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Job Management Partner 1/Performance Management

Planning and Configuration Guide

3020-3-R31(E)

■ Relevant program products

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

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

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

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

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

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

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

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

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

P-9E2C-AJ92 Job Management Partner 1/Performance Management - Base version 09-00 (for Solaris 10 (x86), Solaris 10 (x64))

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

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-9V2C-AJ92 Job Management Partner 1/Performance Management - Base version 09-00 (for Linux AS 4 (IPF), Linux 5 (IPF), Linux 5 Advanced Platform (IPF))

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))

In addition to the above products, this product is targeted at the PFM - Agent and PFM - RM products of Job Management Partner 1/Performance Management, which require Job Management Partner 1/Performance Management - Base. Also, these products include parts that were developed under licenses received from third parties.

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Preface

This manual describes the JP1/Performance Management functionalities, and the methods for setting up and constructing the system. In this manual, *Job Management Partner 1* is abbreviated as *JP1*.

Intended readers

This manual is intended for readers with an interest in setting up and operating a system that uses JP1/Performance Management. It also assumes that the reader is familiar with the system that will be monitored.

For details on how to collect performance data when using JP1/Performance Management - Agent and JP1/Performance Management - Remote Monitor, refer to the manuals for each of these products.

Organization of this manual

This manual is organized into the following parts. Note that this manual contains information common to all the operating systems that this product supports. If there are differences relating to specific operating systems, we note these differences in the text.

PART 1: Overview

PART 1 provides an overview and some operation examples of JP1/Performance Management.

PART 2: Design

PART 2 describes some of the main setup options for building an operation monitoring system with JP1/Performance Management. This part also explains the functionality provided by JP1/Performance Management.

PART 3: Configuration

PART 3 gives details on how to configure JP1/Performance Management and how to change the configurations.

Related publications

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

For Job Management Partner 1/Performance Management:

- *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 - Remote Monitor for Platform Description, User's Guide and Reference* (3020-3-R39(E))

- *Job Management Partner 1/Performance Management - Remote Monitor for Oracle Description, User's Guide and Reference* (3020-3-R40(E))

- *Job Management Partner 1/Performance Management - Remote Monitor for Microsoft(R) SQL Server Description, User's Guide and Reference* (3020-3-R41(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

- *Job Management Partner 1/Performance Management - Agent Option for Virtual Machine Description, User's Guide and Reference* (3020-3-R50(E))

- *Job Management Partner 1/Performance Management - Agent Option for Oracle Description, User's Guide and Reference* (3020-3-K67(E))

- *Job Management Partner 1/Performance Management - Agent Option for SQL Server Description, User's Guide and Reference* (3020-3-K69(E))

- *Job Management Partner 1/Performance Management - Agent Option for Job Management Description, User's Guide and Reference* (3020-3-K75(E))

- *Job Management Partner 1/Performance Management - Agent Option for Enterprise Applications Description, User's Guide and Reference* (3020-3-K66(E))

For Job Management Partner 1:

- *Job Management Partner 1/Base User's Guide* (3020-3-R71(E))

- *Job Management Partner 1/Integrated Management - Manager Quick Reference* (3020-3-R75(E))

- *Job Management Partner 1/Integrated Management - Manager Overview and System Design Guide* (3020-3-R76(E))

- *Job Management Partner 1/Integrated Management - Manager Configuration Guide* (3020-3-R77(E))

- *Job Management Partner 1/Integrated Management - Manager Administration Guide* (3020-3-R78(E))

- *Job Management Partner 1/Integrated Management - Manager GUI Reference* (3020-3-R79(E))

- *Job Management Partner 1/Integrated Management - Manager Command and Definition File Reference* (3020-3-R80(E))

- *Job Management Partner 1/Integrated Management - Manager Messages* (3020-3-R81(E))

- *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

- *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 Manager Description and Administrator's Guide* (3000-3-841(E))

Differences between versions

For JP1 Version 9 JP1/Performance Management, the manual contents of the old edition JP1 Version 8 *Job Management Partner 1/Performance Management System Configuration and User's Guide* (3020-3-K61-40(E)) have been divided into the following two 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))

Correspondence between the old edition JP1 Version 8 *Job Management Partner 1/ Performance Management System Configuration and User's Guide* (3020-3-K61-40(E)) and this manual *Job Management Partner 1/Performance Management Planning and Configuration Guide* (3020-3-R31(E)) is described below:

JP1 Version 8 *Job Management Partner 1/ Performance Management System Configuration and User's Guide* **(3020-3-K61-40(E))**	**JP1 Version 9** *Job Management Partner 1/ Performance Management Planning and Configuration Guide* **(3020-3-R31(E))**
PART 1: Overview	PART 1: Overview
1. Overview of Performance Management	1. Overview of Performance Management
2. Using Performance Management	2. Using Performance Management
PART 2: Design	PART 2: Design

JP1 Version 8 *Job Management Partner 1/ Performance Management System Configuration and User's Guide* (3020-3-K61-40(E))	JP1 Version 9 *Job Management Partner 1/ Performance Management Planning and Configuration Guide* (3020-3-R31(E))
3. Design of Operation Monitoring Systems that Use Performance Management	3. Design of Operation Monitoring Systems that Use Performance Management
4. Performance Management Functions	4. Performance Management Functions
PART 3: Configuration	PART 3: Configuration
5. Installation and Setup (in Windows)	5. Installation and Setup (in Windows)
6. Installation and Setup (in UNIX)	6. Installation and Setup (in UNIX)
PART 4: Operation	Moved into the *Job Management Partner 1/ Performance Management User's Guide* (3020-3-R32(E)).
7. Starting and Stopping Performance Management	
8. Managing User Accounts	
9. Monitoring Agents	
10. Managing Operation Monitoring Data	
11. Creation of Reports for Operation Analysis	
12 Operation Monitoring with Alarms	
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17. Linking with Network Node Manager (NNM) for Operation Monitoring	
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19. Detecting Problems within Performance Management	
20. Error Handling Procedures	
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JP1 Version 8 *Job Management Partner 1/ Performance Management System Configuration and User's Guide* **(3020-3-K61-40(E))**	JP1 Version 9 *Job Management Partner 1/ Performance Management Planning and Configuration Guide* **(3020-3-R31(E))**
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Appendix C. System Estimates	Appendix C. System Estimates
Appendix D. Kernel Parameter List	Appendix D. Kernel Parameter List
Appendix E. Migration Steps and Notes on Migration	Appendix E. Migration Steps and Notes on Migration
Appendix F. Version Compatibility	Appendix F. Version Compatibility
Appendix G. Outputting Action Log Data	Appendix G. Outputting Action Log Data
Appendix H. Health Check Agent	Appendix H. Health Check Agent
Appendix I. Version Changes	Appendix I. Version Changes
Appendix J. Glossary	Appendix J. Glossary

Conventions: Abbreviations

This manual uses the following abbreviations for product names:

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

Abbreviation			Full name or meaning
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/Intel 64)	Red Hat Enterprise Linux(R) 5 Advanced Platform (AMD/Intel 64)
		Linux 5 (AMD/Intel 64)	Red Hat Enterprise Linux(R) 5 (AMD/Intel 64)
		Linux AS 4 (AMD64 & Intel EM64T)	Red Hat Enterprise Linux(R) AS 4 (AMD64 & Intel EM64T)
		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)

Abbreviation			Full name or meaning
		Linux ES 4 (x86)	Red Hat Enterprise Linux(R) ES 4 (x86)
MSCS			Microsoft(R) Cluster Service
NNM	HP NNM		HP Network Node Manager Software version 6 or earlier
			HP Network Node Manager Starter Edition Software version 7.5 or earlier
Performance Management			Job Management Partner 1/Performance Management
PFM - Agent	PFM - Agent for Enterprise Applications		Job Management Partner 1/Performance Management - Agent Option for Enterprise Applications
	PFM - Agent for Job Management		Job Management Partner 1/Performance Management - Agent Option for Job Management
	PFM - Agent for Microsoft SQL Server		Job Management Partner 1/Performance Management - Agent Option for Microsoft(R) SQL Server
	PFM - Agent for Oracle		Job Management Partner 1/Performance Management - Agent Option for Oracle
	PFM - Agent for Platform	PFM - Agent for Platform (UNIX)	Job Management Partner 1/Performance Management - Agent Option for Platform (for UNIX systems)

Abbreviation			Full name or meaning
		PFM - Agent for Platform (Windows)	Job Management Partner 1/Performance Management - Agent Option for Platform (for Windows systems)
	PFM - Agent for Service Response		Job Management Partner 1/Performance Management - Agent Option for Service Response
	PFM - Agent for Virtual Machine		Job Management Partner 1/Performance Management - Agent Option for Virtual Machine
PFM - Base			Job Management Partner 1/Performance Management - Base
PFM - Manager			Job Management Partner 1/Performance Management - Manager
PFM - RM	PFM - RM for Microsoft SQL Server		Job Management Partner 1/Performance Management - Remote Monitor for Microsoft(R) SQL Server
	PFM - RM for Oracle		Job Management Partner 1/Performance Management - Remote Monitor for Oracle
	PFM - RM for Platform		Job Management Partner 1/Performance Management - Remote Monitor for Platform
PFM - Web Console			Job Management Partner 1/Performance Management - Web Console

Abbreviation		Full name or meaning
Solaris	Solaris 9	Solaris 9 (SPARC)
	Solaris 10	Solaris 10 (SPARC)
		Solaris 10 (x64)
		Solaris 10 (x86)
Windows Server 2003	Windows Server 2003 (x64) or 2003 (x64)	Microsoft(R) Windows Server(R) 2003, Enterprise x64 Edition
		Microsoft(R) Windows Server(R) 2003, Standard x64 Edition
		Microsoft(R) Windows Server(R) 2003 R2, Enterprise x64 Edition
		Microsoft(R) Windows Server(R) 2003 R2, Standard x64 Edition
	Windows Server 2003 (x86) or 2003 (x86)	Microsoft(R) Windows Server(R) 2003, Enterprise Edition
		Microsoft(R) Windows Server(R) 2003, Standard Edition
		Microsoft(R) Windows Server(R) 2003 R2, Enterprise Edition
		Microsoft(R) Windows Server(R) 2003 R2, Standard Edition
Windows Server 2008	Windows Server 2008 Enterprise	Microsoft(R) Windows Server(R) 2008 Enterprise
		Microsoft(R) Windows Server(R) 2008 Enterprise without Hyper-V(TM)
	Windows Server 2008 Standard	Microsoft(R) Windows Server(R) 2008 Standard

Abbreviation		Full name or meaning
		Microsoft(R) Windows Server(R) 2008 Standard without Hyper-V(TM)
WSFC		Windows Server(R) Failover Cluster

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

This manual also uses the following abbreviations:

Abbreviation	Full name
CCMS	Computing Center Management System
CPU	Central Processing Unit
CSV	Comma Separated Values
DB	DataBase
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name System
EJB	Enterprise JavaBeans
ERP	Enterprise Resource Planning
FQDN	Fully Qualified Domain Name
FTP	File Transfer Protocol
GIF	Graphics Interchange Format
GMT	Greenwich Mean Time
GUI	Graphical User Interface
HTML	HyperText Markup Language
HTTP	HyperText Transfer Protocol
IP	Internet Protocol

Abbreviation	Full name
LAN	Local Area Network
NAT	Network Address Translation
ODBC	Open DataBase Connectivity
OS	Operating System
PDF	Portable Document Format
SMTP	Simple Mail Transfer Protocol
SNMP	Simple Network Management Protocol
TCP	Transmission Control Protocol
UAC	User Account Control
URL	Uniform Resource Locator
UTC	Universal Time, Coordinated
WAN	Wide Area Network
WRP	Windows Resource Protection
XML	eXtensible Markup Language

Conventions: Diagrams

This manual uses the following conventions in diagrams:

● Computer   ● Server   ● Database   ● Shared disk or local disk
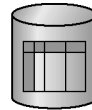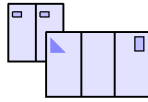
● Host center   ● Data flow   ● Control flows   ● Other flows
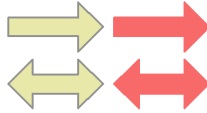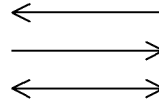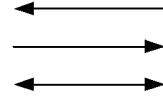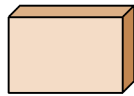
● Program   ● I/O operation   ● Window   ● Processing flow

● WAN (Wide Area Network)   ● LAN (Local Area Network)   ● Email   ● Cell phone
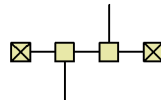
● Problems

Problems

Conventions: Fonts and symbols

Font and symbol conventions are classified as:

- General font conventions
- Conventions in syntax explanations
- Conventions for mathematical expressions

These conventions are described below.

General font conventions

The following table lists the general font conventions:

Font	Convention
Bold	Bold type indicates text in a window, other than the window title. Such text includes menus, menu options, buttons, radio box options, and explanatory labels. For example, bold is used in sentences such as the following: • From the **File** menu, choose **Open**. • Click the **Cancel** button. • In the **Enter name** entry box, type your name.
Italics	Italics are used to indicate a placeholder for actual text provided by the user or system. Italics are also used for emphasis. For example: • Write the command as follows: `copy` *source-file target-file* • Do *not* 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: • At the prompt, enter `dir`. • Use the `send` command to send mail. • The following message is displayed: `The password is incorrect.`

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

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

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

Conventions in syntax explanations

Syntax definitions appear as follows:

Store**D**atabase [temp|<u>perm</u>] (*database-name* ...)

The following table lists the conventions used in syntax explanations:

Example font or symbol	Convention
`StoreDatabase`	Code-font characters must be entered exactly as shown.
database-name	This font style marks a placeholder that indicates where appropriate characters are to be entered in an actual command.

Example font or symbol	Convention
SD	Bold code-font characters indicate the abbreviation for a command.
<u>perm</u>	Underlined characters indicate the default value.
[ ]	Square brackets enclose an item or set of items whose specification is optional.
| (vertical bar)	A vertical bar separates items in a list, and means "OR". For example, A|B|C means one of A or B or C.
...	An ellipsis (...) indicates that the item or items enclosed in ( ) or [ ] immediately preceding the ellipsis may be specified as many times as necessary.
()	Parentheses indicate the range of items to which the vertical bar (|) or ellipsis (...) is applicable.
{}	Curly brackets enclose a list of items, and indicate that one (and only one) of the items in the list must be used. A vertical bar (|) separates the items in the list. For example, {A|B|C} means that one of A or B or C must be used.

Conventions for mathematical expressions

The following table lists the conventions used in mathematical formulas:

Symbol	Meaning
x	Multiplication sign
/	This character indicates a division symbol.

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

In Performance Management of version 09-00 or later, enabling the product name display functionality allows the service IDs and service keys to be displayed as the product name. The following shows the displayed examples of service IDs and service keys for PFM - Agent for Platform (Windows) when the product name display functionality is enabled.

Identifier	Product name display functionality	
	Disabled	**Enabled**
Service ID	TS1 *host-name*	*host-name*<Windows>(Store)
	TA1 *host-name*	*host-name*<Windows>
Service key	agtt	Windows

This manual generally uses the format when the product name display functionality is

assumed to be effective.

Note that the product name display functionality can be enabled when the following conditions are satisfied:

- When the version of PFM - Agent or the prerequisite program (PFM - Manager or PFM - Base) within the same device of PFM -RM is 09-00 or later.

- When the version of PFM - Web Console or the connected PFM - Manager is 09-00 or later.

Conventions: KB, MB, GB and TB

This manual uses the following conventions:

- 1 KB (kilobyte) is 1,024 bytes.

- 1 MB (megabyte) is $1,024^2$ bytes.

- 1 GB (gigabyte) is $1,024^3$ bytes.

- 1 TB (terabyte) is $1,024^4$ bytes.

Conventions: Meaning of "bookmark"

- In this manual, *bookmark* is generally used when there is no need to distinguish *bookmark* and *combination bookmark*. *Combination bookmark* is used only for describing original functionalities of combination bookmarks.

