with the data to be collected and the data storage directory to be used specified.

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 is compressed and stored in the specified directory by the `tar` and `compress` commands. The file name is as follows:

```
jpccrasYYMMDD#.tar.Z
```

#: *YYMMDD* is replaced with the year, month, and day.

When you execute the `jpccras` command, the `jpctool service list -id * -host *` command is executed internally in order to obtain a list of PFM services and to 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 may take a while for the `jpctool service list -id * -host *` command to execute. In such a case, you can suppress execution of the `jpctool service list -id * -host *` command, thus reducing the command execution time, by specifying 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 the executing system and the standby system.

Use the `jpccras` command to collect data needed to determine the cause of an error. Note that an OS user with the `root` user permissions must execute the procedure described below.

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. Execute the `jpccras` command in both the executing system and the standby system, with the data to be collected and the data storage directory to be used specified.

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 is compressed and stored in the specified directory by the `tar` and `compress` commands. The file name is as follows:

```
jpccrasYYMMDD#.tar.z
```

YYMMDD is replaced with the year, month, and day.

Executing the `jpccras` command without the `lhost` argument specified collects all the Performance Management information on the physical and logical hosts at that 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 will not be acquired from the shared disk, but the command will terminate normally without resulting in an error.

Note

Execute the data collection command at both the executing node and the

standby node to collect information. To examine an event before and after failover, you need the information from both systems (executing and standby).

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 in Performance Management. Collect the information that provides control requests, such as startup and termination of Performance Management from the cluster software, and their results.

(3) Checking information about the operation

Check and save information about the operation that was underway when the error occurred. The following lists the information that you should check and save:

- Details of the operation
- Time the error occurred
- Machine configuration (such as the version of each OS, host name, and configuration of PFM - Manager and PFM - RM for Platform)
- Whether the problem is repeatable
- Performance Management user name used during logon, if the user has logged on from PFM - Web Console

(4) Collecting error information on screen displays

Collect the following error information:

- The messages that were output to the console, if the error occurred during command execution

(5) Collecting other information

You also need the following information:

- The arguments specified in the command, if the error occurred during command execution

7.6 Detecting problems within Performance Management

You can detect Performance Management errors by using JP1/Base, an integrated system monitoring product, to monitor the Performance Management log files. Performance Management also provides the status management function for checking the status of each service of PFM - Manager and PFM - RM for Platform in the event of an error. This function enables the system administrator to quickly detect an error, obtain the accurate status of the service that caused the error, and take appropriate action to recover the error.

Performance Management provides the health check function for detecting Performance Management errors. This function monitors the operating status of PFM - RM for Platform and PFM - RM host and displays the monitoring results on PFM - Web Console as changes in the operating status of PFM - RM for Platform. The automatic PFM service restart function enables the PFM service to be restarted automatically if the PFM service has stopped abnormally for some reason.

Use of the status management function that enables you to check the detailed status of Performance Management services is a prerequisite for using the health check function to monitor the operating status of PFM - RM for Platform and for using the automatic PFM service restart function to restart the PFM service automatically. Therefore, the target PFM - RM for Platform's version 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 use JP1/Base (integrated system monitoring product) to monitor the Performance Management log files in order to detect Performance Management errors. The system administrator can then detect a failure, identify the cause, and take appropriate action for recovery. For details about detection of Performance Management failures, see the chapter that describes detection of Performance Management failures in the *Job Management Partner 1/Performance Management User's Guide*.

7.7 Recovering from Performance Management system errors

If the Performance Management server fails, you must restore it from backup files to its normal status before the failure. For details about how to restore the status that existed before a failure, see the chapter that describes troubleshooting in the *Job Management Partner 1/Performance Management User's Guide*.

Appendixes

- A. Estimating System Requirements
- B. List of Identifiers
- C. List of Processes
- D. List of Port Numbers
- E. Properties of PFM - RM for Platform
- F. List of Directories and Files
- G. Migration Procedure and Notes on Migration
- H. Version Compatibility
- I. Outputting Action Log Data
- J. Glossary

A. Estimating System Requirements

Before you configure a system, you need to first evaluate the performance of the computer to be used to ensure that it is capable of running PFM - RM for Platform.

A.1 Memory requirements

The memory requirements depend on the setup conditions and on the conditions under which PFM - RM for Platform will be used.

(1) Formula

The following table shows the formula for estimating the memory requirement of PFM - RM for Platform.

Table A-1: Memory requirement

Status of PFM - RM for Platform	Memory requirement (megabytes)		
	Windows Server 2003	Windows Server 2008	Linux
Operation in the initial status	$a + b + c$		

Legend:

a: Memory required for the `jpcagt7` process

b: Memory required for the `jpcsto` process

c: Memory required for the `jpc7collect` process

The following table lists the memory requirement of each process.

Table A-2: Memory requirements of processes

Process name	Memory requirement (megabytes)		
	Windows Server 2003	Windows Server 2008	Linux
<code>jpcagt7</code>	40	50	35
<code>jpcsto</code>	40	50	30
<code>jpc7collect</code>	45	50	15

A.2 Disk space requirements

The required disk space depends on the number of records to be used to store

performance data.

The following subsections provide estimates of the disk space required for PFM - RM for Platform.

(1) Disk space requirement for the entire system

The disk space requirement for PFM - RM for Platform depends on the file sizes for the following data:

- Remote Monitor Store database
- Number of PFM - RM for Platform instances
- Number of hosts monitored by PFM - RM for Platform
- Agent logs

The following table shows how to estimate the disk space requirement for the entire system.

Table A-3: Disk space requirement for the entire system

Status of PFM - RM for Platform	Disk space requirement (megabytes)
	Windows Server 2003 / Windows Server 2008 / Linux
During installation [#]	5
During operation	$a + b$

Legend:

a:

Disk space required during installation

b:

Total disk space required for each instance.

The formula for estimating the disk space required for a single instance follows:

$$100 + c + d + f$$

c:

Disk space required for instance logs:

Default: 24 megabytes (3 megabytes x 8 files)

Maximum: 256 megabytes (32 megabytes x 8 files)

d:

Total disk space required for each monitored host.

The formula for estimating the disk space required for a single monitored host follows:

$$1 + e$$

e:

Disk space required for logs per monitored host:

Default: 12 megabytes (3 megabytes x 4 files)

Maximum: 128 megabytes (32 megabytes x 4 files)

f:

Total disk space required for the Store database.

This is the total of the disk space required for each monitored host and the disk space required for group agents. For details about the disk space requirement for the Store database, see (2) *Disk space requirement for the Store database*.

#

During installation, you need twice as much disk space as the size of the program.

(2) **Disk space requirement for the Store database**

This subsection presents the formulas for estimating the disk space required for the Store database of PFM - RM for Platform and provides an example of making such an estimate.

(a) **Formulas**

This subsection describes how to estimate the disk space requirement, number of files, number of directories, and number of files that are opened by the Store service.

■ **Disk space requirement**

The disk space requirement for the Store database is the sum of the disk space requirement for each record type. For the PI record type, the disk space requirement is the sum of the disk space requirement for each summary type.

The following shows the formula for estimating the disk space requirement for each record type:

Disk space requirement for each record type (bytes)

$$X = \{ (e + 2) \times f + (d + 60) \times \{ ((e + 2) \times f) / (65,250 - d) + 1 \}^{\#} \} \times a/b \times (c + 1) \times 1.1$$

Note

a:

The value depends on the record type and summary type. See Table A-4.

b:

The value depends on the record type and summary type. See Table A-4.

c:

Value set as the retention period for historical data. For details about the default retention period, see Table A-5. The units depend on the record type and summary type. For details about the units, see Table A-4.

d:

Size of the fixed part of each record that collects historical data. For details about the size of the fixed part of each record, see the record size in 5. *Records*.

e:

Size of the variable part of each record that collects historical data. For details about the size of the variable part of each record, see the record size in 5. *Records*.

f:

Number of instances for each record that collects historical data (1 for a single-instance record). For details about how to calculate the number of record instances, see Table A-6. If a calculation method is provided for a record, use that method.

If the number of instances is 2 or greater, use the next even multiple of 4. For example, if the number of instances is 2, use 4 as the value of *f*. If the number of instances is 13, use 16 as the value of *f*. If the number of instances is 1, use 1 as the value of *f*.

For the number of instances for a group agent, use the highest number of monitored instances that have been registered. For example, if the number of instances of `PI_CPU` for monitoring target A is 5 and the number of instances of `PI_CPU` for monitoring target B is 2, use 5 as the number of instances for the group agent.

#

Round off the result of $\{ ((e + 2) \times f) / (65,250 - d) + 1 \}$.

The following table shows the values to be set in variables *a*, *b*, and *c*.

Table A-4: Values to be set in variables a, b, and c

Record type	Summary type	Variable		
		a	b	c
PD	--	1,440	$g/60$	Retention period (days)
PI	Minute	1,440	$1 + (g - 1)/60^{\#}$	Retention period (days)
	Hour	24	$1 + (g - 1)/3,600^{\#}$	Retention period (days)
	Day	7	$1 + (g - 1)/86,400^{\#}$	Retention period (weeks)
	Week	1	$1 + (g - 1)/604,800^{\#}$	Retention period (weeks)
	Month	1	$1 + (g - 1)/2,592,000^{\#}$	Retention period (months)
	Year	1	$1 + (g - 1)/31,622,400^{\#}$	Retention period (years)

Legend:

--: Not applicable

g: Value set as the historical data collection interval (seconds)

#

Round off the calculation result of variable *b* for the PI record type.

The following table lists the retention periods for historical data.

Table A-5: Retention periods for historical data

Record type	Data type	Retention period
PD	--	7 days
PI	Minute-by-minute	1 day
	Hourly	7 days
	Daily	54 weeks
	Weekly	54 weeks
	Monthly	1 year
	Yearly	Unlimited

Legend:

--: Not applicable

The following table shows how to estimate the number of record instances.