Conventions: Meaning of "folder" and "directory"

- In this manual, *directory* is generally used to mean both *folder*, as used in Windows, and *directory*, as used in UNIX.

Conventions: Performance Management installation directory

This manual uses the expression *installation folder* for Windows Performance Management, and *installation directory* for UNIX Performance Management.

The default installation folder for Windows Performance Management is as follows:

Performance Management installation folder except for PFM - Web Console:

- For programs other than Windows Server 2003 (x64) and Windows Server 2008 (64 bit)

> *system-drive*:\Program Files\Hitachi\jp1pc\

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

> *system-drive*:\Program Files (x86)\Hitachi\jp1pc\

PFM - Web Console installation folder:

- For programs other than Windows Server 2003 (x64) and Windows Server 2008 (64 bit)

> *system-drive*:\Program Files\Hitachi\jp1pcWebCon\

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

> *system-drive*:\Program Files (x86)\Hitachi\jp1pcWebCon\

The default installation directory for UNIX Performance Management is as follows:

Performance Management installation directory except for PFM - Web Console:

> /opt/jp1pc/

PFM - Web Console installation directory:

> /opt/jp1pcwebcon/

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*.

Proper use of JP1/Performance Management manuals

Manuals for JP1/Performance Management are divided into the following manuals. Check the description below and refer to the appropriate manual depending on your purpose.

Manual name	Description
Job Management Partner 1/Performance Management Planning and Configuration Guide	Functionalities, and set up or configuration method
Job Management Partner 1/Performance Management User's Guide	Operation method
Job Management Partner 1/Performance Management Reference	Windows, commands, and messages

NNM products supported by Performance Management

Performance Management supports the linkage with the following products:

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

This manual generally uses *NNM* to indicate the above products, and *NNM linkage* for functionalities for linking with these products.

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

- HP Network Node Manager i Software v8.10

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Chapter

1. Overview of Performance Management

Performance Management is a product that monitors the operating status of the databases and applications that form an enterprise system. By notifying the system administrator in advance when the system reaches a critical state, Performance Management can prevent problems from affecting business operations. Performance Management can also efficiently collect data necessary for medium- and long-term analyses of a system's operating status.

This chapter describes the features of Performance Management.

1.1 Need for operation monitoring in an enterprise system
1.2 Features of Performance Management

1.1 Need for operation monitoring in an enterprise system

Today's enterprise systems serve an important role in supporting the running of a business. A failure of a system critical to the operation of your enterprise can mean not only significant financial loss as a result of delays to or discontinuance of business operations, but also a loss of client confidence. For this reason, improving the availability of the entire enterprise system and eliminating system bottlenecks to allow applications to run smoothly are important issues in business circles.

The following describes the manner in which the availability of an enterprise system can be improved and stable system operation can be achieved.

1.1.1 Why is operation monitoring necessary?

To ensure continued, stable operation of an enterprise system, system administrators need to detect faults in the databases, applications, and other resources and take appropriate action, in systems that are increasing in scale and becoming more complex. While managing system operations, system administrators are required to recognize when an error is about to occur by collecting and analyzing operating information representing the performance of resources like the network and OS, and database performance, and prevent these errors from occurring.

The following describes the problems faced when no form of operation monitoring is used, and the capabilities provided by operation monitoring.

(1) Issues faced when not monitoring system operation

When an error occurs in a database server or application server in a system, the system administrator must take steps to minimize the effects of the error on other running systems. This requires an arrangement that includes monitoring the operating status of the servers, detecting system errors, and immediately taking the appropriate action. However, when no form of operation monitoring is in place, the inability of the system user to access the system when the error occurs in the server might be detrimental to the operation of the business. The following figure shows the potential problems that might occur if a system's operations are not monitored.

Figure 1-1: FigureIssues faced when not monitoring system operation
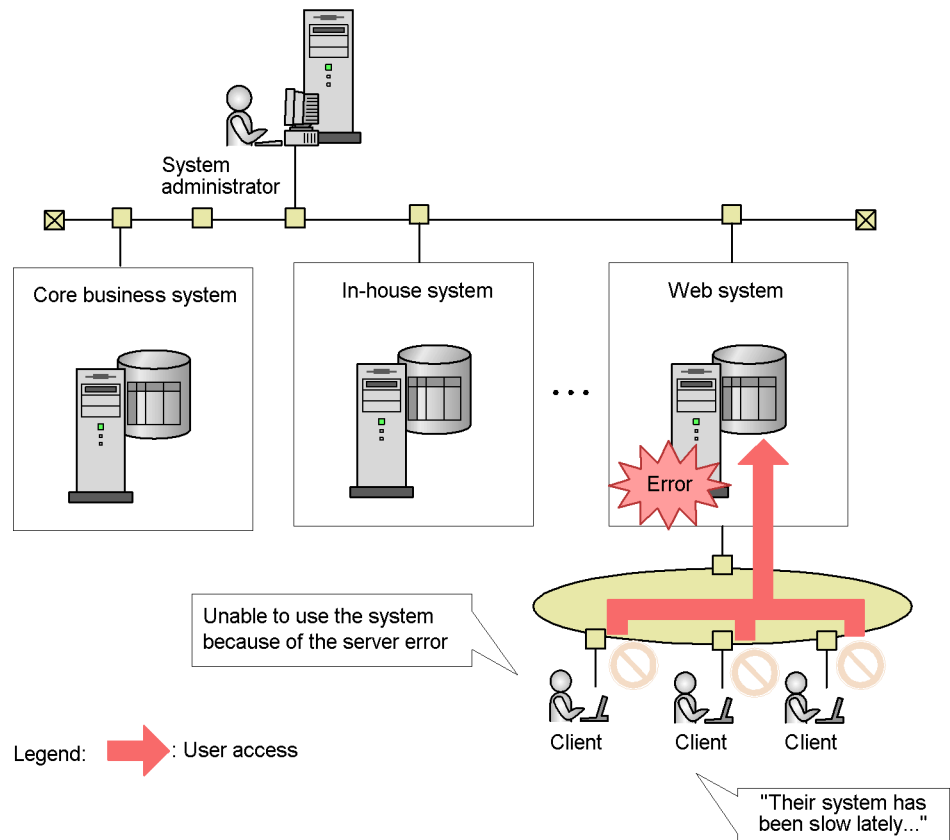
(2) Capabilities provided by operation monitoring

To keep an enterprise system running 24 hours a day, 365 days a year, the system administrator monitors databases, networks, OSs, and other resources, and ensures that sufficient resources are available to all active systems. This prevents situations in which the system goes down due to insufficient resources. The following figure shows an overview of resource monitoring.

Figure 1-2: FigureOverview of resource monitoring
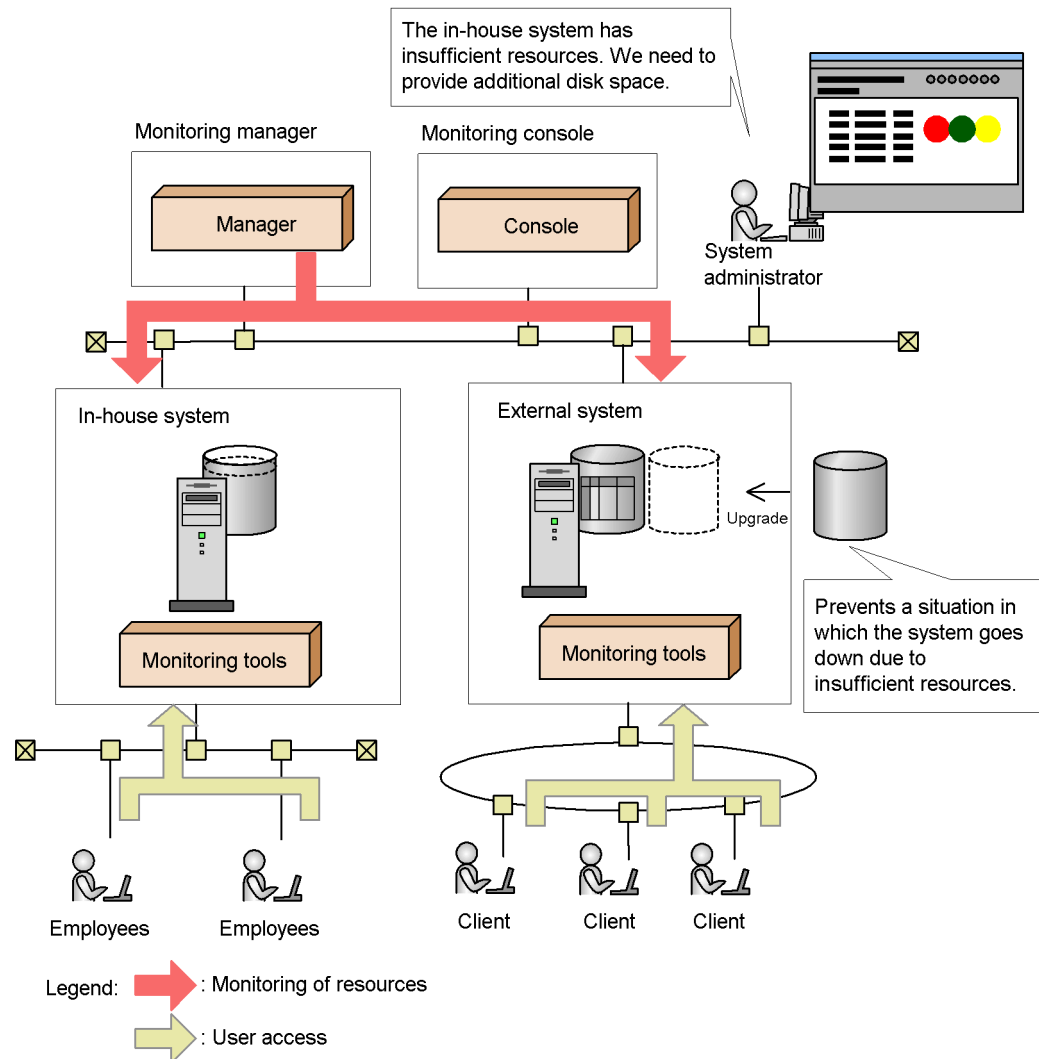
Also, by monitoring elements of system performance, such as the amount of traffic and response times of the business application server and database server, and displaying the results (performance data) in a report, the system administrator can determine whether the system is being used as intended, and properly identify the location of any bottlenecks in the system. This allows for the systematic addition of resources in a manner tied to the status of the system.

Figure 1-3: Overview of performance monitoring
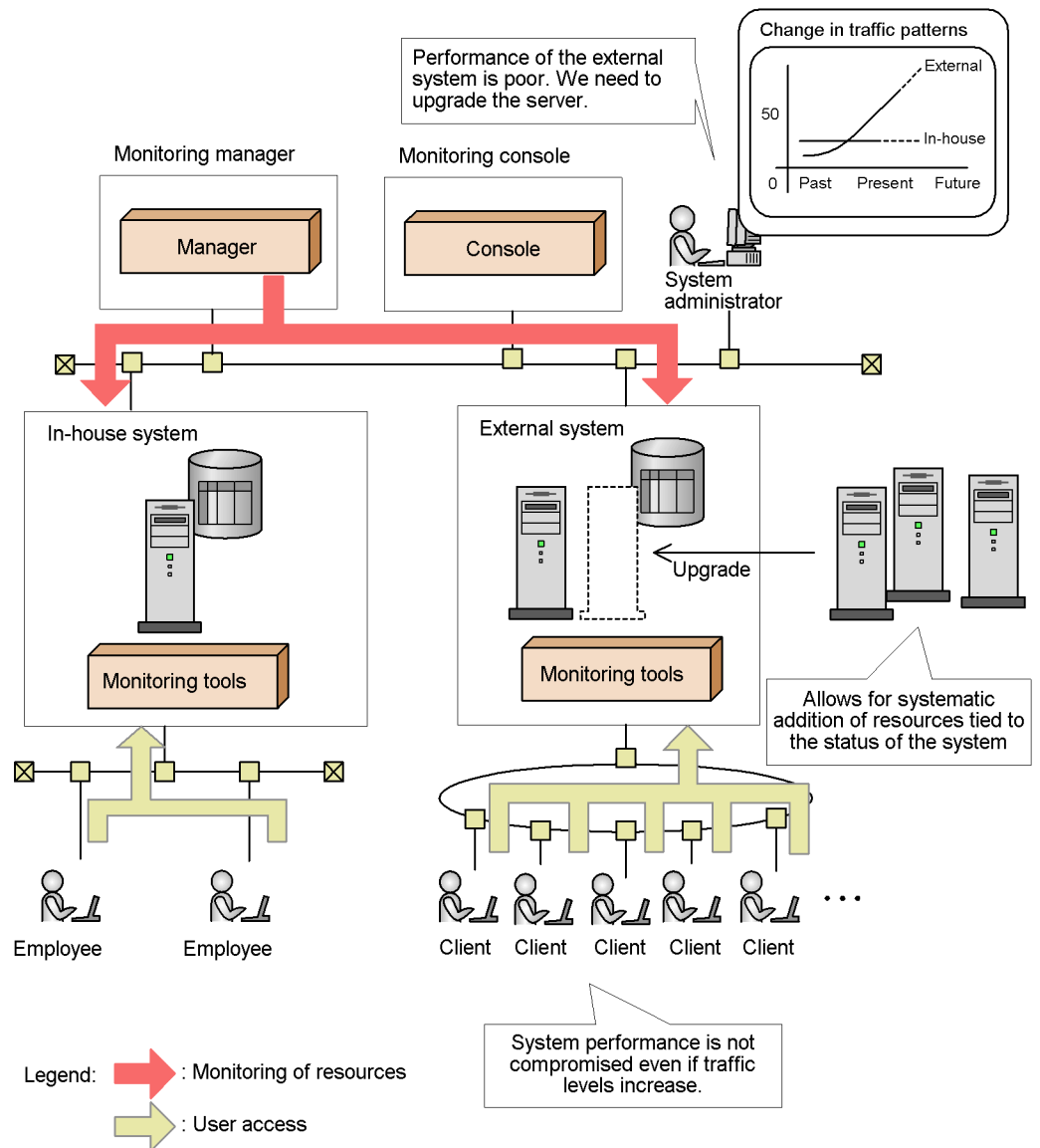
As you can see, operation monitoring ensures the stable operation of extensive and complex systems, as well as mission-critical systems. It also enables you to predict failures by allowing you to collect and analyze performance data across the entire system. This helps you to avoid potential risks while maintaining consistent, stable operation.

Operation monitoring also allows the system administrator to quantitatively ascertain the service level of the system. This allows for systematic system investment and can prevent the loss of business opportunities.

1.1.2 Operation monitoring using Performance Management

Performance Management is a series of products that centrally monitors the operating status of resources such as database servers and application servers.

Performance Management can acquire detailed information by placing the appropriate agents throughout the system according to the items being monitored, allowing for a highly detailed operation monitoring system.

Performance Management provides a variety of agent products corresponding to specific monitoring targets and products for analyzing the operating information. Performance Management can be deployed easily in an existing system by adding only the necessary monitoring agents that match the existing system environment. Also, in addition to monitoring resources in real time during system operation, Performance Management can gather and store performance data associated with system resources. Analysis of this stored data can serve as a useful tool for ascertaining the operating status of the system in its entirety or improving the performance of the system over the long term. The following figure shows operation monitoring using Performance Management.