Table A-6: How to estimate the number of record instances

Record	How to estimate the number of instances	Checking required
PD	1 (because this is a single-instance record)	--
PI	1 (because this is a single-instance record)	--
PI_CPU	Number of processors on the monitored host + 1 (_Total).	Y
PI_LDSK	Number of logical disks on the monitored host + 1 (_Total).	Y
PI_NET	Number of network interfaces on the monitored host + 1 (_Total).	Y
PI_PDSK	Number of physical disks allocated to the monitored host + 1 (_Total).	Y

Legend:

--: Not applicable

Y: The number of instances must be checked.

The following describes how to check the number of record instances.

In Windows

Check the number of record instances in the Performance window, which is displayed by choosing **Administrative Tools** from the **Start** menu and then choosing **Performance**. The following table shows the correspondence between the information displayed in the Performance window and the records.

Table A-7: Correspondence between the information displayed in the Performance window and the records

Record	Description
PI_CPU	Check the number displayed for the instances of the following performance object (including _Total): <ul style="list-style-type: none"> • Processor
PI_LDSK	Check the number displayed for the instances of the following performance object (including _Total): <ul style="list-style-type: none"> • Logical disk

Record	Description
PI_NET	Check the number displayed for the instances of the following performance object + 1 (including <code>_Total</code>): <ul style="list-style-type: none"> • Network interface
PI_PDSK	Check the number displayed for the instances of the following performance object (including <code>_Total</code>): <ul style="list-style-type: none"> • Physical disk

In UNIX

Execute a command to check the number of record instances. The following table shows the commands used to check the number of record instances.

Table A-8: Commands used to check the number of record instances

Record	Commands				Description
	HP-UX	Solaris	AIX	Linux	
PI_CPU	<code>sar -Muv 1 1</code>	<code>mpstat -p 1 2</code>	<code>sar -u -P ALL 1 1</code>	<code>mpstat -P</code>	The value returned by the command is the number of CPUs + 1.
PI_LDSK	<code>df -lk</code>	<code>df -lk</code>	<code>df -k</code>	<code>df -lkP</code>	The value returned by the command is the number of file systems + 1.
PI_NET	<code>netstat -in</code>	<code>netstat -in</code>	<code>netstat -in</code>	<code>netstat -in</code>	The value returned by the command is the number of interfaces + 1.
PI_PDSK	<code>iostat</code>	<code>iostat -x 1 1</code>	<code>sar -d 1 1</code>	<code>iostat -xkd 1 1</code>	The value returned by the command is the number of disk devices + 1.

■ **Number of files**

The following shows the formula for estimating the number of files (*N*) that are created for the Store database.

Formula for estimating the number of files (N) created for the Store database:

$$\begin{aligned}
 N = & 20 + 2 \times (\\
 & (A11 + A12 + \dots + A1m + m) + \\
 & (A21 + A22 + \dots + A2m + m) + \\
 & (A31 + A32 + \dots + A3m + m) + \\
 & (A41 + A42 + \dots + A4m + m) + \\
 & (A51 + A52 + \dots + A5m + m) + \\
 & (11 \times m) +
 \end{aligned}$$

$$(B1 + B2 + \dots + Bn + n)$$

Note*m:*

Number of PI records collected

n:

Number of PD records collected

From *A11* to *A1m*:

Value set as the retention period for each minute-by-minute record of the PI record type (days)

From *A21* to *A2m*:

Value set as the retention period for each hourly record of the PI record type (days)

From *A31* to *3m*:

Value set as the retention period for each daily record of the PI record type (weeks)

From *A41* to *4m*:

Value set as the retention period for each weekly record of the PI record type (weeks)

From *A51* to *5m*:

Value set as the retention period for each monthly record of the PI record type (months)

From *B1* to *Bn*:

Value set as the retention period for each record of the PD record type (days)

■ Number of directories

The following shows the formula for estimating the number of directories (*N*) that are created for the Store database.

Formula for estimating the number of directories (*N*) created for the Store database:

$$N = 25 + 2 \times ((A1max) + (A2max) + (A3max) + (A4max) + (A5max) + 11 + (Bmax))$$

Note

m:

Number of PI records collected

n:

Number of PD records collected

A1max:

Maximum value set as the retention period for data whose summary type is *Minute* for a record of the PI record type (days)

A2max:

Maximum value set as the retention period for data whose summary type is *Hour* for a record of the PI record type (days)

A3max:

Maximum value set as the retention period for data whose summary type is *Day* for a record of the PI record type (weeks)

A4max:

Maximum value set as the retention period for data whose summary type is *Week* for a record of the PI record type (weeks)

A5max:

Maximum value set as the retention period for data whose summary type is *Month* for a record of the PI record type (months)

Bmax:

Maximum value set as the retention period 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 that are opened by the Store service.

Formula for estimating the number of files opened by the Store service:

$$N = 20 + 2 \times (6 \times m + n)$$

Note

m:

Number of PI records collected

n :

Number of PD records collected

(b) Example

This subsection describes estimation of the disk space requirement for the Store database for PFM - RM for Platform by way of an example.

■ Disk space requirement

This example collects PI_CPU and PD records.

The following describes how to estimate the disk space requirement for the PI_CPU record. The values of variables d through g in the formula for estimating the disk space requirement are shown below. For the meanings of the variables d through g , see (a) *Formulas*.

$d = 1,034$ (bytes)

$e = 544$ (bytes)

$f = 4$

$g = 300$ (seconds)

Next, the values of the variables a through c , such as the minute-by-minute and hourly records, and the formulas are described below. For the meanings of the variables a through c , see (a) *Formulas*.

Minute-by-minute record

$a = 1,440$

$b = 1 + (300 - 1)/60 = 5.98$ (round off the value)

$c = 3$ (days)

The formula is as follows:

$$\begin{aligned} X(\text{minute-by-minute}) &= \{(544 + 2) \times 4 + (1,034 + 60) \times \{(544 + 2) \times 4 / (65,250 - 1,034) + 1\}\} \times 1,440/5 \times (3 + 1) \times 1.1 \\ &= \{2,184 + 1,094 \times 1\} \times 1,267.2 \\ &= 3,278 \times 1,267.2 \\ &= 4,153,881 \text{ (bytes)} = \text{approximately } 4 \text{ (megabytes)} \end{aligned}$$

Hourly record

$a = 24$

$b = 1 + (300 - 1)/3,600 = 1.08$ (round off the value)

$c = 3$ (days)

The formula is as follows:

$$\begin{aligned} X(\text{hourly}) &= \{(544 + 2) \times 4 + (1,034 + 60) \times \{(544 + 2) \times 4 / (65,250 - 1,034) + 1\}\} \times 24/1 \times (3 + 1) \times 1.1 \\ &= \{2,184 + 1,094 \times 1\} \times 105.6 \\ &= 3,278 \times 105.6 \\ &= 346,156 \text{ (bytes)} = \text{approximately } 0.4 \text{ (megabytes)} \end{aligned}$$

Daily record

$$\begin{aligned}
 a &= 7 \\
 b &= 1 + (300 - 1)/86,400 = 1.00 \text{ (round off the value)} \\
 c &= 1 \text{ (week)}
 \end{aligned}$$

The formula is as follows:

$$\begin{aligned}
 X(\text{daily}) &= \{(544 + 2) \times 4 + (1,034 + 60) \times \{(544 + 2) \times 4 / (65,250 - 1,034) + 1\}\} \times 7/1 \times (1 + 1) \times 1.1 \\
 &= \{2,184 + 1,094 \times 1\} \times 15.4 \\
 &= 3,278 \times 15.4 \\
 &= 50,481 \text{ (bytes)} = \text{approximately } 0.05 \text{ (megabytes)}
 \end{aligned}$$

Weekly record

$$\begin{aligned}
 a &= 1 \\
 b &= 1 + (300 - 1)/604,800 = 1.00 \text{ (round off the value)} \\
 c &= 1 \text{ (week)}
 \end{aligned}$$

The formula is as follows:

$$\begin{aligned}
 X(\text{weekly}) &= \{(544 + 2) \times 4 + (1,034 + 60) \times \{(544 + 2) \times 4 / (65,250 - 1,034) + 1\}\} \times 1/1 \times (1 + 1) \times 1.1 \\
 &= \{2,184 + 1,094 \times 1\} \times 2.2 \\
 &= 3,278 \times 2.2 \\
 &= 7,211 \text{ (bytes)} = \text{approximately } 0.01 \text{ (megabytes)}
 \end{aligned}$$

Monthly record

$$\begin{aligned}
 a &= 1 \\
 b &= 1 + (300 - 1)/2,592,000 = 1.00 \text{ (round off the value)} \\
 c &= 1 \text{ (month)}
 \end{aligned}$$

The formula is as follows:

$$\begin{aligned}
 X(\text{monthly}) &= \{(544 + 2) \times 4 + (1,034 + 60) \times \{(544 + 2) \times 4 / (65,250 - 1,034) + 1\}\} \times 1/1 \times (1 + 1) \times 1.1 \\
 &= \{2,184 + 1,094 \times 1\} \times 2.2 \\
 &= 3,278 \times 2.2 \\
 &= 7,211 \text{ (bytes)} = \text{approximately } 0.01 \text{ (megabytes)}
 \end{aligned}$$

Yearly record

$$\begin{aligned}
 a &= 1 \\
 b &= 1 + (300 - 1)/31,622,400 = 1.00 \text{ (round off the value)} \\
 c &= 10 \text{ (years)}
 \end{aligned}$$

The formula is as follows:

$$\begin{aligned}
 X(\text{yearly}) &= \{(544 + 2) \times 4 + (1,034 + 60) \times \{(544 + 2) \times 4 / (65,250 - 1,034) + 1\}\} \times 1/1 \times (10 + 1) \times 1.1 \\
 &= \{2,184 + 1,094 \times 1\} \times 12.1 \\
 &= 3,278 \times 12.1 \\
 &= 39,663 \text{ (bytes)} = \text{approximately } 0.04 \text{ (megabytes)}
 \end{aligned}$$

From the above, the estimate for PI_CPU is as follows:

$$\begin{aligned} X(\text{total}) &= X(\text{minute-by-minute}) + X(\text{hourly}) + X(\text{days}) + X(\text{weekly}) \\ &+ X(\text{monthly}) + X(\text{yearly}) \\ &= 4.51 \text{ (megabytes)} \\ &= \text{approximately } 5 \text{ (megabytes)} \end{aligned}$$

The following describes how to estimate the disk space requirement for the PD record. The values of the variables d through g in the formula for estimating the disk space requirement are shown below. For the meanings of the variables d through g , see (a) *Formulas*.

$$\begin{aligned} a &= 1,440 \\ b &= 300/60 = 5 \\ c &= 7 \text{ (days)} \\ d &= 2,050 \text{ (bytes)} \\ e &= 0 \text{ (bytes)} \\ f &= 1 \\ g &= 300 \text{ (seconds)} \end{aligned}$$

The formula is as follows:

$$\begin{aligned} X &= \{ (0 + 2) \times 1 + (2,050 + 60) \times \{ ((0 + 2) \times 1) / (65,250 - 2,050) \\ &+ 1 \} \} \times 1,440/5 \times (7 + 1) \times 1.1 \\ &= \{ 2,112 \times 1 \} \times 2,534.4 \\ &= 2,112 \times 2,534.4 \\ &= 5,352,653 \text{ (bytes)} = \text{approximately } 6 \text{ (megabytes)} \end{aligned}$$

Therefore, the disk space requirement is PI_CPU + PD = 11 (megabytes).

■ Number of files

This example collects PI and PD records. The values of the variables in the formula for estimating the number of files are shown below. For the meanings of the variables, see (a) *Formulas*.

$$\begin{aligned} m &= 1 \\ n &= 1 \\ A11 \text{ to } A1m &= 3 \text{ (days)} \\ A21 \text{ to } A2m &= 3 \text{ (days)} \\ A31 \text{ to } A3m &= 1 \text{ (weeks)} \\ A41 \text{ to } A4m &= 1 \text{ (weeks)} \\ A51 \text{ to } A5m &= 1 \text{ (months)} \\ B1 \text{ to } Bn &= 10 \text{ (days)} \end{aligned}$$

The formula is as follows:

$$\begin{aligned} N &= 20 + 2 \times \{ \\ &\quad [3(\text{PI minute-by-minute}) + 1] + \\ &\quad [3(\text{PI minute-by-minute}) + 1] + \\ &\quad [1(\text{PI minute-by-minute}) + 1] + \\ &\quad [1(\text{PI minute-by-minute}) + 1] + \end{aligned}$$

$$\begin{aligned}
 & [1(\text{PI minute-by-minute}) + 1] + \\
 & [11 \times 1] + \\
 & [10(\text{PD minute-by-minute}) + 1] \\
 & \} \\
 = & 20 + 2 \times \{4 + 4 + 2 + 2 + 2 + 11 + 11\} = 92
 \end{aligned}$$

■ **Number of directories**

This example collects PI and PD records. The values of the variables in the formula for estimating the number of directories are shown below. For the meanings of the variables, see (a) *Formulas*.

$$A1max = 3 \text{ (days)}$$

$$A2max = 3 \text{ (days)}$$

$$A3max = 1 \text{ (week)}$$

$$A4max = 1 \text{ (week)}$$

$$A5max = 1 \text{ (month)}$$

$$Bmax = 10 \text{ (days)}$$

The formula is as follows:

$$N = 25 + 2 \times (3 + 3 + 1 + 1 + 1 + 11 + 10) = 85$$

■ **Number of files opened by the Store service**

This example collects PI and PD records. The values of the variables *m* and *n* in the formula for estimating the number of files that the Store service is to open are shown below. For the meanings of the variables, see (a) *Formulas*.

$$m = 1$$

$$n = 1$$

The formula is as follows:

$$N = 20 + 2 \times (6 \times 1 + 1) = 34$$

(c) **Disk space requirement for operation in a cluster system**

The disk space requirement for operation in a cluster system is the same as for non-cluster system operation. For details, see (a) *Formulas*.

B. List of Identifiers

To operate PFM - RM for Platform or to extract performance data from the Store database of PFM - RM for Platform, identifiers might be required so that the system can identify PFM - RM for Platform. The following table shows the PFM - RM for Platform identifiers.

Table B-1: Identifiers of PFM - RM for Platform

Identifier	Name	Usage	Description
7	Product ID	Commands, etc.	The product ID is part of the service ID. The service ID is required when you use commands to check the configuration of the Performance Management system and when you back up performance data. For details about the service ID, see the chapter that describes the functions of Performance Management in the <i>Job Management Partner 1/Performance Management Planning and Configuration Guide</i> .
RMPlatform or agt7	Service key		This identifier is needed in order to use commands to start and stop PFM - RM for Platform. For details about the service key, see the chapter that describes the functions of Performance Management in the <i>Job Management Partner 1/Performance Management Planning and Configuration Guide</i> .
RM Platform	Product name	Display in GUI, etc.	The product name identifies the product and is used to display information in the PFM - Web Console windows.
pcm7	Help ID	Help	This is the identifier for the PFM - RM for Platform Help.
RMPLATFORM	Product type identifier	ODBC	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> .

C. List of Processes

This appendix describes the functions of the PFM - RM for Platform processes.

Note

These processes and the number of processes also apply to a PFM - RM for Platform that runs on a logical host.

C.1 In Windows

The following table lists and describes the processes of PFM - RM for Platform. The value in parentheses following each process name is the number of processes that can run concurrently.

Table C-1: Processes of PFM - RM for Platform (in Windows)

Process name (number of processes)	Function
<code>jpcagt7.exe</code> (n) ^{#1}	Process of the Remote Monitor Collector service. One process is started for each instance of PFM - RM for Platform.
<code>jpcsto.exe</code> (n)	Process of the Remote Monitor Store service. One process is started for each instance of PFM - RM for Platform.
<code>jpc7collect.exe</code> (n) ^{#2}	Collection process. One process is started for each instance of PFM - RM for Platform.
<code>stpqlpr.exe</code> (1) ^{#3}	Process for executing Store database backup and export.

#1

n indicates the number of instances, not the number of processes.

#2

Child process of the `jpcagt7.exe` process

#3

Child process of the `jpcsto.exe` process

C.2 In UNIX

The following table lists and describes the processes of PFM - RM for Platform. The value in parentheses following each process name is the number of processes that can run concurrently.

Table C-2: Processes of PFM - RM for Platform (in UNIX)

Process name (number of processes)	Function
<code>jpgagt7 (n)</code> ^{#1}	Process of the Remote Monitor Collector service. One process is started for each instance of PFM - RM for Platform.
<code>jpgcto (n)</code>	Process of the Remote Monitor Store service. One process is started for each instance of PFM - RM for Platform.
<code>jpg7collect (n)</code> ^{#2}	Collection process. One process is started for each instance of PFM - RM for Platform.
<code>stpq1pr (1)</code> ^{#3}	Process for executing Store database backup and export.

#1

n indicates the number of instances, not the number of processes.

#2

Child process of the `jpgagt7` process

#3

Child process of the `jpgcto` process

D. List of Port Numbers

This appendix describes the port numbers used by PFM - RM for Platform.

For details about the port numbers for PFM - Manager and PFM - Base, and the firewall passage directions, see the appendix in the manual *Job Management Partner I/Performance Management Reference*.

You can change port numbers as appropriate to your system environment. For details about how to change port numbers, see the chapter that describes installation and setup in the *Job Management Partner I/Performance Management Planning and Configuration Guide*. The TCP/IP protocol is used.

Note

Performance Management supports static NAT (Basic NAT), which performs one-to-one address conversion. It does not support dynamic NAT or NAT (IP Masquerade, NAT+), which include a port conversion function.

D.1 Port numbers for PFM - RM for Platform

The following table shows the port numbers used by PFM - RM for Platform.

Table D-1: Port numbers used by PFM - RM for Platform

Port number	Service name	Parameter	Usage
Automatic ^{#1}	Remote Monitor Collector service	jp1pcagt7[<i>nnn</i>] ^{#2}	Used to bind alarms and acquire real-time reports.
	Remote Monitor Store service	jp1pcsto7[<i>nnn</i>] ^{#2}	Used to record performance data and acquire historical reports.

#1

Each time the service is restarted, the port numbers of ports that are not being used by the system are assigned automatically.

#2

If multiple instances are created, a sequence number (*nnn*) is assigned to the second and subsequent instances that are created. No sequence number is assigned to the first instance that is created.

D.2 Firewall passage directions

This subsection describes the firewall passage directions for PFM - RM for Platform.

(1) Setting the firewall passage directions

If there is a firewall between PFM - Manager and PFM - RM for Platform, you must set fixed port numbers for all services of PFM - Manager and PFM - RM for Platform.

The following table shows the firewall passage directions.

Table D-2: Firewall passage directions (between PFM - Manager and PFM - RM for Platform)

Service name	Parameter	Passage direction
Remote Monitor Collector service	jp1pcagt7[<i>nnn</i>] [#]	PFM - RM for Platform ← PFM - Manager
Remote Monitor Store service	jp1pcsto7[<i>nnn</i>] [#]	

Legend:

← : Direction in which communication (connection) begins, from the right-hand item to the left-hand item.

#

If multiple instances are created, a sequence number (*nnn*) is assigned to the second and subsequent instances that are created. No sequence number is assigned to the first instance that is created.

When communication (connection) begins, the service receiving the connection request (pointed to by the arrow) uses the port number indicated in Table D-1 as the reception port. The service sending the connection request uses an available port as assigned by the OS as the transmission port. The range of port numbers used depends on the OS.

Set the firewall so that the transmission port used temporarily by PFM - Manager can pass through the reception port of PFM - RM for Platform.

Note

If you execute the `jpctool db dump` or `jpctool service list` command at the PFM - RM for Platform host, specify the `proxy` option so that communication is established via PFM - Manager. Alternatively, between each PFM - RM host, set port numbers in the directions shown in the table below so that communication can pass through the firewall. For details about the `proxy` option of the `jpctool db dump` and `jpctool service list` commands, see the chapter that describes commands in the manual *Job Management Partner 1/ Performance Management Reference*.