Figure 1-4: Operation monitoring using Performance Management
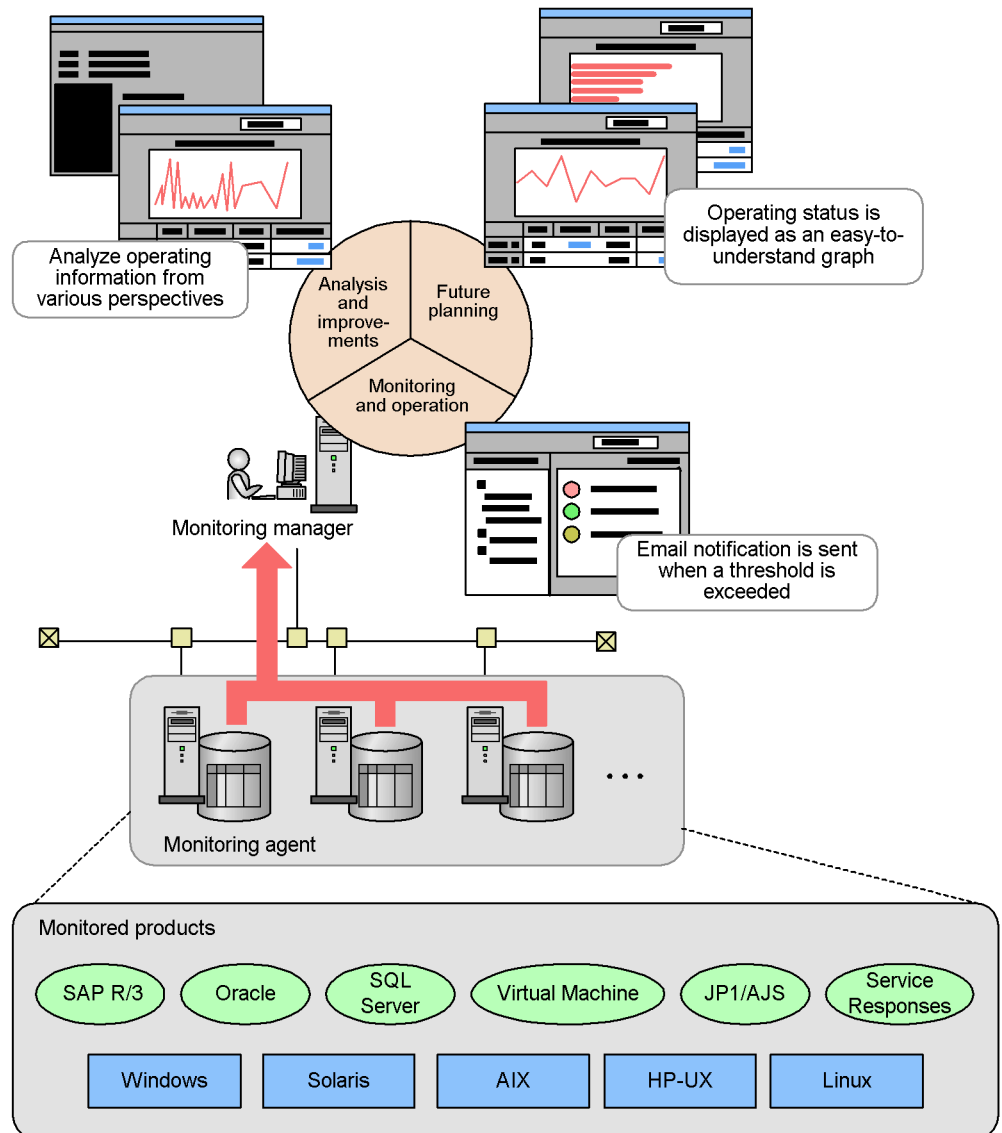
As shown in the figure above, by using Performance Management, the system administrator can collect and centrally manage performance data even in distributed system environments that contain a wide variety of products, without needing to address the differences between platforms. The following table shows examples of performance data that Performance Management can collect:

Table 1-1: Examples of performance data that can be collected

Monitoring target		Collected performance data
OS	Windows	CPU usage, available memory, disk status, network status, and device information
	HP-UX, Solaris, AIX, Linux	CPU usage, available memory, disk status, and amount of network data transferred
Database server	Oracle	Database usage, SQL information, and parameter information
	SQL Server	CPU usage, database use, cache hit rate, and lock information
Job management	AJS2	Number of jobs started, number of delayed jobs, number of held jobs, and length of time on hold
Service response management	Internet services	Response times for protocols such as HTTP, SMTP, FTP, and TCP
ERP	SAP R/3	Roll area usage (SAP memory), response time, and system log/ CCMS alerts
Virtual environment	VMware	CPU usage of each virtual machine and the physical server, disk I/ Os, disk usage, memory usage, the amount of network data transferred, etc.

For details on the performance data that can be collected, see the PFM - Agent or PFM - RM manuals.

1.1.3 Products provided by Performance Management

Performance Management provides the following four products required for operation monitoring:

- Monitoring manager (PFM - Manager)

  Performs integrated management of the operating status.

- Monitoring console server (PFM - Web Console)

  Outputs graphical reports and helps the user to configure Performance Management and analyze the operating status.

- Monitoring base (PFM - Base)

  The base program required to perform operation monitoring. PFM - Base performs tasks such as managing the collected operation monitoring data and outputting logs.

- Monitoring agent (PFM - Agent or PFM - RM)

  An agent that monitors the status of the OS and server programs.

PFM - Agent is required for agent monitoring; and must be installed on the monitored server. PFM - RM is required for remote monitoring, but you do not need to install the program on the monitored server.

Figure 1-5: Example configuration for Performance Management
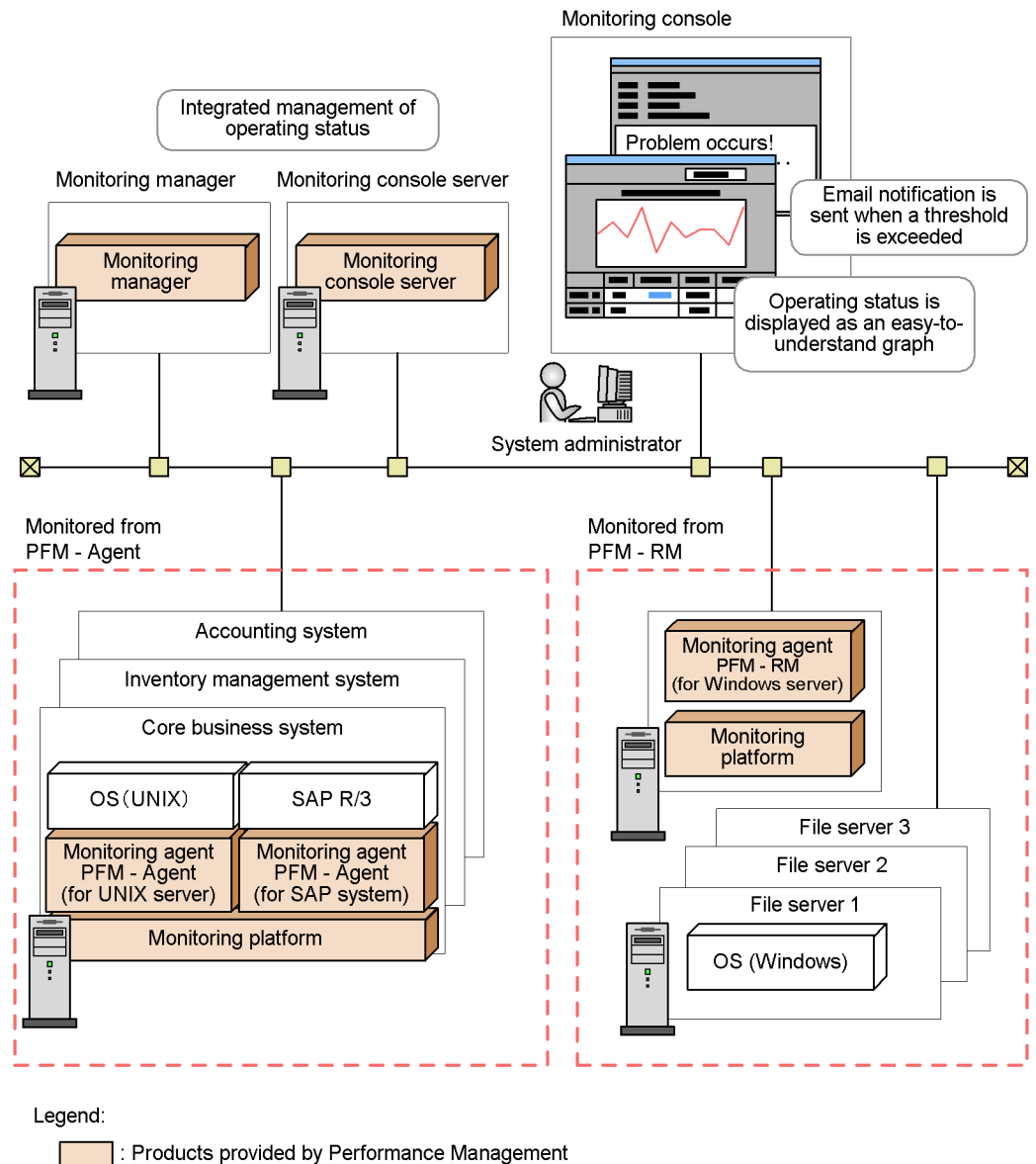
1.2 Features of Performance Management

Performance Management allows the system administrator to easily ascertain the operating status of such resources as business application processes and database resources, even in large-scale, complex, and mission-critical systems.

This section describes the features that Performance Management uses to perform operation monitoring.

1.2.1 Centralized monitoring of the operating status of large and complex enterprise systems

In a large-scale system consisting of a wide variety of servers and business applications, monitoring the operation of processes and database resources can involve a large commitment of time and effort. With Performance Management, however, you can easily build an operations monitoring system capable of centrally monitoring even large-scale and complex enterprise systems. Performance Management can also link with other operations management systems such as integrated operations management systems or network management systems and analyze performance data collected for the purpose of identifying inherent problems in the system. This allows for the early detection of problems in the enterprise system as well as analysis of system performance, and also allows you to establish an upgrade plan based on the projected operation of the system in the future.

The following describes the main features of Performance Management as used for a large-scale system.

(1) Easily expandable to suit the configuration of the monitored system

Performance Management offers numerous monitoring agents for monitoring resources such as database servers and business application servers. For this reason, you can perform operations monitoring simply by adding the necessary monitoring agents for the environment of the enterprise system.

Figure 1-6: Example of changing the Performance Management configuration after adding a new resource to the monitored system
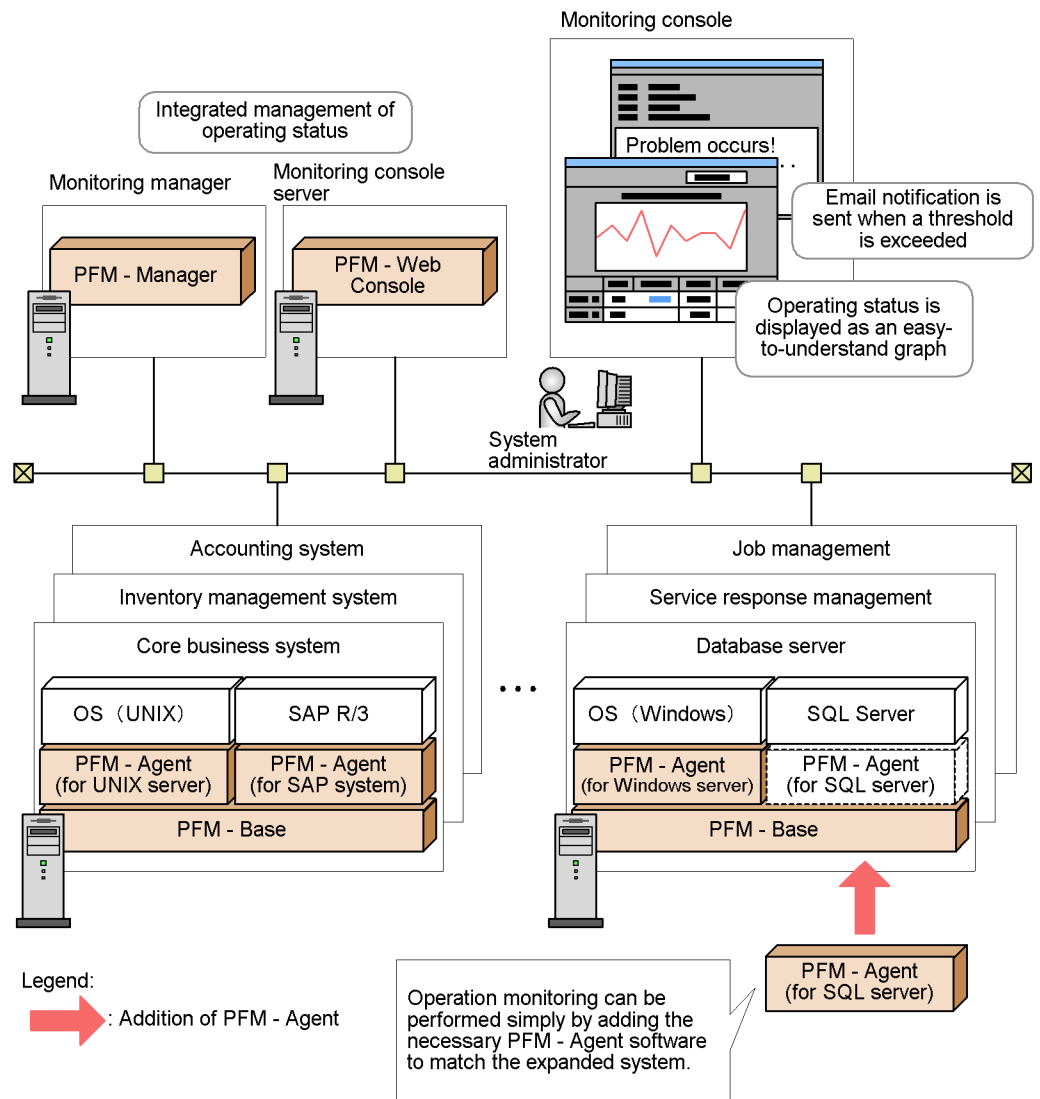
For details on building an operations monitoring system around Performance Management and the configuration of such a system, see *5. Installation and Setup (in Windows)* for Windows or *6. Installation and Setup (in UNIX)* for UNIX.

(2) Flexibly links with other systems

In a large-scale system containing multiple servers and programs, Performance

Management is able to flexibly link with other systems. By linking with an integrated operations management system or network management system, Performance Management can improve the availability and reliability of the entire enterprise system. Also, by conducting a work analysis of the data collected by Performance Management during operations monitoring, the system administrator can identify inherent problems affecting the enterprise system.

Figure 1-7: Linking Performance Management with other systems

Linking with other systems to provide integrated system monitoring

Integrated operations management system

Network management system

Performance information can be viewed from the integrated monitoring console

Performance information can be viewed from the network monitoring console

Operation monitoring system

Performance Management

Operation analysis system

Analyze trends using approximation curves

Aug   Sep   Oct

System problems can be discovered by analyzing system operation

System operation can be analyzed using custom applications

Linking with other systems to make efficient use of collected performance data

- Optimizing operations management of the entire enterprise system by linking with integrated system management products

  JP1 events issued by Performance Management can be monitored by JP1/IM, an integrated systems management product in the JP1 series, and Performance

Management can be called from JP1/IM. JP1/IM allows for centralized monitoring of the Performance Management status by using graphical icons. By checking these icons, the system administrator can identify where performance has dropped and caused a bottleneck, and take the appropriate action to resolve the problem before it has a significant effect on business operations. In this way, operations management can be optimized even for large-scale and complex enterprise systems, and integrated support is provided on an enterprise system-wide level throughout the cycle from monitoring the operating status to the application of countermeasures.

- Supporting stable operation of business networks by linking with network management products

  The status of the system being monitored by Performance Management can be monitored from the network management product (NNM). This allows for the integrated management of the operating status for systems in a large-scale network environment. Linking with NNM contributes to the stable operation of networks that support enterprise systems.

- Allowing collected performance data to be reprocessed freely according to the intended purpose

  The Performance Management ODBC driver provides access to the collected performance data from an ODBC-compliant application program such as Microsoft Excel. By using an ODBC-compliant application program, you can easily create reports suited to users' objectives and analyze performance data.