Table D-3: Firewall passage directions (between each PFM - RM host)

Service name	Parameter	Passage direction
Remote Monitor Collector service	jp1pcagt7[<i>nnn</i>] [#]	PFM - RM ← → PFM - RM
Remote Monitor Store service	jp1pcsto7[<i>nnn</i>] [#]	

Legend:

← → : Direction in which communication (connection) begins, from the left-hand item to the right-hand item or from the right-hand item to the left-hand item.

#

If multiple instances are created, a sequence number (*nnn*) is assigned to the second and subsequent instances that are created. No sequence number is assigned to the first instance that is created.

To collect information about the monitored host, WMI is used for communication in Windows and SSH is used in UNIX. Therefore, if you place a firewall between PFM - RM for Platform and the monitored host, you must specify the settings so that communication passes through the firewall as follows:

- PFM - RM for Platform (Remote Monitor Collector service) → monitored host

Note

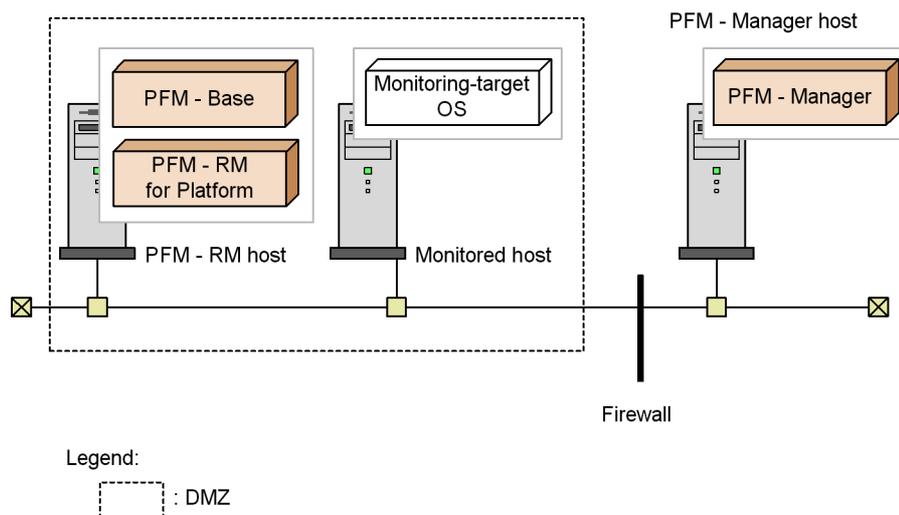
→ : Direction in which communication (connection) begins, from the left-hand item to the right-hand item.

(a) In Windows

WMI uses DCOM. Because DCOM uses dynamic port allocation, the port used for DCOM must pass through the firewall. For details about the setup method, see the firewall product documentation or contact the firewall product developer.

Usage with a firewall is not suitable because one WMI and DCOM request cannot be separated from another WMI and DCOM request. The following figure shows the recommended configuration.

Figure D-1: Example of an acceptable configuration for passing through a firewall with the port used in DCOM



(b) In UNIX

Specify the settings so that the port number specified in the settings for the monitoring target of PFM - RM for Platform is used to pass through the firewall.

The table below shows the values that can be specified for the port number, which is a monitoring target setting. For details about the monitoring target settings, see 2.2.4 Setup procedure (for UNIX).

Table D-4: Port numbers permitted for the monitoring target setting

Setting item	Description	Permitted value	Default value
Port	Port number of the SSH server on the monitored host	From 1 to 65,535	22

(2) Setting the firewall passage directions (when a logical host is used for operation)

If you place a firewall between PFM - Manager and PFM - RM for Platform, you must set fixed port numbers for all services of PFM - Manager and PFM - RM for Platform.

The following table shows the firewall passage directions.

Table D-5: Firewall passage directions (between PFM - Manager and PFM - RM for Platform (for logical host operation))

Service name	Parameter	Passage direction
Remote Monitor Collector service (logical host)	jp1pcagt7[<i>nnn</i>] [#]	PFM - RM for Platform (logical host) ← PFM - Manager
Remote Monitor Store service (logical host)	jp1pcsto7[<i>nnn</i>] [#]	

Legend:

← : Direction in which communication (connection) begins, from the right-hand item to the left-hand item.

#

If multiple instances are created, a sequence number (*nnn*) is assigned to the second and subsequent instances that are created. No sequence number is assigned to the first instance that is created.

When communication (connection) begins, the service receiving the connection request (pointed to by the arrow) uses the port number indicated in Table D-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.

Set the firewall so that the transmission port used temporarily by PFM - Manager can pass to the reception port of the logical host of PFM - RM for Platform.

(3) Setting the firewall passage directions (when the health check function is used)

If PFM - RM for Platform is to monitor the operating status of a monitored host using the health check function, you must specify the settings so that ICMP communication passes through the firewall.

The following table shows the firewall passage directions.

Table D-6: Firewall passage directions (between PFM - RM for Platform and a monitored host)

Service name	Communication protocol	Passage direction
Remote Monitor Collector service	ICMP echo request/ ICMP echo response	PFM - RM host ← → monitored host

Legend:

← → : Direction in which communication (connection) begins, from the left-hand item to the right-hand item or from the right-hand item to the left-hand item.

E. Properties of PFM - RM for Platform

This appendix describes the properties of the following services and agents of PFM - RM for Platform that are displayed in PFM - Web Console:

- Remote Monitor Store service
- Remote Monitor Collector service
- Remote agents and group agents

E.1 List of properties of the Remote Monitor Store service

The following table lists and describes the properties of the Remote Monitor Store service of PFM - RM for Platform.

Table E-1: List of properties of the Remote Monitor Store service of PFM - RM for Platform

Directory 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.
Disk Usage	--	This directory stores the amount 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.

Directory name	Property name	Description
	Product Alarm	Displays the disk space used by records of the PA record type. PFM - RM for Platform does not use this property.
	Product Log	Displays the disk space used by records of the PL record type. PFM - RM for Platform does not use this property.
	Total Disk Usage	Displays the total amount of disk space used by the entire database.
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.
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 Remote Monitor Store service.

Directory 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 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 Ex		--	Sets the data retention period for Store version 2.0. 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> .
Retention Ex	Product Interval - <i>record-ID-of-PI-record-type</i>	--	Sets the retention period for records of the PI record type.
		Period - Hour Drawer (Day)	Sets the retention period for records of the PI record type that are collected hourly. The permitted value is an integer in the range from 0 to 366 (days).
		Period - Day Drawer (Week)	Sets the retention period for records of the PI record type that are collected daily. The permitted value is an integer in the range from 0 to 266 (weeks).

Directory name		Property name	Description
		Period - Week Drawer (Week)	Sets the retention period for records of the PI record type that are collected weekly. The permitted value is an integer in the range from 0 to 266 (weeks).
		Period - Month Drawer (Month)	Sets the retention period for records of the PI record type that are collected monthly. The permitted value is an integer in the range from 0 to 60 (months).
		Period - Year Drawer (Year)	Sets the retention period for records of the PI record type that are collected yearly. The permitted value is from 10 (fixed).
	Product Detail - <i>record-ID-of-PD-record-type</i>	Period (Day)	Sets the retention period for records of the PD record type for each record ID. The permitted value is an integer in the range from 0 to 366 (days).
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.

Legend:

--: Not applicable

E.2 List of properties of the Remote Monitor Collector service

The following table lists and describes the properties of the Remote Monitor Collector service of PFM - RM for Platform.

Table E-2: List of properties of the Remote Monitor Collector service of PFM - RM for Platform

Directory 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.
		Data Model Version	Displays the version of the data model.
Detail Records		--	Stores the properties of records of the PD record type. The record IDs of the collected records are displayed in boldface type.
Detail Records	<i>record-ID</i> ^{#1}	--	Stores the properties of a record.
		Description	Displays a description of the record. You cannot change this property.
		Log	Displays Yes or No indicating whether records are to be recorded in the Store database of PFM - RM for Platform. No is always displayed here.
		Collection Interval	Specifies the data collection interval. The permitted value is from 0 to 2,147,483,647 seconds in increments of 1. If you specify 0 for the property, 0 seconds is assumed, in which case no data is collected.

Directory name		Property name	Description
		Collection Offset	Specifies the offset value (in seconds) for starting data collection. This value must be in the range from 0 to 32,767 seconds but cannot exceed the value specified for Collection Interval. The data collection logging time does not depend on the Collection Offset value and is the same 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. The system 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 properties window for the service that is displayed on PFM - Web Console's Services page.
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.

Directory 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 boldface type.
Interval Records	<i>record-ID</i> ^{#1}	--	Stores the properties of a record.
		Description	Displays a description of the record. You cannot change this property.
		Log	Displays Yes or No indicating whether records are to be recorded in the Store database of PFM - RM for Platform. No is always displayed here.
		Collection Interval	Specifies the data collection interval. The permitted value is from 0 to 2,147,483,647 seconds 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. This value must be in the range from 0 to 32,767 seconds but cannot exceed the value specified for Collection Interval. The data collection logging time does not depend on the Collection Offset value and is the same 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. The system 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 properties window for the service that is displayed on PFM - Web Console's Services page.

Directory name		Property name	Description
Monitoring Targets		--	Stores the properties of the monitored host that is monitored by PFM - RM for Platform.
Monitoring Targets	<i>monitoring-target-name</i>	--	Displays a description of the monitoring target. As many descriptions are displayed as there are monitoring targets.
		Target Name	Displays the name of the monitoring target. You cannot change this property.
		Target Host	Displays the name of the monitored host. You cannot change this property.
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 Remote Monitor Collector 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 Remote Monitor Store service to which the Remote Monitor Collector service connects.
		EP Service Name	Displays the service ID of the Correlator service at the connection-target PFM - Manager host.

E. Properties of PFM - RM for Platform

Directory name		Property name	Description
		AH Service Name	Displays the service ID of the Action Handler service at the same host.
Remote Monitor Configuration		--	Stores the setting properties specific to PFM - RM for Platform.
Remote Monitor Configuration	Remote Monitor	--	Displays an overview of the Remote Monitor Collector service.
		Product	Displays 7 as the product ID.
		Instance	Displays the instance name specified in the <code>jpconf inst setup</code> command.
		Interval	Displays the value of <code>Interval</code> , which was specified when the instance environment was set up. You can change this property. ^{#2}
		Std_Category	Displays the value of <code>StdCategory</code> , which was specified when the instance environment was set up. You can change this property. ^{#2}
		Disk_Category	Displays the value of <code>DiskCategory</code> , which was specified when the instance environment was set up. You can change this property. ^{#2}
		Network_Category	Displays the value of <code>NetworkCategory</code> , which was specified when the instance environment was set up. You can change this property. ^{#2}
		RMHost_User	Displays the value of <code>RMHost_User</code> , which was specified when the instance environment was set up. You can change this property. ^{#2} This property is applicable to Windows only.

Directory name		Property name	Description
		RMHost_Password	**** (fixed) is displayed. You cannot change this property. This property is applicable to Windows only.
		RMHost_Domain	Displays the value of RMHost_Domain, which was specified when the instance environment was set up. You can change this property. ^{#2} This property is applicable to Windows only.
		Log_Size	Displays the value of Log_Size, which was specified when the instance environment was set up. You can change this property. ^{#2}
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.

Legend:

--: Not applicable

#1

The directory name shows the record ID without the database ID. For details about the record ID of each record, see 5. *Records*.

#2

To apply the new values, restart the Remote Monitor Collector service.

E.3 List of properties of remote agents and group agents

The following table lists and describes the properties of remote agents and group agents of PFM - RM for Platform.

Table E-3: List of properties of remote agents and group agents of PFM - RM for Platform

Directory name	Property name	Description	Remote agent	Group agent
--	Data Model Version	Displays the version of the data model.	D	D
Remote Monitoring	--	Stores the properties of the remote agent or group agent.	D	D
	Agent Type	Displays the type of agent: <ul style="list-style-type: none"> For remote agent Remote Agent is displayed. For group agent Group Agent is displayed. 	D	D
	Remote Monitor Name	Displays the service ID of PFM - RM for Platform.	D	D
	Target Name	Displays the name of the monitoring target.	D	N
	Target Host	Displays the name of the monitored host.	D	N
	Group Name	Displays the group name.	N	D
	Primary Host	Displays the primary host name.	N	D
	Grouping Targets	Displays a list of target names that are to be summarized.	N	D
Detail Records	--	Stores the properties of records of the PD record type. The record IDs of the collected records are displayed in boldface type.	D	D
Detail Records	<i>record-ID</i> ^{#1}	Stores the properties of a record.	D	D

Directory name		Property name	Description	Remote agent	Group agent
		Description	Displays a description of the record.	D	D
		Log	Displays Yes or No indicating whether records are to be recorded in the Store database of PFM - RM for Platform. If this value is set to Yes and Collection Interval is set to a value greater than 0, the record is recorded into the database.	U	U
		Collection Interval	Specifies the data collection interval. The permitted value is from 0 to 2,147,483,647 seconds in increments of 1. If you specify 0 for the property, 0 seconds is assumed, in which case no data is collected.	D ^{#2}	D ^{#2}
		Collection Offset	Specifies the offset value (in seconds) for starting data collection. This value must be in the range from 0 to 32,767 seconds but cannot exceed the value specified for Collection Interval. The data collection logging time does not depend on the Collection Offset value and is the same as the Collection Interval.	D ^{#2}	D ^{#2}

E. Properties of PFM - RM for Platform

Directory name		Property name	Description	Remote agent	Group agent
		LOGIF	Specifies the conditions for storing records in the database. Only records that satisfy the conditions are stored in the database. The system 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 properties window for the service that is displayed on PFM - Web Console's Services page.	D ^{#2}	D ^{#2}
Interval Records		--	Stores the properties of records of the PI record type. The record IDs of the collected records are displayed in boldface type.	D	D
Interval Records	<i>record-ID</i> ^{#1}	--	Stores the properties of a record.	D	D
		Description	Displays a description of the record. You cannot change this property.	D	D
		Log	Displays Yes or No indicating whether records are to be recorded in the Store database of PFM - RM for Platform. If this value is set to Yes and Collection Interval is set to a value greater than 0, the record is recorded into the database.	U	U

Directory name		Property name	Description	Remote agent	Group agent
		Collection Interval	Specifies the data collection interval. The permitted value is from 0 to 2,147,483,647 seconds in increments of 1. If you specify 0 for the property, 0 seconds is assumed, in which case no data is collected.	D#2	D#2
		Collection Offset	Specifies the offset value (in seconds) for starting data collection. This value must be in the range from 0 to 32,767 seconds but cannot exceed the value specified for Collection Interval. The data collection logging time does not depend on the Collection Offset value and is the same as the Collection Interval.	D#2	D#2
		LOGIF	Specifies the conditions for storing records in the database. Only records that satisfy the conditions are stored in the database. The system 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 properties window for the service that is displayed on PFM - Web Console's Services page.	D#2	D#2
Remote Monitor Configuration		--	Stores the setting properties specific to the monitoring target.	D	N
Remote Monitor Configuration	Target	--	Displays an overview of the service of the remote agent.	D	N

Directory name		Property name	Description	Remote agent	Group agent
		User	Specifies the user that is to connect to the monitored host.	U	N
		Password	**** (fixed) is displayed. You cannot change this property. This property is applicable to Windows only.	D	N
		Domain	Specifies the domain name to which the monitored host belongs. This property is applicable to Windows only.	U	N
		Private_Key_File	Specifies the name of the private key file that is to be used with the SSH public key method. This property is applicable to UNIX only.	U	N
		Port	This is the port number of the SSH server on the monitored host. This property is applicable to UNIX only.	U	N

Legend:

--: Not applicable

U: Displayed and updatable

D: Displayed but not updatable

N: Not displayed

#1

The directory name shows the record ID without the database ID. For details about the record ID of each record, see *5. Records*.

#2

The value set by PFM - RM for Platform is displayed.

F. List of Directories and Files

This appendix lists the directories and files of PFM - RM for Platform.

The following shows the installation directory for Performance Management.

In Windows

You can specify any folder as the installation folder for Performance Management. The following is the default installation folder:

- For OSs 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) and the 64-bit version of Windows Server 2008
system-drive\Program Files (x86)\Hitachi\jplpc

In UNIX

The installation directory for Performance Management is */opt/jplpc/*.

F.1 In Windows

The following table lists the folders and files for the Windows version of PFM - RM for Platform.

Table F-1: List of folders and files for PFM - RM for Platform (for Windows)

Folder name	File name	Description
<i>installation-folder</i> \	--	Installation folder or environment folder
	instagt7.ini	Intermediate file for internal processing
<i>installation-folder</i> \agt7\	--	Base folder of PFM - RM for Platform
	insrules.dat	Intermediate file for internal processing
	jpcagtras.bat	Maintenance data collection program
	PATCHLOG.TXT	Intermediate file for internal processing

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Folder name	File name	Description
	readme.txt	Readme text file
<i>installation-folder\agt7\agent\</i>	--	Base folder of the Remote Monitor Collector service
	agtlis.ini	Intermediate file for internal processing
	GARULES.DAT	Grouping rule description file (master)
	jpcagt.ini.instmpl	Intermediate file for internal processing
	jpcagt7.exe	Executable program of the Remote Monitor Collector service
	target.ini.tmpl	Template file for setting the monitoring target
	group.ini.tmpl	Template file for setting the group agent
	targetrules.dat	Monitoring target creation rule file
<i>installation-folder\agt7\agent\instance-name\</i>	--	Base folder of the Remote Monitor Collector service. Files under this folder are created for each instance.
	GARULES.DAT	Grouping rule description file
	groupis.ini	List of groups
	jpcagt.ini	Service startup initialization file of Remote Monitor Collector

Folder name	File name	Description
	<code>jpcagt.ini.model</code>	Sample of a service startup initialization file of Remote Monitor Collector
	<code>status.dat</code>	Intermediate file for internal processing
	<code>targetlist.ini</code>	List of monitoring targets
	<code>tstatuses.dat</code>	Virtual Agent status information ^{#1}
<i>installation-folder</i> \agt7\agent\ <i>instance-name</i> \groups\	--	Folder for the group agent
	<i>group-name.ini</i>	Group agent settings file
<i>installation-folder</i> \agt7\agent\ <i>instance-name</i> \log\	--	Storage folder for the internal log file of the Remote Monitor Collector service (for each instance)
	<code>collect_nn^{#2}</code>	Internal log file
	<code>timer_nn^{#2}</code>	
	<code>target_monitoring-target-name_nn^{#2}</code>	
	<ul style="list-style-type: none"> • msglog01 • msglog02 	
	<ul style="list-style-type: none"> • nslog01 • nslog02 	
<i>installation-folder</i> \agt7\agent\ <i>instance-name</i> \targets\	--	Folder for the remote agent
	<i>monitoring-target-name.ini</i>	Monitoring target settings file
	<i>monitoring-target-name.ini.model</i>	Sample of a monitoring target settings file

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Folder name	File name	Description
<i>installation-folder</i> \agt7\agent\ <i>instance-name</i> \targets\ <i>monitoring-target-name</i> \	--	Work folder
	records.dat	Performance information file
	records.stdout	Performance information file ^{#3}
	wmi.out	Performance information file for WMI
	wmi.out.old	Performance information file for the previous WMI
<i>installation-folder</i> \agt7\bin\	--	Command storage folder
	jpc7collect.exe	Collection process
	jpcagt7hcc.dll	HCCLib common library
<i>installation-folder</i> \agt7\lib\	--	Storage folder for libraries
	jpcagt7msg.dll	Message catalog file
<i>installation-folder</i> \agt7\store\	--	Base folder of the Remote Monitor Store service
	STDICT.DAT	Data model definition file
	STRULES.DAT	
	stolist.ini	Intermediate file for internal processing
	jpcsto.ini.instmpl	
<i>installation-folder</i> \agt7\store\ <i>instance-name</i> \	--	Base folder of the Remote Monitor Store service. Files under this folder are created for each instance.