- Linking with products that analyze performance to identify system problems

  The collected performance data can be analyzed by using JP1/PFM - Analysis, a product for analyzing system operation. By using this product, you can analyze current trends in the operation of the system and identify issues before they become problems.

1.2.2 Use in mission-critical systems that demand high reliability and availability

Performance Management can monitor system operation in mission-critical systems while maintaining high reliability and availability.

This subsection describes the main features of Performance Management as used in a mission-critical system.

(1) Monitor the operation of an enterprise system without imposing a load on the monitored system

With Performance Management, the monitoring agent, rather than the monitoring manager, collects the performance data associated with the operating status of database resources, business applications, and other resources, and then stores the data into the

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Performance Management database (called the Store database). This means that large amounts of performance data are not regularly sent over the network, which eases the burden on the network.

Performance Management also provides functions that prevent the data collected by monitoring operations from becoming excessively large. This is accomplished by collecting only the necessary operating information, without taking up too much disk space.

This functionality is illustrated by the following examples:

- Based on such characteristics as the scale of the enterprise system and its usage patterns, Performance Management can be configured to acquire operating information for specific monitored items from a specific server at specific times.

- Depending on the monitored item, summarized data can be collected at a fixed interval.

- Operation monitoring is performed using a fixed amount of disk space by automatically overwriting old data.

Figure 1-8: Flow of operation monitoring data collected by Performance Management
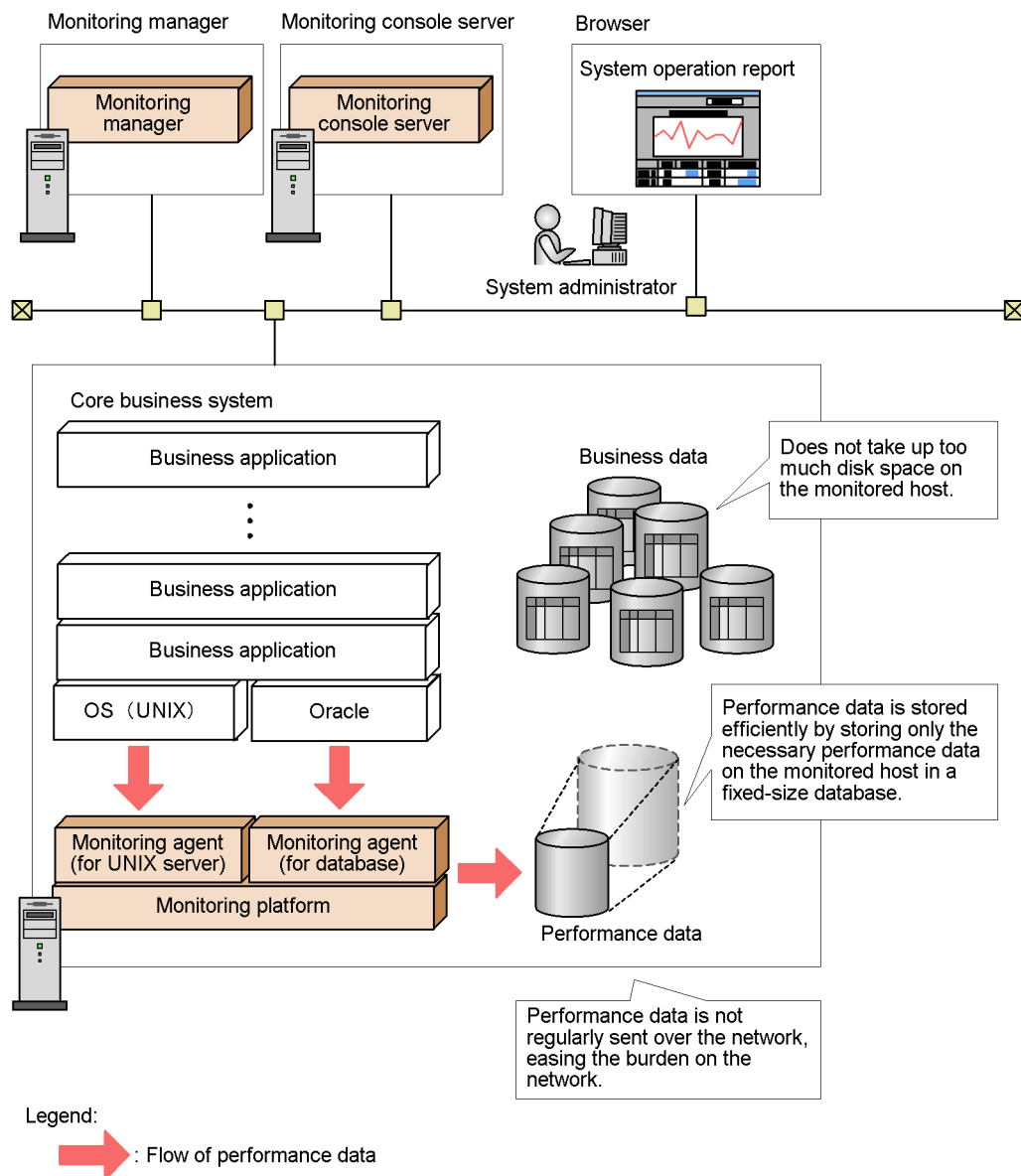
For details on managing data in Performance Management, see *4.2 Functions for collecting and managing performance data*.

(2) System administrators can be notified of problems before they have an effect on business

Performance Management can be configured to notify the system administrator when a monitored system reaches a critical state.

This allows for problems in monitored systems to be detected at an early stage and resolved before they have an effect on business operations.

For example, the system administrator can be notified by email when CPU usage of 80% or more is detected on a server in a specific system, or a system operator can be notified when the proportion of available disk space falls below 30% by having an icon on the console blink on and off.

You can also configure Performance Management to execute a command automatically when a system reaches a critical state.

In this manner, with Performance Management, a small team can efficiently monitor even large-scale systems.

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Figure 1-9: Example of using email to notify a system administrator of a problem in the system
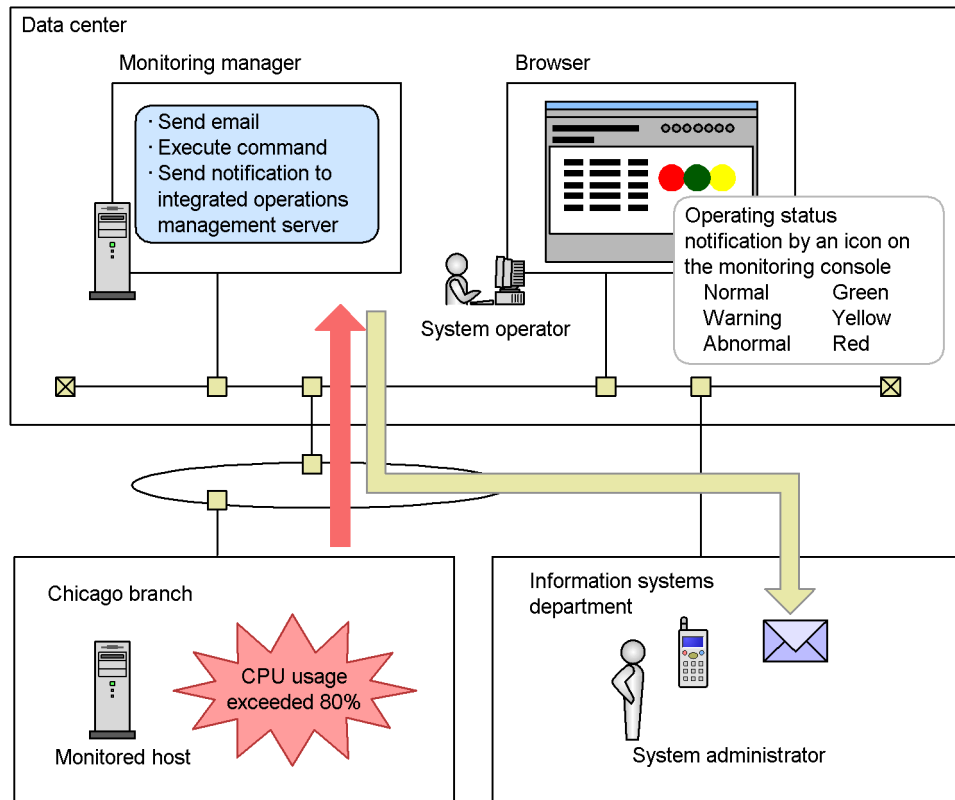
For details on the alarms issued when performance data exceeds a threshold, see *4.3 Functions for alerting the user when the system reaches a critical state*.

(3) Performance Management can be used in a cluster system to achieve stable system operation 24 hours a day, 365 days a year

By incorporating Performance Management into a cluster system, you can create a highly reliable system that continues to operate even in the event of a system failure. The following figure shows an example of cluster system operation.

Figure 1-10: Example of cluster system operation
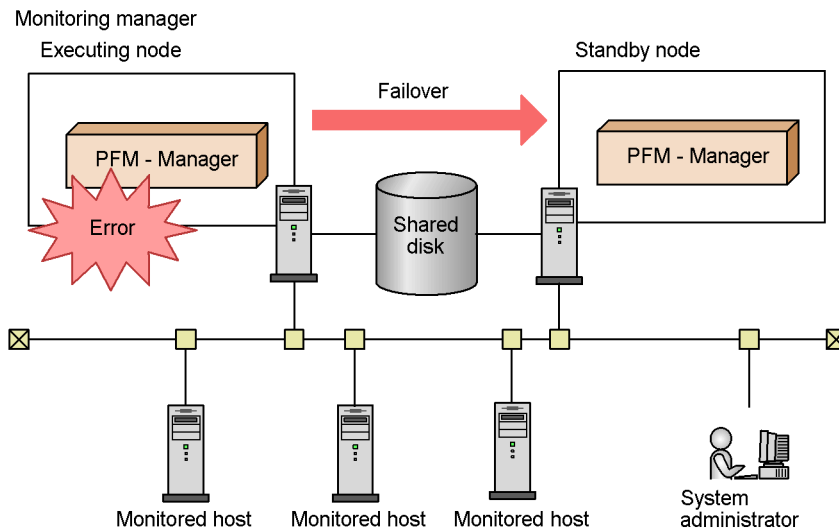
For details on how to configure and operate Performance Management in a cluster system, see the chapter that describes the cluster system configuration and operation in the *Job Management Partner 1/Performance Management User's Guide*.

(4) Ensuring stable system operation by detecting faults in the monitoring system itself

Performance Management can monitor the operating statuses of the PFM - Agent or PFM - RM services and the operating status of the host on which PFM - Agent or PFM - RM is running. It can also monitor the operating status of the host that is monitored by PFM - RM. This monitoring is achieved through the use of the *health check function*. By using this function, you can monitor the operating status of the host, and confirm whether PFM - Agent or PFM - RM is monitoring its monitoring targets correctly.

You can view the results in the following windows in PFM - Web Console:

- Agents window

- Event Monitor window

- Event History window

Because the heath check function gives you the option of saving monitoring results, you can view a report showing the operating status over time.

By defining alarms for the monitoring results of the operating statuses of the host, the system can issue alarm events when the health check function detects that the host is

operating abnormally or detects that PFM - Agent or PFM - RM is malfunctioning. The system can also execute an action in this situation, such as sending an email.

The following figure shows an example of monitoring the operating status by using the health check function.

Figure 1-11: Overview of monitoring the operating status by using the health check function (for agent monitoring)
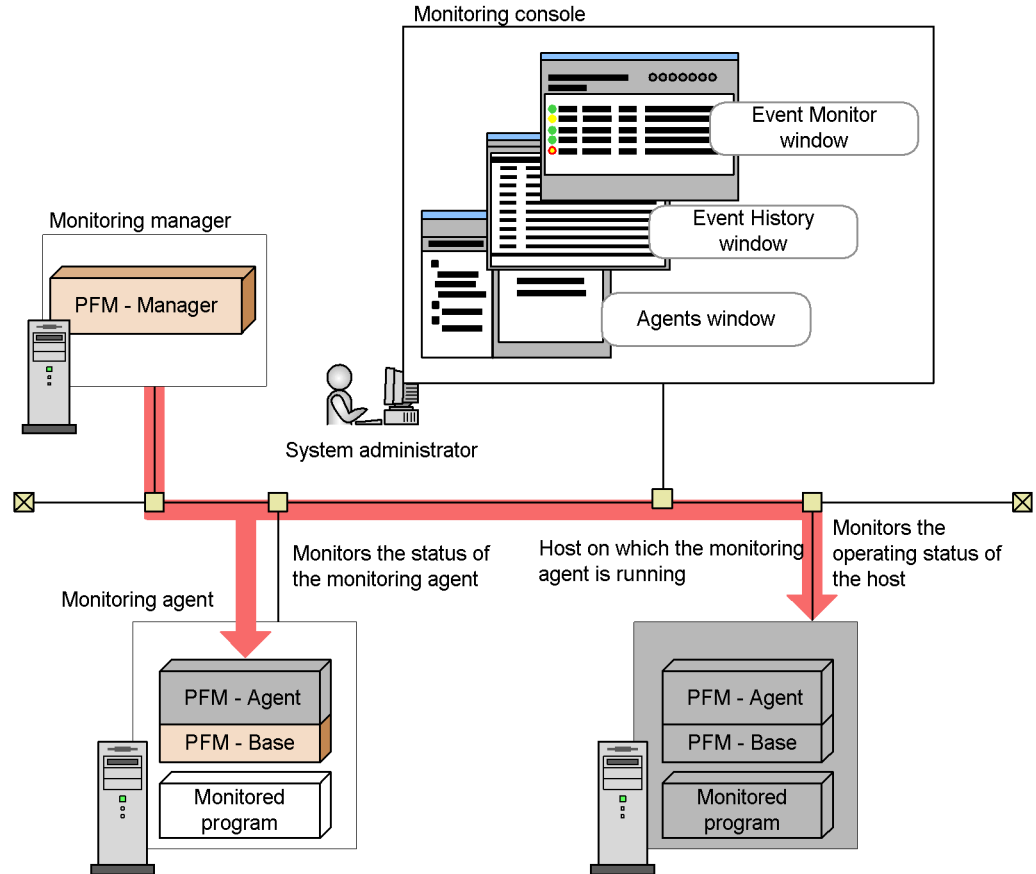
For remote monitoring, when an abnormal operation is detected within the monitored host, you can trigger an alarm event and perform other actions, such as sending emails.

Additionally, if for some reason a PFM service abnormally terminates, the Performance Management system is equipped with a function that can automatically restart the PFM service. This function is called the *PFM service automatic restart function*.

The PFM service automatic restart function is available for the following PFM services: PFM - Manager, Action Handler, PFM - Agent, and PFM - RM. This function cannot be used for the Status Server service. For details on services, see *4.1 Performance Management services*.

This function allows you to continue monitoring, even when a PFM service abnormally terminates.

The following figure gives an overview of the PFM service automatic restart function.

Figure 1-12: Overview of the PFM service automatic restart function
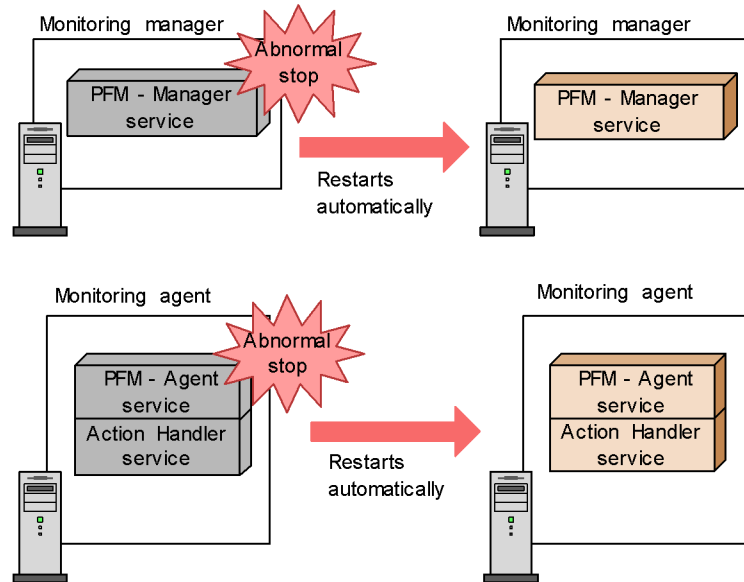
1.2.3 Easily create and operate an operations monitoring system

The ever-increasing scale and complexity of enterprise systems has increased the burden on system administrators. For this reason, implementing operations monitoring has required businesses to hire and train personnel. Performance Management provides various functions that support the creation and operation of an operation monitoring system. By using these functions, the system administrator can implement operations monitoring with minimal burden.