Folder name	File name	Description
	*.DB	Performance data files
	*.IDX	Index files for performance data files
	*.LCK	Lock files for performance data files
	jpcsto.ini	Service startup initialization file of Remote Monitor Store
	jpcsto.ini.model	Sample of a service startup initialization file of Remote Monitor Store
	status.dat	Intermediate file for internal processing
	STDICT.DAT	Data model definition file
STRULES.DAT		
<i>installation-folder\agt7\store\instance-name\backup\</i>	--	Default database backup folder
<i>installation-folder\agt7\store\instance-name\dump\</i>	--	Default database export folder
<i>installation-folder\agt7\store\instance-name\import\</i>	--	Default database import folder
<i>installation-folder\agt7\store\instance-name\log\</i>	--	Internal log file storage folder for the Remote Monitor Collector service
	<ul style="list-style-type: none"> • msglog01 • msglog02 	Internal log file
	<ul style="list-style-type: none"> • nslog01 • nslog02 	
<i>installation-folder\agt7\store\instance-name\partial\</i>	--	Default database partial backup folder

Folder name	File name	Description
<i>installation-folder</i> \agt7\store\instance-name\STPD\	--	PD record storage folder
<i>installation-folder</i> \agt7\store\instance-name\STPI\	--	
<i>installation-folder</i> \agt7\store\instance-name\STPL\	--	
<i>installation-folder</i> \log\	--	Common log folder
	jpclog*	Common logs
<i>installation-folder</i> \setup\	--	Setup file storage folder
	extract	Extraction folder for setup information
	jpcagt7u.z	Archive file for PFM - RM for Platform setup (UNIX)
	jpcagt7w.EXE	Archive file for PFM - RM for Platform setup (Windows)
<i>installation-folder</i> \patch_files\agt7\	--	Storage folder for patch files (for agent)

Legend:

--: Not applicable

#1

Created if the health check function is enabled.

#2

nn is from 01 to 04.

#3

This folder is created temporarily.

F.2 In UNIX

The following table lists the directories and files for the UNIX version of PFM - RM for Platform.

Table F-2: List of directories and files for PFM - RM for Platform (for UNIX)

Directory name	File name	Permission	Description
<i>installation-directory/</i>	--	755	Installation folder or environment directory
	instagt7.ini	644	Intermediate file for internal processing
<i>installation-directory/agt7/</i>	--	755	Base directory of PFM - RM for Platform
	insrules.dat	444	Intermediate file for internal processing
	jpcagtras	555	Maintenance data collection program
	patch_history	644	Intermediate file for internal processing
	PATCHLOG.TXT		
<i>installation-directory/agt7/.ssh/</i>	--	700	Directory for storing private and public key files
	agt7	600	Private key file
	agt7.pub	644	Public key file
<i>installation-directory/agt7/agent/</i>	--	755	Base directory of the Remote Monitor Collector service
	agtlist.ini	644	Intermediate file for internal processing
	GARULES.DAT	444	Grouping rule description file (master)
	jpcagt.ini.instmpl		Intermediate file for internal processing
	jpcagt7	555	Executable program of the Remote Monitor Collector service
	target.ini.tmpl	444	Template file for setting the monitoring target
	group.ini.tmpl		Template file for setting the group agent

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Directory name	File name	Permission	Description
	targetrules.dat		Monitoring target creation rule file
<i>installation-directory/agt7/agent/instance-name/</i>	--	755	Base directory of the Remote Monitor Collector service. Files under this directory are created for each instance.
	GARULES.DAT	444	Grouping rule description file
	grouplist.ini	644	List of groups
	jpcagt.ini	600	Service startup initialization file of Remote Monitor Collector
	jpcagt.ini.lock	777	Lock file for the service startup initialization file of Remote Monitor Collector (for each instance)
	jpcagt.ini.model	444	Sample of a service startup initialization file of Remote Monitor Collector
	status.dat	600	Intermediate file for internal processing
	targetlist.ini	644	List of monitoring targets
	tstatuses.dat	600	Virtual Agent status information ^{#1}
<i>installation-directory/agt7/agent/instance-name/groups/</i>	--	755	Directory for the group agent
	<i>group-name.ini</i>	644	Group agent settings file
<i>installation-directory/agt7/agent/instance-name/log/</i>	--	777	Storage directory for the internal log file of the Remote Monitor Collector service (for each instance)
	collect_ <i>nn</i> ^{#2}	666	Internal log file
	timer_ <i>nn</i> ^{#2}		
	target_ <i>monitoring-target-name</i> _{<i>nn</i>} ^{#2}		

Directory name	File name	Permission	Description
	<ul style="list-style-type: none"> • msglog01 • msglog02 		
	<ul style="list-style-type: none"> • nslog01 • nslog02 		
<i>installation-directory/agt7/agent/instance-name/targets/</i>	--	755	Directory for the remote agent
	<i>monitoring-target-name.ini</i>	600	Monitoring target settings file
	<i>monitoring-target-name.ini.model</i>	400	Sample of a monitoring target settings file
<i>installation-directory/agt7/agent/instance-name/targets/monitoring-target-name/</i>	--	755	Work directory
	records.dat	666	Performance information file
	records.stdout		
	records.stderr		Collection error information file
	common.stdout		Result of a common command (stdout)
	common.stdout.old		Result of the previous common command (stdout)
	common.stderr		Result of a common command (stderr)
	os.stdout		Results of an OS-specific command (stdout)
	os.stdout.old		Result of the previous OS-specific command (stdout)
	os.stderr		Result of an OS-specific command (stderr)

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Directory name	File name	Permission	Description
<i>installation-directory/agt7/bin/</i>	--	755	Command storage directory
	jpc7-ssh-keygen	500	SSH key creation command
	jpc7collect	555	Collection process
	libjpcagt7hcc.so	755	HCCLib common library
<i>installation-directory/agt7/dat/</i>	--	755	Data storage directory for collection process
	common.dat	400	Storage folder for common execution commands
	cmd2rec	500	File creation script for record information
	cmd2rec_common		File creation script for record information (common to all OSs)
	cmd2rec_OS		File creation script for record information (for each OS)
	OS.dat	400	Execution command storage folder by category (for each OS)
<i>installation-directory/agt7/nls/LANG/</i>	--	755	Message catalog storage directory (for details about the LANG directory, see Table F-3)
	jpcagt7msg.cat	444	Message catalog file
<i>installation-directory/agt7/store/</i>	--	755	Base directory of the Remote Monitor Store service
	STDICT.DAT	444	Data model definition file
	STRULES.DAT		
	stolist.ini	644	Intermediate file for internal processing
	jpcsto.ini.instmpl	444	

Directory name	File name	Permission	Description
<i>installation-directory/agt7/ store/instance-name/</i>	--	755	Base directory of the Remote Monitor Store service. Files under this directory are created for each instance.
	*.DB	644	Performance data files
	*.IDX		Index files for performance data files
	*.LCK	666	Lock files for performance data files
	jpcsto.ini	644	Service startup initialization file of Remote Monitor Store
	jpcsto.ini.model	444	Sample of a service startup initialization file of Remote Monitor Store
	status.dat	600	Intermediate file for internal processing
	STDICT.DAT	444	Data model definition file
	STRULES.DAT		
<i>installation-directory/agt7/ store/instance-name/backup/</i>	--	755	Default database backup directory
<i>installation-directory/agt7/ store/instance-name/dump/</i>	--	777	Default database export directory
<i>installation-directory/agt7/ store/instance-name/import/</i>	--	755	Default database import directory
<i>installation-directory/agt7/ store/instance-name/log/</i>	--	777	Internal log file storage directory for the Remote Monitor Collector service
	<ul style="list-style-type: none"> • msglog01 • msglog02 	666	Internal log file
	<ul style="list-style-type: none"> • nslog01 • nslog02 		
<i>installation-directory/agt7/ store/instance-name/partial/</i>	--	755	Default database partial backup directory
<i>installation-directory/agt7/ store/instance-name/STPD/</i>	--		PD record storage directory

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Directory name	File name	Permission	Description
<i>installation-directory/agt7/store/instance-name/STPI/</i>	--		
<i>installation-directory/agt7/store/instance-name/STPL/</i>	--		
<i>installation-directory/log/</i>	--	777	Common log directory
	jpclog*	666	Common logs
<i>installation-directory/setup/</i>	--	755	Setup file storage directory
	extract		Extraction directory for setup information
	jpcagt7u.Z	444	Archive file for PFM - RM for Platform setup (UNIX)
	jpcagt7w.EXE		Archive file for PFM - RM for Platform setup (Windows)
<i>installation-directory/patch_files/agt7/</i>	--	755	Storage directory for patch files (for agent)

Legend:

--: Not applicable

#1

Created if the health check function is enabled.

#2

nn is from 01 to 04.

The following table lists the LANG directories for the UNIX version of PFM - RM for Platform.

Table F-3: List of LANG directories

Value of LANG	Description
c	English catalog

G. Migration Procedure and Notes on Migration

To upgrade PFM - RM for Platform, perform an overwrite installation of PFM - RM for Platform.

In Windows

See *2.1 Installation and setup (in Windows)*.

In UNIX

See *2.2 Installation and setup (in UNIX)*.

Notes

- When you upgrade PFM - RM for Platform, do not uninstall the old version of PFM - RM for Platform. If you uninstall it, all the data created by the old version (such as performance data) will also be deleted and will no longer be available under the new version.
- When you perform an overwrite installation of the PFM - RM for Platform program, the following items are updated automatically:
 - Store database files for the Remote Monitor Store service
 - INI file
 - Instance environments for PFM - RM for Platform

H. Version Compatibility

There are different versions of the PFM - RM for Platform product as well as different versions of the data model.

Because the data model has upward compatibility, you can use report and alarm definitions created under an old version of the data model with a newer version.

The following table shows the correspondence between versions for PFM - RM for Platform.

Table H-1: Correspondence between versions for PFM - RM for Platform

PFM - RM for Platform version	Data model version	Alarm table version for monitoring template
09-00	4.0	09.00

For details about version compatibility, see the description of version compatibility in the appendix in the *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

I. Outputting Action Log Data

Performance Management action logs consist of historical information whose output is linked with the alarm function for exceeded threshold values, such as system overloads.