The following describes the main features of Performance Management in relation to creating and operating an operations monitoring system.

(1) Use of templates to easily configure monitored items

Deciding which items to monitor in an operation monitoring system and how each item is to be monitored requires a high level of skill.

Performance Management provides templates that contain definitions for frequently monitored items. This type of template is called a *monitoring template*.

Monitoring templates simplify the process of choosing which items to monitor.

Figure 1-13: How a system administrator determines which items to monitor and monitoring templates

Tasks of the system administrator

Functions provided by Performance Management (monitoring template)

Considerations based on business factors

· Why don't we set higher threshold values for mission-critical systems?
· Traffic to external sales-related systems might increase dramatically in the near future.
· There have been more and more complaints recently from users of the in-house system.

Considerations based on technological factors

· To decide which items to monitor for each RDBMS and server program in the system, I need to learn about each program.
· What threshold values are appropriate for these monitored items?
· What format should I use for the reports I create?

OS configuration template

Groupware configuration template

ERP server configuration template

Database configuration template

[Alarm]
Buffer cache > 95%
Free table space < 20%

[Report]

Sort area over time

Value

Time

The system administrator can design a monitoring policy by using a monitoring template.

For example, for a Windows server, the template provides definitions that issue a warning when the following monitored items reach critical states:

• The amount of available physical memory falls below 4 MB.

• CPU usage exceeds 80%.

• The proportion of free space on the logical drive falls below 15%.

You can also customize monitoring templates.

For details on monitoring templates, see the chapter that describes the monitoring templates in the appropriate PFM - Agent or PFM - RM manual.

(2) Convenient tools are provided to reduce the workload of the system administrator

Performance Management provides a monitoring console and operating commands for use in operations monitoring. There is no need to install and learn a different software package for each monitoring target.

System administrators can reduce their operations monitoring workload by making use of these user-friendly administration tools according to their purpose.

(a) Monitoring an enterprise system from a Web browser

By accessing the monitoring console server from a browser, system administrators can detect errors occurring in the enterprise system in real time and perform such tasks as managing the configuration of a monitored system. For example, when a problem occurs in the system, the system administrator can view the status of the operations monitoring system from home and quickly take the appropriate action before the error affects business.

Figure 1-14: Example of checking the operation monitoring system by using the browser from the remote site
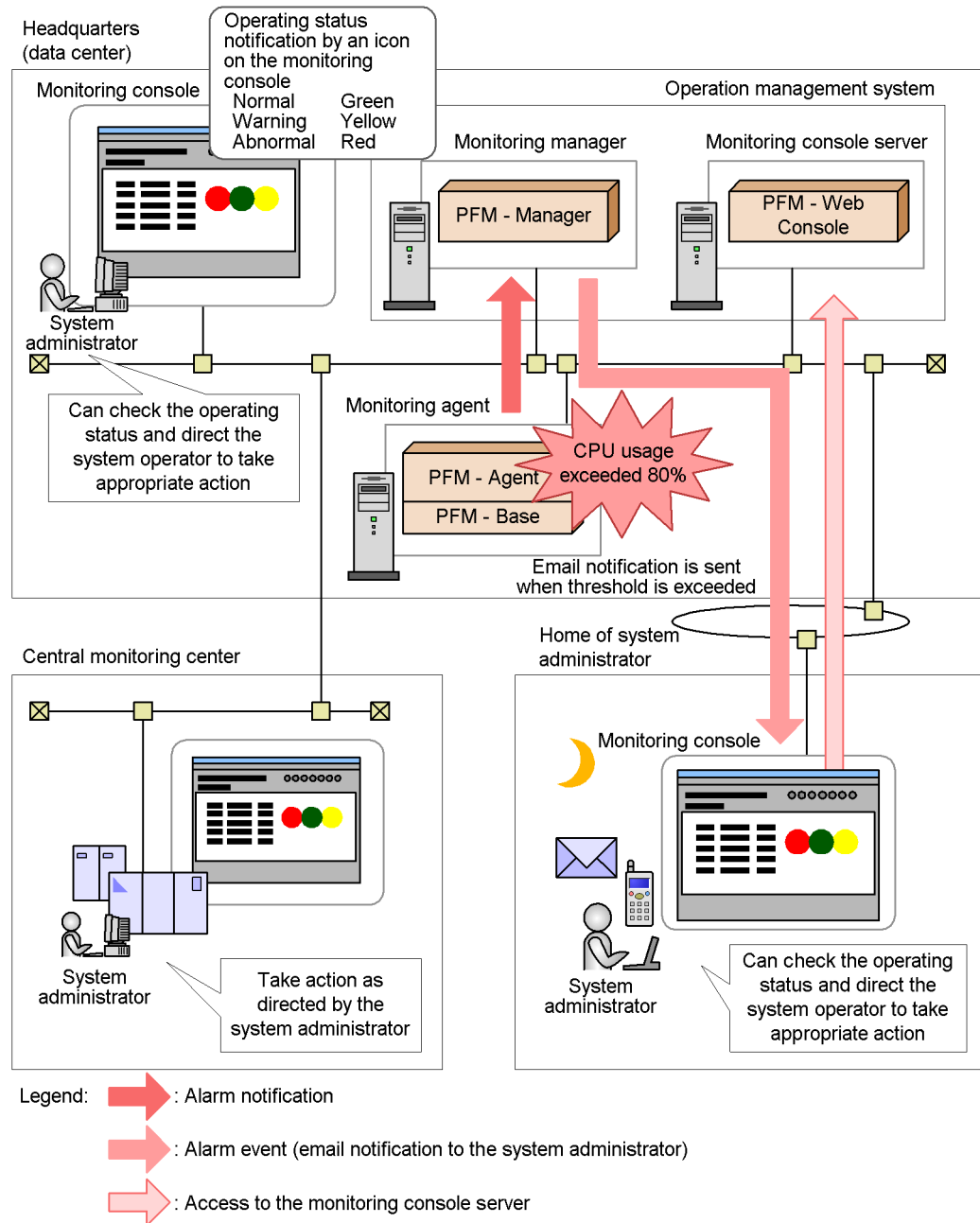
(b) Outputting performance data in an easy-to-understand format

The performance data collected by Performance Management can be displayed in a Web browser in a graphical format. Performance data presented in this format is called a *report*. By using easy-to-understand graphs and tables to display operating information of the systems being monitored, problems can be analyzed more easily.

The following figure shows examples of reports.

Figure 1-15: Examples of reports
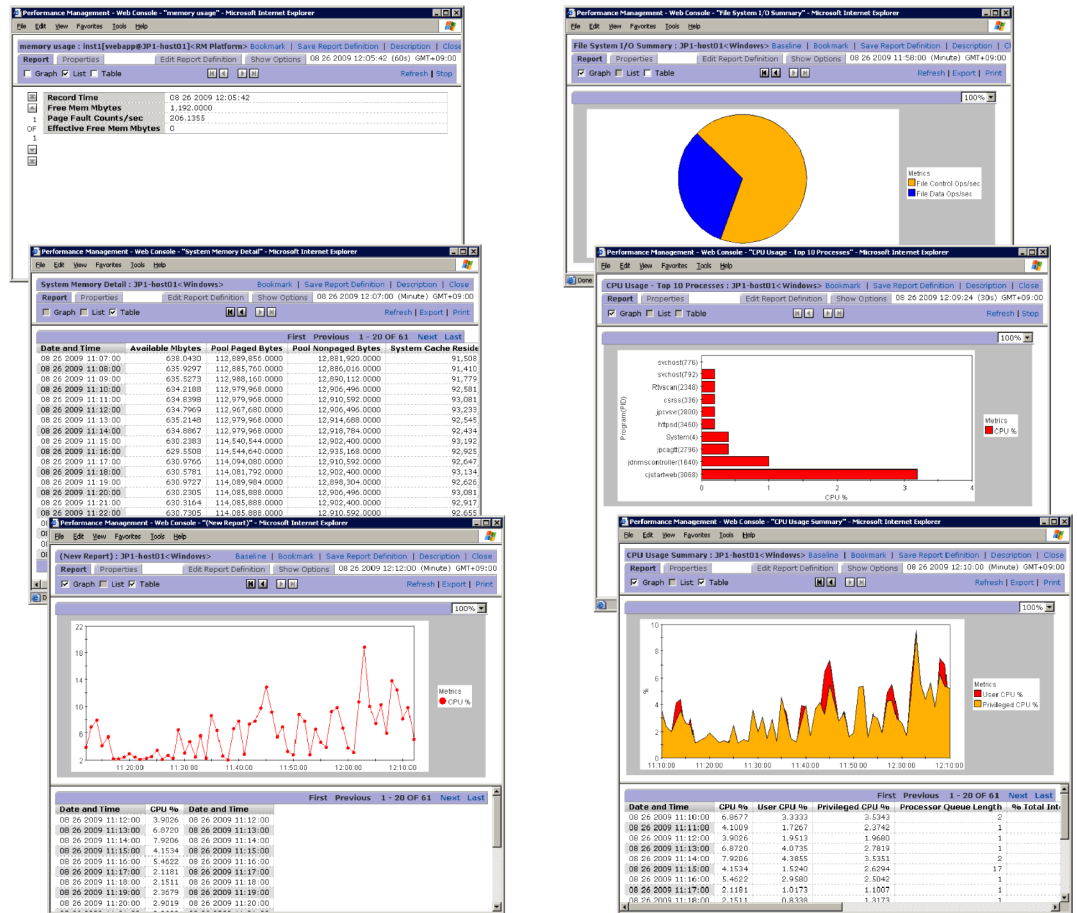
For details on reports, see the chapter that explains the creation of reports for operation analysis in the *Job Management Partner 1/Performance Management User's Guide*.

(c) Displaying graphs of multiple reports in a tiling layout

For certain historical reports that are managed by bookmark, you can tile the graphs.

Tiling the graphs makes it easier to analyze the causes of problems, as well as manage the network and OS resources. A display that shows graphs of multiple reports aligned horizontally and vertically is called a *tiling display*. The following figure shows examples of a tiling display.

Figure 1-16: Example of a tiling display
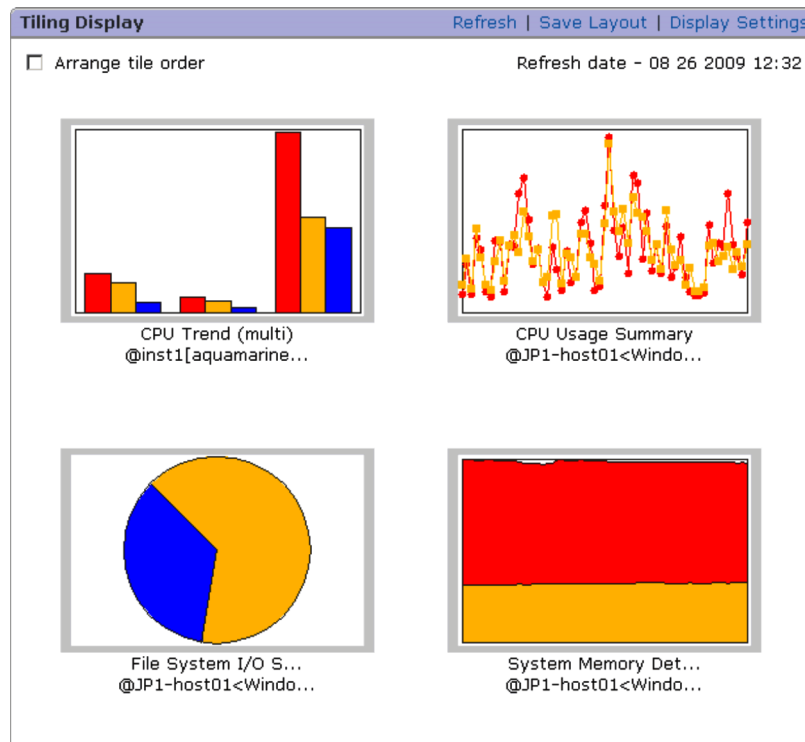
For details on tiling displays, see the chapter that explains the creation of reports for operation analysis in the *Job Management Partner 1/Performance Management User's Guide*.

(d) Superimposing multiple reports

Performance Management can display multiple reports in the same graph. By displaying past periodic data or data obtained during stable operation of the system as reference data (a *baseline*) in the graph together with performance data, the operating status of the overall system can be determined in a comprehensive manner. A report that combines multiple historical reports with a baseline in the same graph is called a *combination report*. The following figure shows examples of combination reports.

Figure 1-17: Examples of combination reports
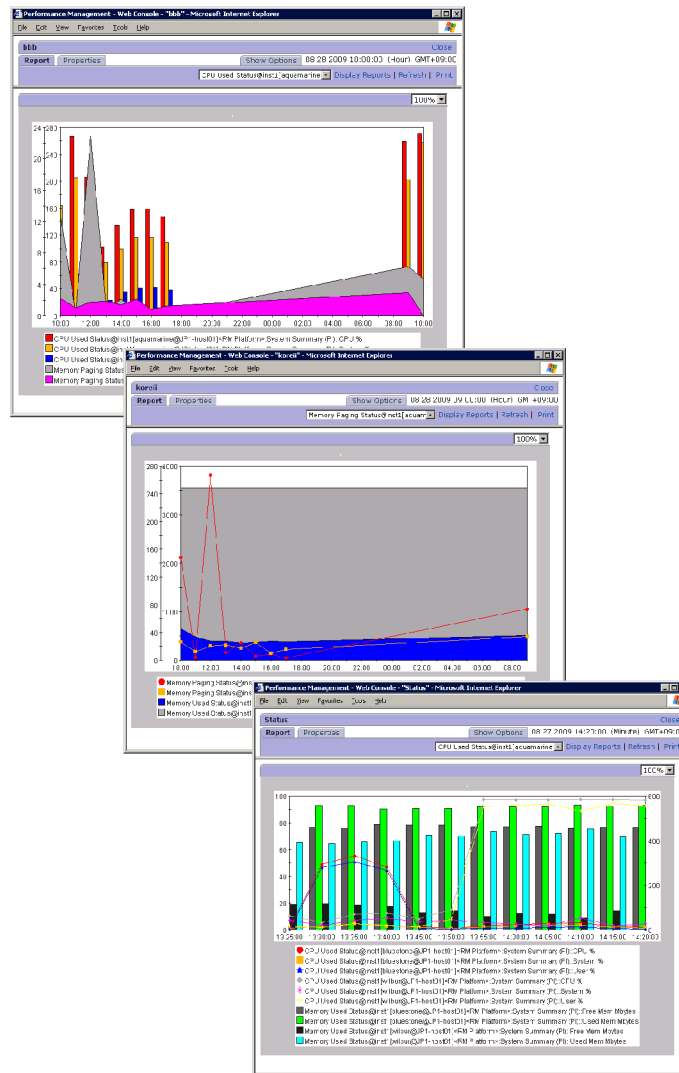
Restrictions apply to the display of multiple reports on the same graph, depending on whether the report you intend to display is a normal or combination report.

■ For normal reports:

You can display reports for multiple agents if they refer to the same records in a historical report.

■ For combination reports:

You can display multiple reports in a single graph, regardless of the agent used or the type of record in the report. However, only historical reports can be used as the basis for a combination report. Combination reports allow you to:

- Display reports that include different fields from the same record.

- Display reports that gather related records from different agent types.

- Display reports that gather different records from different agent types.

- Display a report together with a baseline.

For details on how to display combination reports, see the chapter that explains the creation of reports for operation analysis in the *Job Management Partner 1/ Performance Management User's Guide*.

(e) Viewing historical performance data

Version 2.0 of the Store database (Store 2.0) allows you to view historical performance data by importing backed-up monitoring data. Because the imported data is kept past the pre-set retention period, you can view historical data at any point in time. The following figure shows an example of viewing historical data.

Figure 1-18: Example of viewing historical data
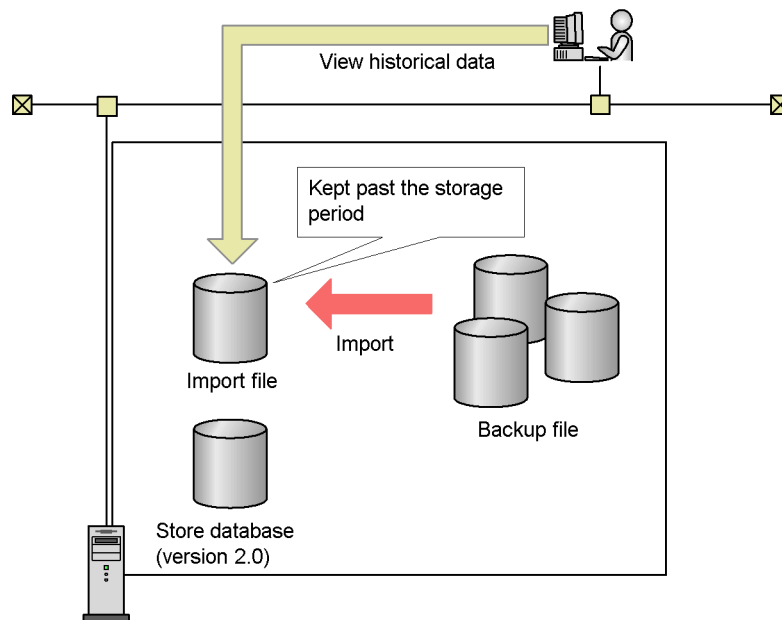
For details on importing backed-up data, see *4.2.6(2) Viewing historical operation*

monitoring data.

(f) Management commands tailored to real-world situations are provided

In order to carry out integrated management of multiple servers in large-scale systems, management commands can be processed automatically or in batches.

Operating commands can be used to perform tasks such as managing performance data and Performance Management services automatically or as a batch process, which enables more efficient system operation. Examples of commands provided by Performance Management are as follows:

- Commands to batch configure warning alarms
- Commands to output operation monitoring reports
- Commands to back up and restore the collected operation monitoring data
- Commands to start and stop Performance Management

The following figure shows an example of the system administrator checking weekly operation reports output using Performance Management commands and sent as email by a job management system.

Figure 1-19: Example of the system administrator checking operations
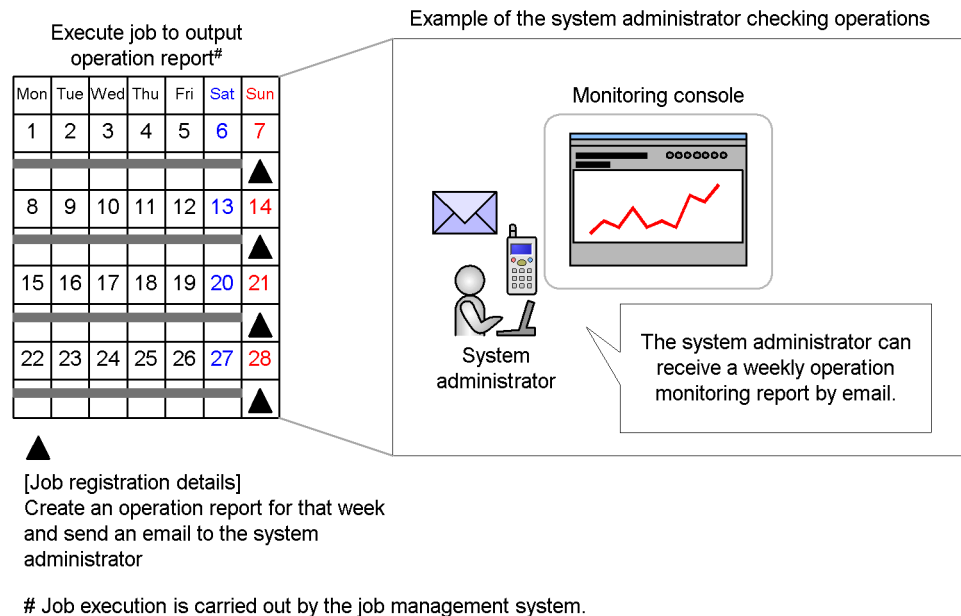
For details on commands, see the chapter about commands in the manual *Job*

Management Partner 1/Performance Management Reference.

1.2.4 Select a suitable monitoring method

In Performance Management, you can select different monitoring methods, depending on the severity level of the monitored server, as well as the cost and time available for designing and configuring the operation monitoring system.

Agent monitoring

> In order to monitor the server's operating status, you must install the agent on the server to be monitored. This enables you to use a number of monitoring options to monitor a server's operating status.

> *Figure 1-20:* Agent monitoring
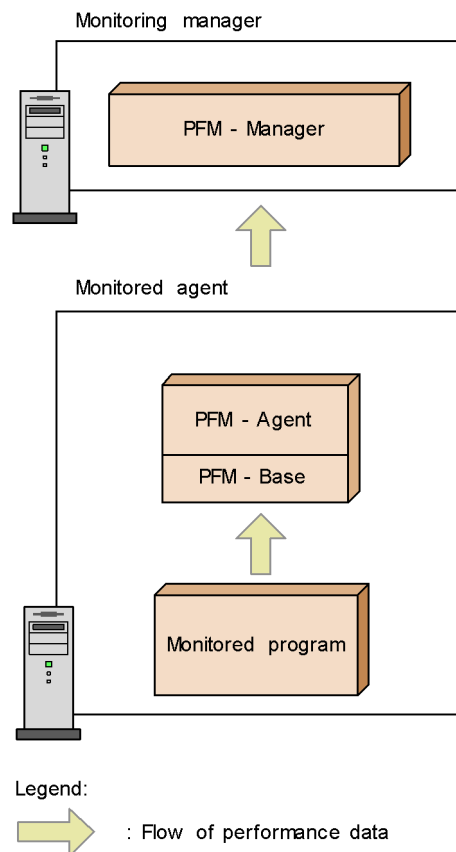
Remote monitoring

> Remote monitoring means that you monitor the operating status of servers from another host. There is no need to install the agent on the monitored server. This is

particularly useful when you want to monitor the operations of a system that is already running. Although fewer items are monitored than in agent monitoring, you can use a single PFM - RM to collect and manage performance data from multiple monitoring targets.

PFM - RM features two concepts: *remote agent* and *group agent*. Remote agent configures monitoring conditions with an interface similar to traditional agent monitoring. Group agent monitors performance data consolidated from various remote agents.

Figure 1-21: Remote monitoring
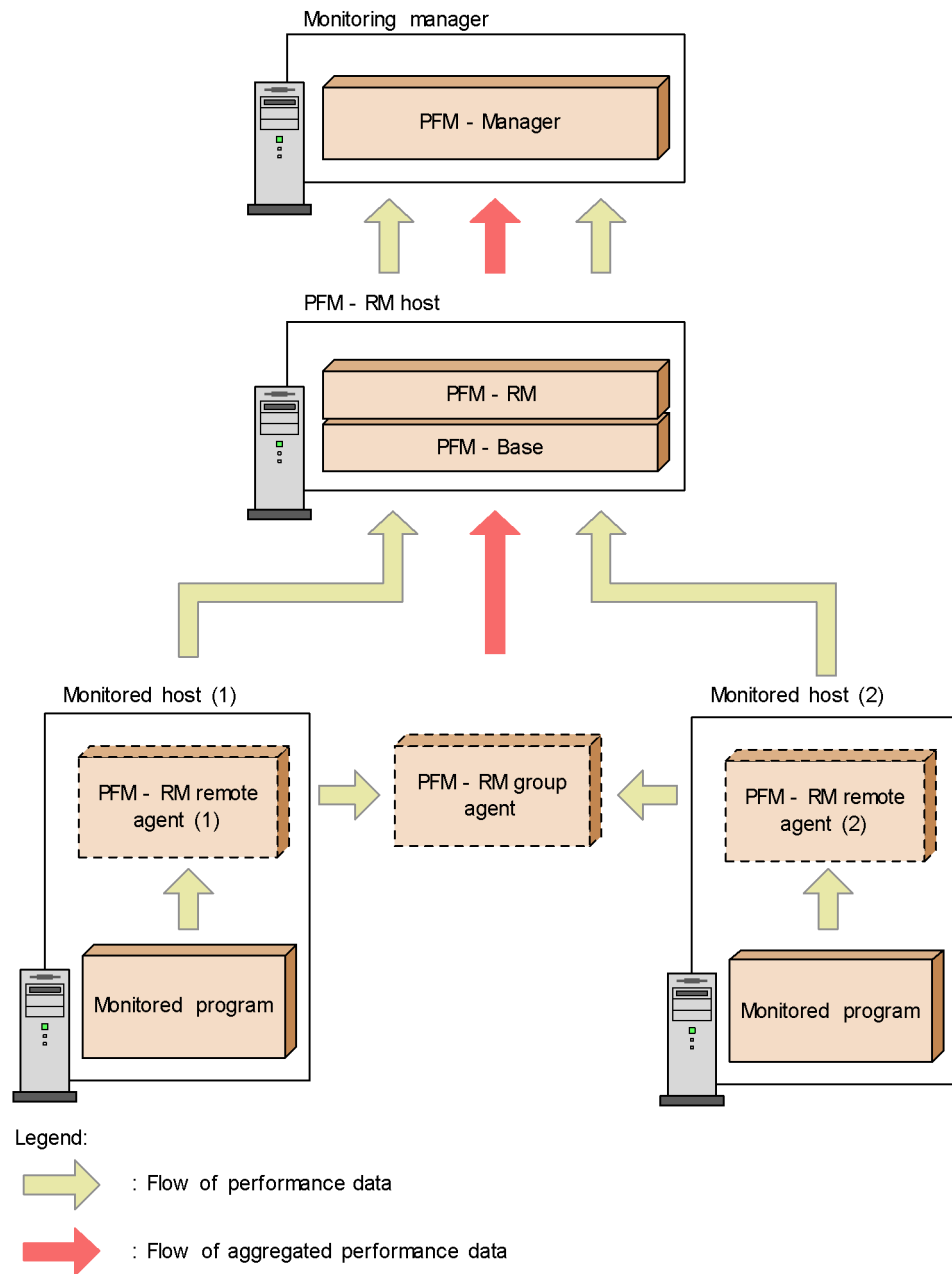
You can combine multiple monitoring methods. To achieve optimal operation

monitoring, two monitoring forms are provided for each monitored server: detailed monitoring by using PFM - Agent, or quick monitoring by using PFM - RM.

Chapter

2. Using Performance Management

This chapter describes using Performance Management to monitor the performance of business systems, using the fictitious Company H as an example. Company H operates an Internet marketing system.

The chapter describes the flow of operations from building the Performance Management system to operating it. Please note that it is important to understand this flow of Performance Management basic operations.

2.1 Background of performance monitoring
2.2 Designing and configuring a performance monitoring system
2.3 Operating a performance monitoring system

2.1 Background of performance monitoring

Example:

Company H has a large-scale internal system because the company is a retailer with branches across the country. Company H introduced a new Internet marketing system in order to start selling products online. Online sales were good and the number of users of the system continues to increase.

Company H's Information Systems department used Performance Management to configure a performance monitoring system in order to track the operation status of the Internet marketing system and to resolve any issues before they became problems.

The Internet marketing system runs on a Windows server.

The following figure gives an overview of Company H's entire system.

Figure 2-1: Background of performance monitoring (using the Internet marketing system as an example)
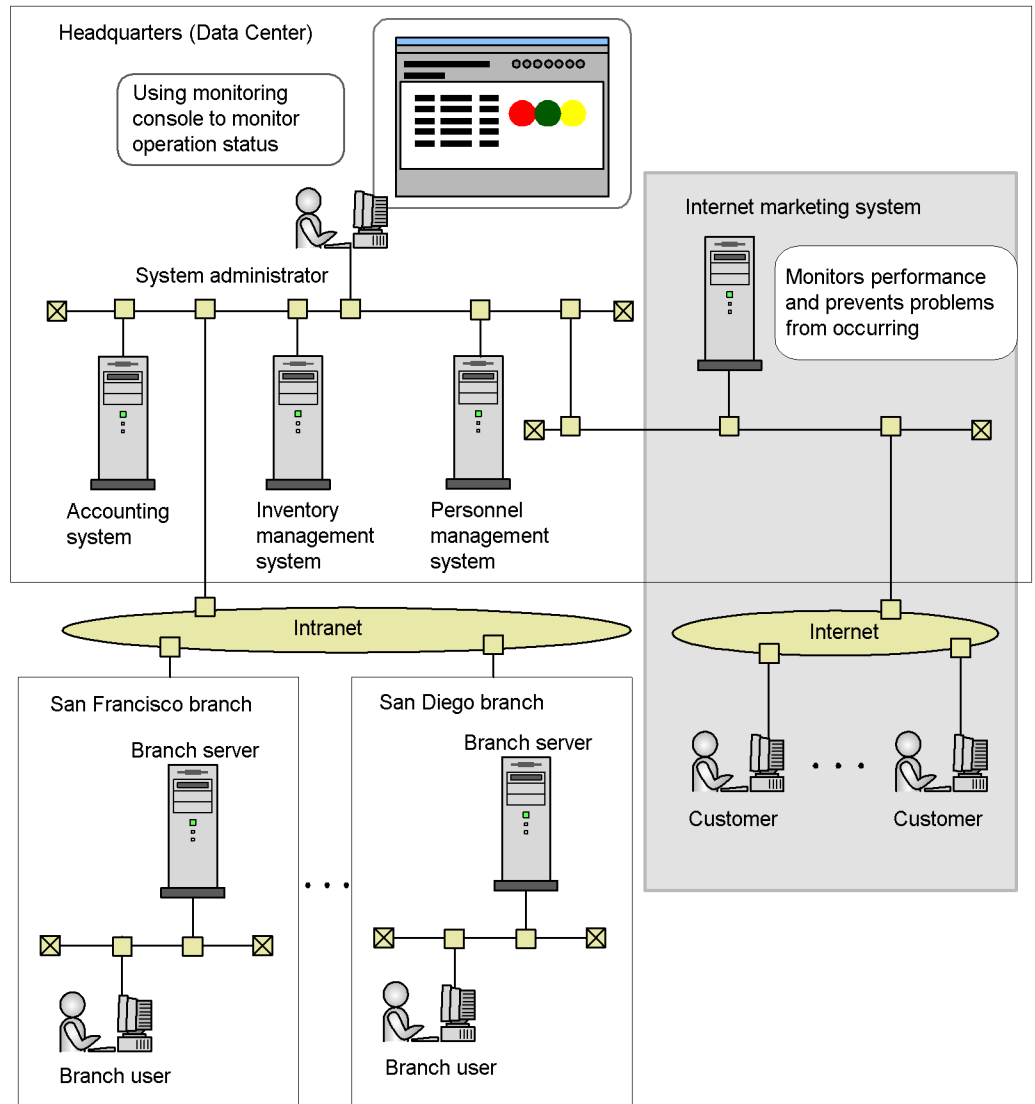
The descriptions that follow assume Company H's Internet marketing system for operation monitoring.