For example, action logs are output when the PFM services start and stop, and when the status of the connection with PFM - Manager changes.

You can output action logs if 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 - RM for Platform and PFM - Base and how to set output of action logs.

I.1 Types of events that are output to action logs

The table below lists and describes the types of events that are output to action logs and when the action logs are output by PFM - RM for Platform and PFM - Base. The entries in the *Type of event* column are identifiers that are used to classify the events that are output to action logs.

Table I-1: Types of events that are output to action logs

Type of event	Description	When output by PFM - RM for Platform or PFM - Base
StartStop	Event indicating startup or termination of software	<ul style="list-style-type: none"> At startup and termination of PFM services At startup and termination of the stand-alone mode
ExternalService	<ul style="list-style-type: none"> Event indicating the result of communication between JP1 products and external services Event indicating the occurrence of an abnormal communication 	At a change in the status of the connection with PFM - Manager
ManagementAction	<ul style="list-style-type: none"> Event indicating execution of an important program action Event indicating execution of an action based on another audit category 	At execution of an automatic action

I.2 Storage format of action logs

This subsection describes the storage format of the action log file.

Action log information is output to the default file (current output file). When that file becomes full, new action log information is saved in a different 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, new operation logs are output to a shift file.

The shift file name is the current output file name to which a number is appended. Each time the current output file becomes full, the 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, the existing shift file `jpcaudit1.log` is renamed to `jpcaudit2.log` and the contents of the current output file are moved to `jpcaudit1.log`.

When the number of log files reaches its maximum value (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.

The `jpccomm.ini` file is used to specify information about whether action logs are to be output, the output destination, and the maximum number of storage files. For details about how to set the `jpccomm.ini` file, see *I.4 Action log output settings*.

I.3 Output format of action logs

Information about audit events is output to the Performance Management action logs. A separate action log file is output for each host. 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

CALFHM

*x.x, output-item-1=value-1, output-item-2=value-2, . . . , output-item-n=value-n***(2) Output destination***installation-folder\auditlog*

You can use the `jpccomm.ini` file to change the output destination of action logs. For details about how to set the `jpccomm.ini` file, see *I.4 Action log output settings*.

(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 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 I-2: Common output items for action logs

Output item		Value	Description
Item name	Output attribute		
Common specification identifier	--	CALFHM	Identifier indicating that this is the action log format
Common specification revision number	--	<i>x.x</i>	Revision number used for managing action logs
Sequence number	seqnum	<i>sequence-number</i>	Sequence number of action log records
Message ID	msgid	KAVExxxx-x	Message ID
Date and time	date	<i>YYYY-MM-DDThh:mm:ss.sssTZD[#]</i>	Output date, time, and time zone of an action log
Generated program name	progid	JP1PFM	Name of the program where the event occurred

I. Outputting Action Log Data

Output item		Value	Description
Item name	Output attribute		
Generated component name	compid	<i>service-ID</i>	Name of the component where the event occurred
Generated process ID	pid	<i>process-ID</i>	Process ID of the process where the event occurred
Generated location	ocp:host	<ul style="list-style-type: none"> • <i>host-name</i> • <i>IP-address</i> 	Location where the event occurred
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
Event result	result	<ul style="list-style-type: none"> • Success • Failure • Occurrence 	Result of the event
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 between date and time.

TZD is 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 I-3: Fixed output items for action logs

Output item		Value	Description
Item name	Output attribute		
Object information	obj	<ul style="list-style-type: none"> • <i>service-ID-of-PFM-Agent</i> • <i>added-deleted-or-updated-user-name</i> (PFM user) 	Operation target
	obj:table	<i>alarm-table-name</i>	
	obj:table	<i>alarm-name</i>	
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

I. Outputting Action Log Data

Output item		Value	Description
Item name	Output attribute		
Permissions information	auth	<ul style="list-style-type: none"> Administrator user Management General user Ordinary Windows Administrator UNIX SuperUser 	Permissions of the user who performed the operation
	auth:mode	<ul style="list-style-type: none"> PFM authentication mode pfm JPI authentication mode jp1 OS user os 	Authentication mode of the user who performed the operation
Output source	outp:host	<i>name-of-PFM-Manager-host</i>	Host that output the action log
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 the <code>jpccalarm</code> command) 	Host that issued the operation instruction
Free description	msg	<i>message</i>	Message that is output in the event of an alarm and execution of automatic action

Whether each fixed output item exists depends on the output timing. The following subsections describe the message ID and fixed output items for each output timing.

■ Startup and termination of PFM services (StartStop)

- Output host
Host on which the corresponding service is running
- Output component
Each service that starts and stops

A message ID and operation information are output when the PFM service starts and stops (StartStop). The following table lists and describes the message IDs and operation information that are output.

Table I-4: Message IDs and operation information that are output when a PFM service starts and stops (StartStop)

Item name	Attribute name	Value
Message ID	msgid	<ul style="list-style-type: none"> • Start: KAVE03000-I is output. • Stop: KAVE03001-I is output.
Operation information	op	<ul style="list-style-type: none"> • Start: start is output. • Stop: stop is output.

■ **Startup and termination of the stand-alone mode (StartStop)**

- Output host
PFM - RM host
- Output component
Remote Monitor Collector and Remote Monitor Store services

A message ID is output when the stand-alone mode starts and ends (StartStop). The following table lists and describes the message IDs that are output.

Table I-5: Message IDs that are output when the stand-alone mode starts and ends (StartStop)

Item name	Attribute name	Value
Message ID	msgid	<ul style="list-style-type: none"> • Start of the stand-alone mode: KAVE03002-I is output. • End of the stand-alone mode: KAVE03003-I is output.

Note 1

Fixed output items are not output.

Note 2

When each service of PFM - RM for Platform starts, it connects to the PFM - Manager host to register node information and to acquire 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 in order to indicate that the

service has started in the stand-alone mode.

Thereafter, the service continues to attempt to connect to the PFM - Manager host at specific intervals. When the service successfully registers node information and acquires definition information, it ends the stand-alone mode and KAVE03003-I is issued.

Output of KAVE03002-I and KAVE03003-I in the action logs indicates that PFM - RM for Platform was running in incomplete status.

■ **Change to the status of the connection to PFM - Manager (ExternalService)**

- Output host
PFM - RM host
- Output component
Remote Monitor Collector and Remote Monitor Store services

A message ID is output when the status of the connection to PFM - Manager changes (ExternalService). The following table lists and describes the message IDs that are output.

Table I-6: Message IDs that are output when the status of the connection to PFM - Manager changes (ExternalService)

Item name	Attribute name	Value
Message ID	msgid	<ul style="list-style-type: none"> • Transmission of an event to PFM - Manager failed (queuing started): KAVE03300-I is output. • Re-transmission of an event to PFM - Manager was completed: KAVE03301-I is output.

Note 1

Fixed output items are not output.

Note 2

If transmission of an event to PFM - Manager fails, the Remote Monitor Collector service starts queuing events. Thereafter, each event is queued until the number of queued events reaches 3.

KAVE03300-I is output when event transmission fails and queuing starts.
KAVE03301-I is output when connection with PFM - Manager is restored and transmission of queued events is completed.

Output of KAVE03300-I and KAVE03301-I in action logs brackets the period

during which events were not transmitted to PFM - Manager in real time.

Note 3

The Remote Monitor Collector service normally sends events to PFM - Manager via the Remote Monitor Store service. If the Remote Monitor Store service is stopped for some reason, the Remote Monitor Collector service sends events to PFM - Manager directly.

KAVE03300-I is output when transmission of events to PFM - Manager fails. At this point, KAVE03301-I is not output because queuing has not started.

This action log indicates the 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

When an automatic action is executed (ManagementAction), a message ID and free description item are output. The following table lists and describes the message IDs and free description items that are output.

Table I-7: Message IDs and free description items that are output during execution of an automatic action (ManagementAction)

Item name	Attribute name	Value
Message ID	msgid	<ul style="list-style-type: none"> • Creation of a command execution process was successful: KAVE03500-I is output. • Creation of a command execution process failed: KAVE03501-W is output. • Email transmission was successful: KAVE03502-I is output. • Email transmission failed: KAVE03503-W is output.
Free description	msg	<ul style="list-style-type: none"> • Command execution: cmd=<i>executed-command-line</i> is output. • Email transmission: mailto=<i>destination-email-address</i> is output.

Note

KAVE03500-I is output when a command execution process is created successfully. Thereafter, the result of checking for 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=7A1host01, pid=2076,  
ocp:host=host01, ctgry=StartStop, result=Occurrence,  
subj:pid=2076,op=Start
```

I.4 Action log output settings

Use the `jpccomm.ini` file to specify settings that enable output of action logs. If you do not specify these settings, action logs will not be output. This subsection describes how to specify the action log output settings and provides details about the `jpccomm.ini` file.

(1) How to specify the settings

To specify the action log output settings:

1. Stop all Performance Management services on the host.
2. Use a program such as a text editor to edit the `jpccomm.ini` file.
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 folder

The storage folder is *PFM-Manager-installation-folder*.

(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 file

The specification format is as follows:

```
"item-name"=value
```

The following table lists and describes the settings to be specified in the `jpccomm.ini` file.

Table I-8: Settings specified in the `jpccomm.ini` file and their initial values

Item	Description
[Action Log Section]	Specifies the section name. This item cannot be changed.
Action Log Mode	<p>Specifies whether action logs are to be output. This item is mandatory.</p> <ul style="list-style-type: none"> • Initial value 0 (do not output) • Permitted values 0 (do not output), 1 (output) <p>If any other value is specified, an error message is output, in which case action logs are not output.</p>
Action Log Dir	<p>Specify the output destination for action logs as an absolute path. In a logical host environment, specify a directory on the shared disk. If the directory you specify is not on the shared disk, Performance Management will output action logs to each physical host that forms the basis for the logical host. If you specify a path that exceeds the maximum allowable length or the system is unable to access the directory, an error message is output to the common message log and Performance Management will not output action logs.</p> <ul style="list-style-type: none"> • Initial value: Omitted • Value used when this item is omitted (default): On physical hosts: Windows: <i>installation-folder</i>\auditlog UNIX: /opt/jp1pc/auditlog On logical hosts: Windows: <i>environment-directory</i>\jp1pc\auditlog UNIX: <i>environment-directory</i>/jp1pc/auditlog • Available values: Character strings from 1 to 185 bytes in length
Action Log Num	<p>Specifies the maximum number of log files. This is the total number of current output file and shift files.</p> <ul style="list-style-type: none"> • Initial value Omitted • 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 the value 5 (the default) 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 2 to 10 that is the closest to the specified value is set.</p>

I. Outputting Action Log Data

Item	Description
Action Log Size	<p>Specifies the log file size in kilobytes.</p> <ul style="list-style-type: none">• Initial value Omitted• Value assumed when the item is omitted (default) 2,048• 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 a value of 2,048 (the default) 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 the closest to the specified value is set.</p>

J. Glossary

action

An operation that is executed automatically by Performance Management when data being monitored reaches a threshold. The following are the types of actions:

- Sending an email
- Executing a command
- Issuing an SNMP trap
- Issuing a JP1 event

Action Handler

One of the PFM - Manager or PFM - RM services. This service executes actions.

administration tool

Various commands and GUI functions that are used to check the service status and to manipulate performance data. It provides the following functions:

- Displaying the configuration and status of services
- Backing up and restoring performance data
- Exporting performance data to a text file
- Erasing performance data

agent

The PFM - RM service that collects performance data.

alarm

Information that defines an action to be executed and the event message to be sent when the data being monitored reaches a threshold.

alarm table

A table consisting of at least one alarm that defines the following information:

- Object to be monitored (such as Process, TCP, or WebService)
- Information to be monitored (such as the CPU usage rate or the number of bytes received per second)
- Condition to be monitored (such as a threshold value)

bind

Process of associating an alarm with an agent. When an alarm is bound to an agent, the

user can be notified when the performance data collected by the agent reaches the threshold defined for the alarm.

cluster system

A system of multiple server systems that are linked to each other. The two types of cluster systems are a High Availability (HA) cluster system and a load-balancing cluster system.

An HA cluster system achieves high availability. Its purpose is to provide continuous operation even in the event of a failure. If a server fails during application processing, a standby server inherits the processing. This prevents the application from being interrupted in the event of a failure, thereby improving availability.

A load-balancing cluster system distributes the workload among multiple nodes in order to improve throughput. If a node stops due to a failure, this method can also improve availability by switching nodes so that processing can continue.

In this manual, *cluster system* refers to an HA cluster system.

Correlator

One of the PFM - Manager services. This service controls event transmission between services. When the Correlator checks an alarm status and determines that the threshold value has been exceeded, it sends an alarm event and an agent event to the Trap Generator service and to PFM - Web Console.

data model

A collective name for the records and fields of a PFM - RM. A data model is managed by its version.

database ID

ID of a database that is added to each of PFM - RM's records. The database ID indicates the type of the 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

drilldown report

A report that is associated with another report or with a field in a report. Use a drilldown report to display detailed or related information about a report.

executing node

The node executing jobs at one of the server systems that constitute a cluster system

(node whose logical host is active).

failover

Inheritance in a cluster system of a server's job processing from the executing node to the standby node in the event of a failure.

field

A unit of performance data; multiple fields constitute a record.

function ID

A 1-byte identifier that indicates the function type of a Performance Management program service. This is part of the service ID.

historical report

A report indicating the status of a monitoring target from a point in time in the past to the current time.

instance

In this manual, the term *instance* is used as follows:

- When referring to the record format

Each row in a record is called an *instance*. A record consisting of a single row is called a *single-instance record*, while a record consisting of multiple rows is called a *multi-instance record*.

- When referring to the PFM - Agent and PFM - RM startup method

A single agent that monitors the target on the same host is called a *single-instance agent*. On the other hand, when the monitoring target supports multiple instances, an agent that monitors all instances of the monitoring target is called a *multi-instance agent*. Each agent constituting the multi-instance agent is called an *instance*.

instance number

An identifier indicating a 1-byte management number that is used for internal processing. An instance number is part of the service ID.

lifetime

The period over which consistency of the performance data collected in a record is guaranteed.

Master Manager

One of the PFM - Manager services. This is PFM - Manager's main service.

Master Store

One of the PFM - Manager services. This service manages the alarm events issued from each PFM - Agent or PFM - RM. The Master Store service uses a database to retain event data.

monitored host

A host that is monitored by PFM - RM for Platform.

monitoring template

Predefined alarms and reports provided by PFM - RM. The monitoring template simplifies preparations for monitoring the operation status of PFM - RM because the user does not have to create complex definitions.

multi-instance record

A record consisting of multiple rows. Multi-instance records have unique ODBC key fields.

See *instance*.

Name Server

One of the PFM - Manager services. This service manages service configuration information in the system.

ODBC key field

A field that is needed in order to use SQL with PFM - Manager or PFM - Base to access data in the records stored in a Store database. Some ODBC key fields are common to all records and some are specific to individual records.

PD record type

See *Product Detail record type*.

performance data

Data collected from a monitored system about the operation status of its resources.

Performance Management

A collective name for a group of software programs that are provided for monitoring and analyzing 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

PFM - Agent

One of the program products constituting Performance Management. PFM - Agent is equivalent to the system monitoring facility. There are various PFM - Agents according to the application being monitored, database, and OS. PFM - Agent provides the following functions:

- Monitoring the performance of the monitoring target
- Collecting and recording data on the monitoring target

PFM - Base

One of the program products constituting Performance Management. PFM - Base provides the core functions for achieving operation monitoring by Performance Management. PFM - Base is required in order to run PFM - Agent and PFM - RM. PFM - Base provides the following functions:

- Administrative tools, including various commands
- Common functions needed for linkage between Performance Management and other systems

PFM - Manager

One of the program products constituting Performance Management. PFM - Manager is equivalent to the manager facility and provides the following functions:

- Management of the Performance Management program products
- Management of events

PFM - Manager name

A field name that is specified in SQL statements to access field data in a Store database when SQL is used with PFM - Manager.

A name used to identify a field in a Store database. This name is used to specify fields in commands.

PFM - RM

One of the program products constituting Performance Management. PFM - RM is equivalent to the system monitoring facility. One PFM - RM can monitor multiple targets. There are various PFM - RMs according to the application being monitored, database, and OS. PFM - RM provides the following functions:

- Monitoring the performance of remote monitoring targets
- Collecting and recording data on the monitoring targets

PFM - View name

An alias of the PFM - Manager name. PFM - View names are more intuitive than the PFM - Manager names. For example, a field has the PFM - Manager name `INPUT_RECORD_TYPE`, while its PFM - View name is Record Type. The PFM - View name is used to specify a field using GUI on PFM - Web Console.

PFM - Web Console

One of the program products constituting Performance Management. PFM - Web Console is a browser and provides a Web application server function for achieving central monitoring of the Performance Management system. PFM - Web Console provides the following functions:

- Display of GUI windows
- Integrated monitoring and management
- Definition of reports and alarms

physical host

The environment that is unique to each server constituting a cluster system. A physical host environment is not inherited to any other server even in the event of failover.

PI record type

See *Product Interval record type*.

PL record type

See *Product Log record type*.

Product Detail record type

A type of record that stores performance data about the system status at a specific point in time, such as information about the hosts that are being monitored currently. Use the PD record type to obtain the system status at a specific point in time, such as the following:

- System's operation status
- Capacity of the current file system in use

product ID

A 1-byte identifier indicating the Performance Management program product to which a Performance Management program service belongs. This is part of the service ID.

Product Interval record type

A type of record that stores performance data obtained over a specific period of time (interval), such as the CPU usage rate every 5 minutes. Use the PI record type to analyze changes to or trends in the system status over time, such as the following:

- Changes in the number of system calls that are issued over a specific period of time
- Changes in the capacity of the file system being used

Product Log record type

A type of record that stores log information about a database or application being executed on a UNIX system.

real-time report

A report indicating the current status of a monitoring target.

record

A format in which collected performance data is stored. The record type depends on the Store database.

Remote Monitor Collector

One of the PFM - RM services. This service collects performance data and evaluates performance data based on threshold values set for alarms.

Remote Monitor Store

One of the PFM - RM services. This service stores performance data. The Remote Monitor Store service uses a database to record performance data. There is a Remote Monitor Store service for each PFM - RM.

remote monitoring

A function for monitoring the operation status of a remote server from a separate host without having to install an agent at the monitored server.

report

A set of definitions for displaying performance data collected by PFM - RM in a graphical manner. It mainly contains definitions of the following information:

- Records to be displayed in the report
- Performance data items to be displayed
- Performance data display format (such as table or graph)

service ID

A unique ID 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 individual agents' performance data, the service ID for the Performance Management program is specified in the command.

The format of the service ID depends on the settings for the product name display function. For details about the format of the service ID, see the chapter that describes the functions of Performance Management in the *Job Management Partner 1/ Performance Management Planning and Configuration Guide*.

single-instance record

A record consisting of a single row. Single-instance records do not have a unique ODBC key field.

See *instance*.

stand-alone mode

A status in which PFM - RM is running independently. Even if PFM - Manager's Master Manager and Name Server services cannot be started for a reason such as a failure, PFM - RM can be started independently to collect performance data.

standby node

The node at one of the server systems that constitute a cluster system that is in wait (standby) status so that it can inherit job processing in the event of a failure at the executing node.

See *instance*.

status management function

A function for managing the status of all services that are running on PFM - Manager and PFM - RM. The status management function enables appropriate error recovery actions to be taken promptly because the system administrator can obtain accurate start and stop status information for the services at each host.

Store database

A database in which performance data collected by the Remote Monitor Collector service is stored.

Trap Generator

One of the PFM - Manager services. This service issues SNMP traps.

workgroup

A unit for monitoring processes executed by PFM - RM for Platform. A workgroup can be specified in the following units:

- Windows users
- Windows groups

- Programs executed by a process

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Manual number:	
Your name:	
Company or organization:	
Street address:	
Comment:	

(For Hitachi use)