2.2 Designing and configuring a performance monitoring system

To optimally monitor performance, you must decide what type of operation status and problems on the system need to be monitored and what performance data needs to be collected. In addition, you must determine the type of system configuration on which Performance Management will operate.

2.2.1 Examining which items are to be monitored

Company H's Information Systems Department examined which items related to the operation status were to be monitored on the Windows server, for the Internet marketing system. They decided on the following requirements to monitor operations and the necessary items to fulfill those requirements:

Table 2-1: Examples of examining which items are to be monitored

Purpose	Item to be monitored	Name of record for the item (for PFM - Agent for Platform (Windows))
To monitor the CPU usage and understand trends in CPU loads	CPU usage	System Overview (PI)
To monitor free physical memory, and have the system administrator take action if the amount becomes low	Free space in physical memory	System Overview (PI)

Performance Management collects performance data in units called *records*. After deciding which items to monitor, check the names of the corresponding Performance Management records.

As a result of the examination, Company H decided to use monitoring templates for PFM - Agent for Platform (Windows). These templates fulfill all of the requirements for monitoring the Internet marketing system's performance. Performance Management provides pre-defined reports and alarms, called *monitoring templates*, for frequently monitored items. By using these solution sets, you can easily prepare to monitor a system's operating status without using complex definitions.

For details on items to consider when examining items to be monitored, see *3.4.3 Examining items to be monitored*.

For details on the monitoring templates that are provided and which records to collect, see the chapters about monitoring templates and records in each PFM - Agent manual.

2.2.2 Examining the system configuration

This section will examine the system configuration for operating performance monitoring.

After examining the system scale and future expandability, Company H places the monitoring manager, monitoring console server, and monitoring agent on different hosts.

The following figure shows the system configuration of Company H's system.

Figure 2-2: Company H's Performance Management system configuration
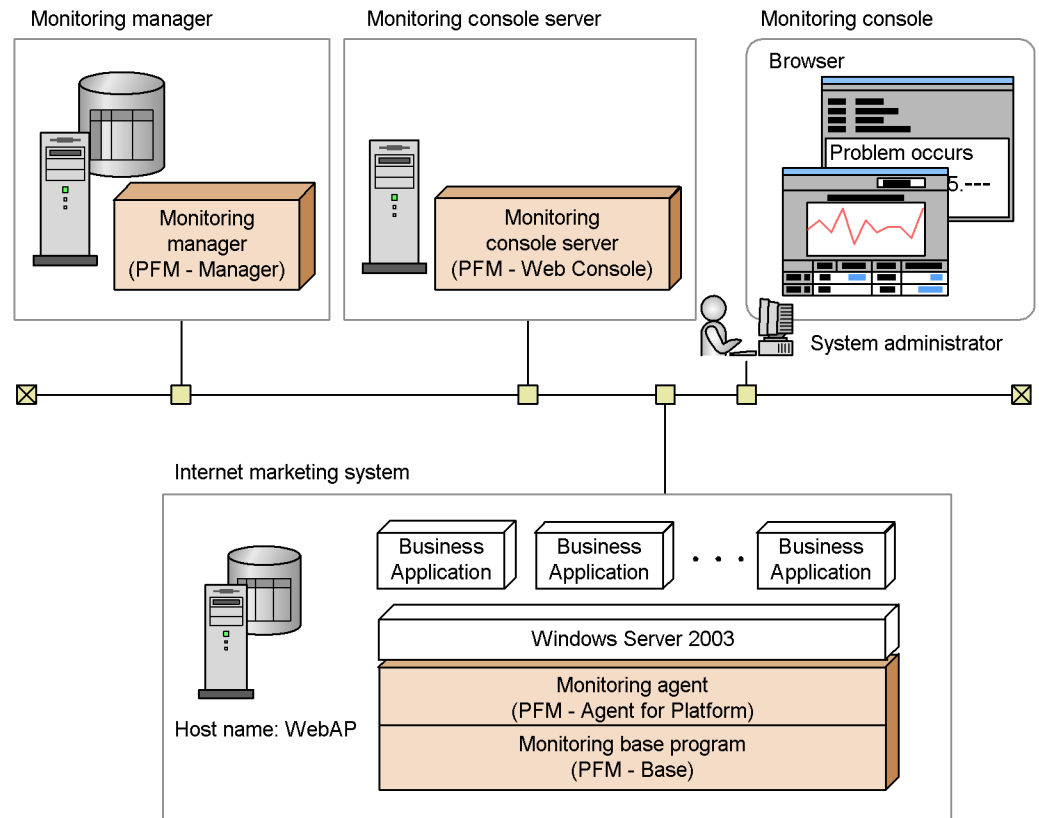
Company H installs PFM - Manager on the host with the monitoring manager, which carries out integrated management of the Internet marketing system's operation status, and installs PFM - Web Console on the host with the monitoring console, which checks the operation status.

Company H installs PFM - Agent for Platform (Windows), which is the monitoring agent that collects Windows' performance data, and PFM - Base, which is the monitoring base, on the server with the Internet marketing system.

For details on how to install and set up Performance Management programs, see *5. Installation and Setup (in Windows)* or see the chapters describing installation and

setup in each PFM - Agent manual.

2.3 Operating a performance monitoring system

After deciding on the items to be monitored and designing the performance monitoring system, use Performance Management to monitor the operation.

This section describes an example of basic performance monitoring, using the following general procedure:

1. Start the Performance Management service.

2. Use a browser to log on to PFM - Web Console.

3. Create a user account.

4. Create agent levels for monitoring.

5. Display a report.

6. Use an alarm to monitor.

7. Display an event.

2.3.1 Starting the Performance Management services

After installing the Performance Management programs, start each program's service.

For Windows, no operations are necessary because the service is configured by default to start automatically when the OS starts. For UNIX, a startup script must be configured.

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

When the services for Performance Management programs are started, performance data[#] collection might start by default depending on PFM - Agent.

#

For details on performance data collected by default, see the chapters describing records in each PFM - Agent manual.

2.3.2 Using the browser to log on to PFM - Web Console

To log on to PFM - Web Console from the monitoring console browser:

1. Enter the following URL in the monitoring console browser:

```
http://PFM - Web Console-installation-server-name:20358/
PFMWebConsole/login.do
```

The Login window is displayed.

Figure 2-3: The Login window

2. Enter **User Name** and **Password**.

    After installation, a user account with the user name ADMINISTRATOR and no password is configured by default.

    Enter the information as shown below:

    User Name: ADMINISTRATOR

    Password: None

    Note

    > For security reasons, configure a password for the ADMINISTRATOR account before starting to use Performance Management. For details on how to manage user accounts, see the chapter that describes management of user accounts in the *Job Management Partner 1/Performance Management User's Guide*.

3. Click the **Login** button.

    Log on to PFM - Web Console. The Main window is displayed.

Figure 2-4: The Main window
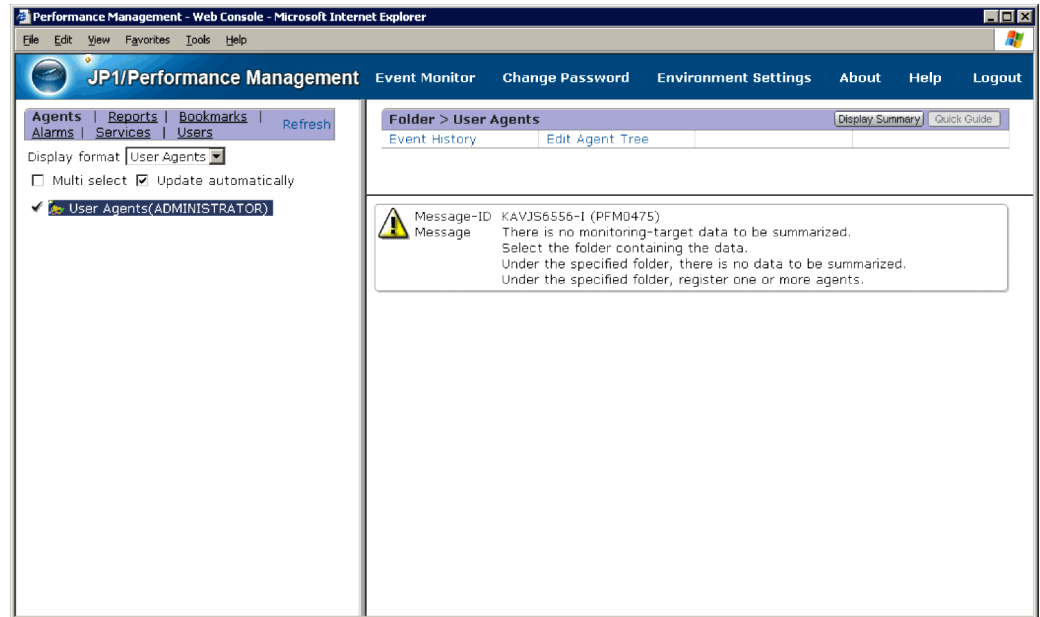
The following describes procedures using the window of PFM - Web Console, including creating a user account and creating agent levels for monitoring.

2.3.3 Creating a user account

In Performance Management, an account called *Performance Management user* is used for managing the Performance Management system, and an account called *JP1 user* is used for managing with JP1/Base.

The following procedures describe how to create a Performance Management user account in order to manage the Performance Management system.

There are two types of permissions for Performance Management accounts:

- Administrator user permissions
- General user permissions

The available functions for each PFM - Web Console window depend on the permission. For details on the permissions, see the chapter that describes management of user accounts in the *Job Management Partner 1/Performance Management User's Guide*.

A Performance Management user account is created from the Users window in PFM - Web Console. The following example shows how to create a Performance Management user account called INT_ADMIN with administrator user permissions.

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To create a user account with the administrator user permissions:

1. In the navigation frame of the Main window, select the **Users** tab.

   The Users window is displayed.

2. In the method frame of the Users window, select the **New User** method.

   The New User window is displayed.

3. For **User Name**, enter INT_ADMIN.

4. Set any password for **Password** and **Confirm password**.

   Note

   Hitachi recommends that Performance Management passwords contain six or more characters and include alphanumeric characters and symbols. A confirmation message is displayed if you enter a password that is made up of only alphabetic characters, numeric characters, or five characters or fewer. A message is also displayed when you enter a password that is the same as your user name.

5. In **Select permission level**, select **Management user**.

   The following figure shows an example of the New User window:

   Figure 2-5: Example of the New User window

6. Click the **OK** button.

   The created user account is added in the Performance Management user level in the navigation frame.

7. Click **Logout** in the menu bar frame to temporarily log off of PFM - Web Console.

8. Log on using the INT_ADMIN user account.

2.3.4 Creating agent levels for monitoring

In Performance Management, agents being monitored can be managed and monitored by level. There are two types of agent levels:

- Monitoring by the agent levels grouped together for each product

  This monitors by agent level grouped by folders for each PFM - Agent product.

- Monitoring by agent level created for each logon user

  This monitors by agent level created specifically for each logon user. For example, folders can be created in units of the system configuration or organization, and monitoring agents can be grouped for each.

Agent management and monitoring are performed from the Agents window in PFM - Web Console.

(1) Creating folders

The following example shows folders created for each branch office.

To create a folder:

1. In the navigation frame of the main window, select the Agents tab.

   The Agents window is displayed.

2. In the method frame, select the **Edit Agent Tree** method.

   The Edit Agent Tree window is displayed.

   User Agents (*name-of-user-to-log-in*) is displayed in the information frame.

3. Select **User Agents** (*name-of-user-to-log-in*) and click the **New Folder** button.

   The Edit Agent Tree > New Folder window is displayed.

4. Enter `Headquarters (Data Center)` for **New folder name**.

   An example is indicated in the following figure:

Figure 2-6: Example of the Edit Agent Tree > New Folder window
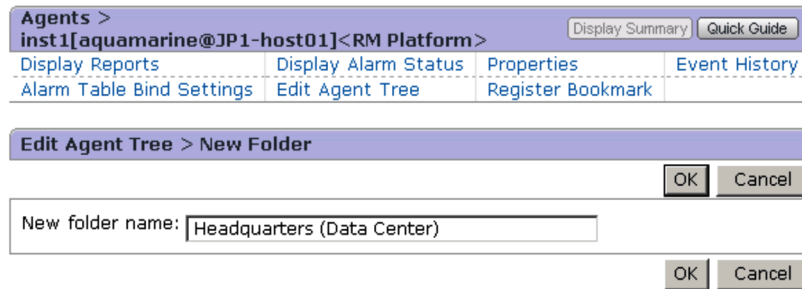
5.   Click the **OK** button.

      The **Headquarters (Data Center)** folder is created under **User Agents**
      (*name-of-user-to-log-in*) in the information frame.

6.   Using the same operations as steps 3 to 5, create the following folders:

      • San Francisco Branch

      • San Diego Branch

7.   Select the **Headquarters (Data Center)** folder created in steps 3 to 5 and click
      the **New Folder** button.

8.   Enter `Internet Marketing System` for **New folder name** and click the **OK**
      button.

      Similar levels are created as in the following figure.

      Figure 2-7: Example of creating agent levels
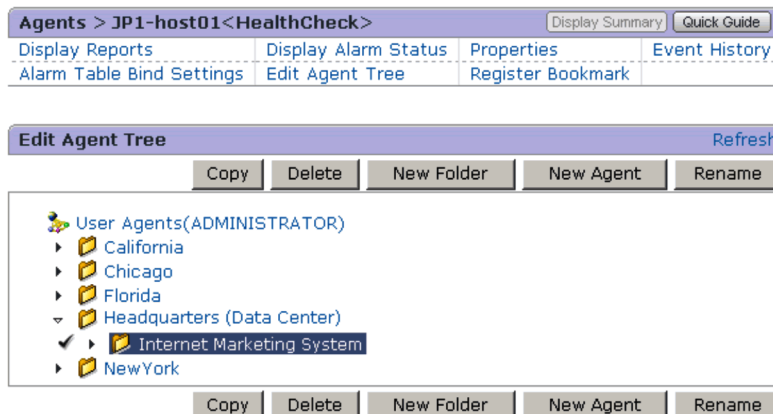
(2) Placing PFM - Agent

After creating folders, place agents (PFM - Agent product) in each folder. The

following procedure describes how to place an agent in the Internet Marketing System folder.

To place PFM - Agent:

1. In the method frame of the Agents window, select the **Edit Agent Tree** method.

   The Edit Agent Tree window is displayed.

   User Agents (*name-of-user-to-log-in*) is displayed in the information frame.

2. From the agent level, select the Internet Marketing System folder, and click the **New Agent** button.

   The Edit Agent Tree > New Agent window is displayed.

   Figure 2-8: Example of the Edit Agent Tree > New Agent window
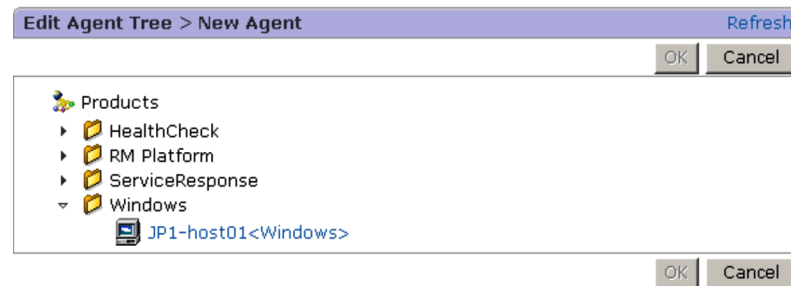
   In the Edit Agent Tree > New Agent window, the PFM - Agents connected to the PFM - Manager is displayed. The name of each PFM - Agent is displayed as a service ID. For example, if the product name display function is active and *WebAP* is the host name for the PFM - Agent for Platform (Windows) agent, **WebAP<Windows>** is displayed.

   For details on service IDs, see *B.1 Naming rules for services*. For details on the product name display function, see *4.1.2 Displaying and specifying services*.

3. From the agent level, select the PFM - Agent to add to the folder.

   Multiple PFM - Agents can also be selected. A selected PFM - Agent is marked with a check mark.

4. Click the **OK** button.

   The PFM - Agent is added under the Internet Marketing System folder as shown in the following figure:

Figure 2-9: Example of displaying agent levels
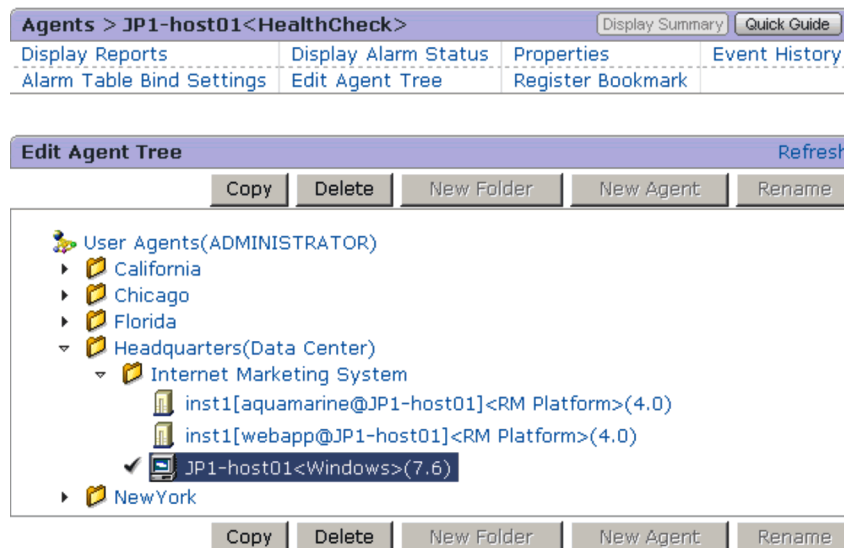
Reference note:

> The same PFM - Agent can be placed in multiple folders. It can also be placed directly under User Agents (*name-of-user-to-log-in*) without being placed in a folder.

2.3.5 Displaying reports

Two types of reports are created with the Performance Management system. One type is for the reports prepared by the system as monitoring templates, and the other type is for user-defined reports.

The following example shows how to display the Memory Available Trend(Multi-Agent) report for a monitoring template of the PFM - Agent for Platform (Windows). The Memory Available Trend (Multi-Agent) report can display the memory usage during the past month for multiple systems. This report is displayed as a line graph.

Reports are displayed mainly from the Agents window.

To display a report:

1. From the navigation frame in the Agents window, select an agent.

    The selected agent is marked with a check mark.

2. From the method frame, select **Display Reports**.

    The Display Reports > Select Report window is displayed. The reports in the

monitoring templates for PFM - Agent for Platform (Windows) are displayed in tree form in the information frame.

Figure 2-10: Example of the Display Reports > Select Report window
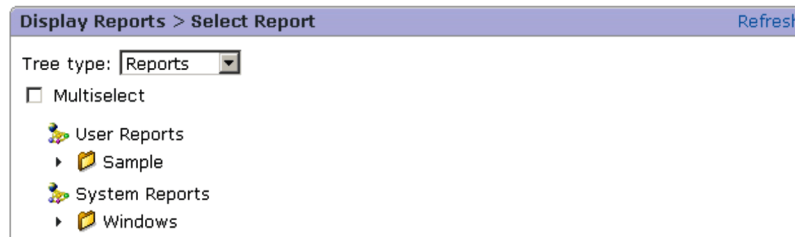
3. From the **Windows** folder, choose the **Operating System** folder, and then the **Monthly Trend** folder, and then click the **Memory Available Trend (Multi-Agent)** report.

The report is displayed in a separate window.

Figure 2-11: A Reports window
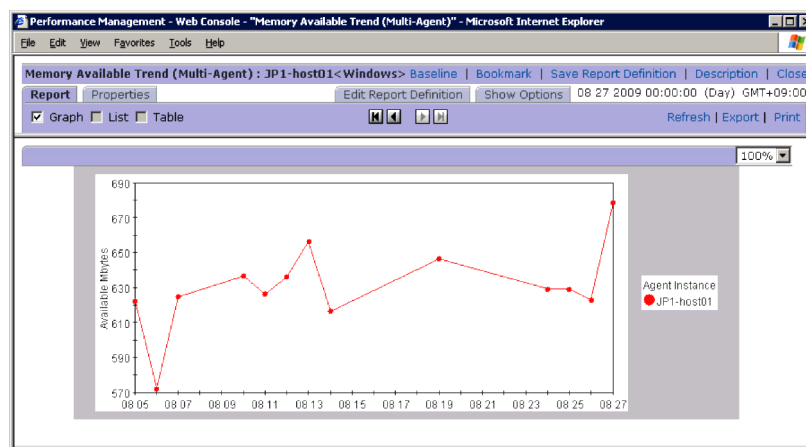
For example, checking the reports shows that free memory continues to decrease. In this situation, you can output the report in CSV or HTML format and forward it to the application developers. The developers can then use this information to investigate and resolve the problem.

By using Performance Management to manage the performance, issues can be resolved before they have an effect on business and problems including system failures, can be prevented.

In this example, the monitoring template definition was used as is, however, depending on your needs, you can customize the monitoring template definition or you can define

a specific report instead of using a monitoring template.

For details on how to define reports, see the chapter that explains the creation of reports for operation analysis in the *Job Management Partner 1/Performance Management User's Guide*.

Reference note: Types of reports and what should be done to display reports

There are two types of reports. *Historical reports* indicate the past agent status and *real-time reports* indicate the current agent status. To display a historical report, the system must be configured so that agent performance data is recorded in the Store database. This is not necessary for a real-time report.

For details on the relationship between reports and the Store database and how to use performance data from Performance Management, see the chapter that describes management of operation monitoring data in the *Job Management Partner 1/Performance Management User's Guide*.

2.3.6 Using an alarm for monitoring

If an alarm is set, when the performance data reaches a pre-defined threshold, the lamp icon (alarm icon) in the monitoring window blinks red and the system administrator can be notified of a problem (alarm). You can output a log (action log) when an alarm is triggered. For details on action logs, see *G. Outputting Action Log Data*.

When binding alarm tables, you can choose to bind a single alarm table for each agent, or bind multiple alarm tables for each agent. For details on binding alarm tables, see *3.4.4 Examining the binding method of an alarm table*.

When binding occurs, Performance Management begins monitoring based on the alarm definition.

(1) Copying and customizing an alarm table

The following example shows an alarm table called **Web Server Monitoring** being created by customizing the monitoring template of the alarm table **PFM Windows Solution Alarms 8.00** from the PFM - Agent for Platform (Windows).

To copy and customize an alarm table:

1. In the navigation frame of the Main window, select the **Alarms** tab.

    The Alarms window is displayed.

2. In the navigation frame of the Alarms window, expand the subgroup in the Windows folder.

    The alarm tables in the monitoring template for the PFM - Agent for Platform (Windows) are displayed.

3. From the alarm level in the navigation frame, select **PFM Windows Solution Alarms 8.00**.

A check mark appears next to **PFM Windows Solution Alarms 8.00**.

4. In the method frame, select the **Copy** method.

   The Copy > Input Name[Alarm Table] window is displayed.

5. Enter `Application Server Monitoring` for **New alarm table name**.

   Enter the data as shown below:

   Figure 2-12: Example of entering the data in the Copy > Input Name[Alarm Table] window

   Note

   > You can assign any name to an alarm table but you cannot specify `PFM` as the first three letters.

6. Click the **OK** button.

   The newly created alarm table is added to the navigation frame of the Alarms window.

7. Select the **CPU Usage** alarm in order to edit the CPU monitoring conditions in the new alarm table.

   Display and select the subgroup below the new alarm table.

Figure 2-13: Selecting an alarm from the alarm level
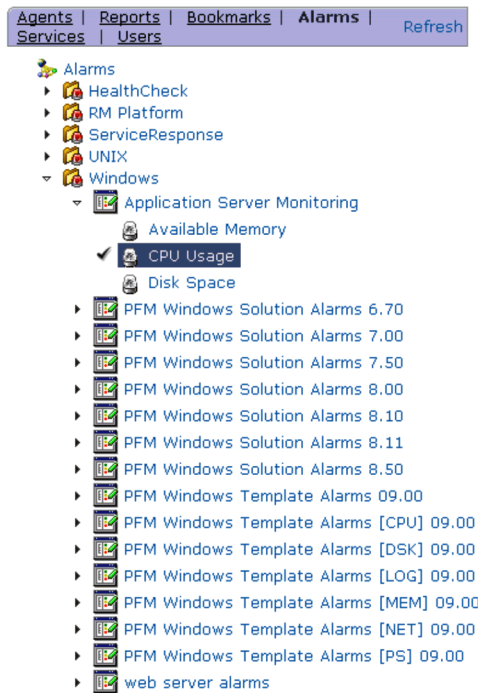
A check mark appears next to the **CPU Usage** alarm. When the **CPU Usage** alarm is selected, the **Edit** method is displayed in the method frame.

8.   Select the **Edit** method in the method frame.

The Edit > Main Information window is displayed.

9.   Change the value of the item below in **Advanced settings**.

Change **Damping** to the following:

- 4 occurrence(s) during 5 Interval(s)

Figure 2-14: Example of the Edit > Main Information window

Figure 2-15: Example of modifying the data in the Edit > Main Information window

Figure 2-16: Example of modifying the data in the Edit > Action window

Figure 2-17: Example of modifying the data in the Edit > Action Definition window

Damping

Damping refers to the setting that controls whether a notification is sent out after a threshold is reached a certain number of times within a certain interval. By setting this item, the system can be operated so that a notification is sent only when the CPU has a heavy, continuous load.

10. Click the **Finish** button.

Next, perform binding.

(2) Binding the alarm table and the agent

The newly created alarm table and the agent must be bound (linked). When binding

occurs, Performance Management begins monitoring based on the alarm definition. This subsection describes how to bind a single alarm table to an agent.

To bind the alarm table and the agent:

1. In the navigation frame of the Main window, select the **Agents** tab.

   The Agents window is displayed.

2. In the navigation frame of the Agents window, select the agent that will bind the newly created alarm table.

   The selected agent is marked with a check mark.

3. In the method frame, select **Bind Alarm Table**.

   The Bind Alarm Table to Agents window is displayed.

   The alarm table level is displayed in the information frame.

   Figure 2-18: Bind Alarm Table window
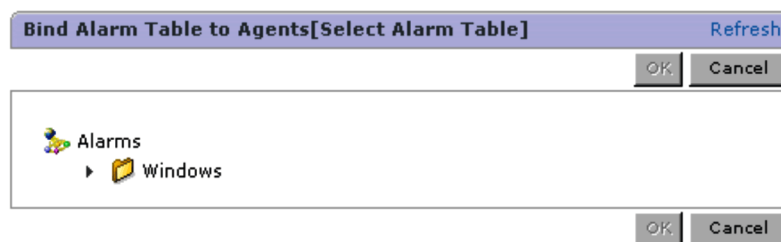
4. From the alarm table level, select the alarm table to bind.

   The selected alarm table is marked with a check mark.

5. Click the **OK** button.

   When the alarm table is bound to the agent, monitoring based on the alarm table begins.

6. In the method frame, select the **Display Alarm Status** method.

   The Alarm Status window is displayed.

Figure 2-19: Example of the Alarm Status window
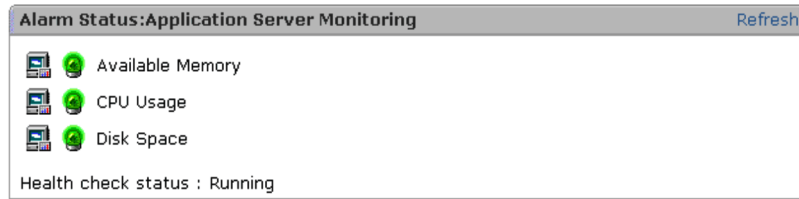
A defined alarm is displayed in the bound alarm table.

When an alarm occurs, the alarm icon is displayed in a color that indicates the alarm status. When you click the alarm icon, the Properties window for the alarm is displayed, where you can check details of the alarm definition.

You can also check the operating status of the monitoring agent based on the message displayed for **Health check status**.

This subsection showed how to copy, customize, and use a solution set's alarm tables. However, the solution set's alarm tables can also be used as is. You can also define a specific alarm table instead of using a solution set. For details on how to define an alarm table, see the chapter that describes operation monitoring with alarms in the *Job Management Partner 1/Performance Management User's Guide.*

2.3.7 Displaying events

Events that occur in the Performance Management system can be checked from the PFM - Console Event Monitor window. The following three types of event information can be checked from the Event Monitor window:

- Agent events:

  Events that indicate changes in the agent status

- Alarm events:

  Events that indicate alarms being triggered by agents

- Health check events:

  Events that indicate changes in the health check status of the monitoring agent

Reference note:

> You can also check the health check status in the Event Monitor window.

The Event Monitor window displays a list of events in the order they occurred. You can check the agent status, alarm status, and health check status based on the icon color and appearance.

To display events:

1. In the menu bar frame of the main window, select the **Event Monitor** menu.

   The Event Monitor window is displayed.

   Figure 2-20: Example of the Event Monitor window
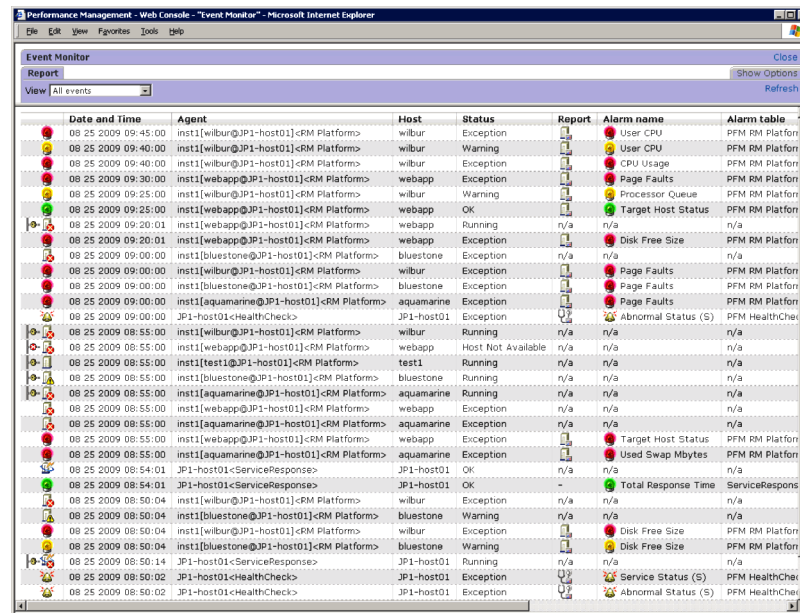
This following table explains the meaning of the main icons that are displayed in the Event Monitor window. For details on the items displayed on the window, see the chapter that describes displaying events in the *Job Management Partner 1/Performance Management User's Guide* or see the description about the Event Monitor window in the manual *Job Management Partner 1/Performance Management Reference*.

Table 2-2: Details of event monitors

Icon		Description
Agent event icon		The monitoring agent is operating normally or has not been started yet (status unknown).
		The monitoring agent is in warning status.
		The monitoring agent is in abnormal status.

Icon		Description
Alarm event icon	(green)	A normal alarm event has occurred.
	(yellow)	A warning alarm event has occurred.
	(red)	An abnormal alarm event has occurred.
		This icon indicates that an alarm notification is sent each time the alarm is triggered. This icon is displayed only when **Always notify** is selected as the alarm definition.
Health check event icon		Not Supported[#]
		Running[#]
		Incomplete[#]
		Stopped[#]
		Unconfirmed[#]
		Host Not Available[#]
Report icon	Icons including	There is a linked report.
	n/a or -	There is not a linked report.

#

> For details on configuring the health check function, see the chapter that describes detecting problems in Performance Management in the *Job Management Partner 1/Performance Management User's Guide*.

> A report icon is displayed in the **Report** column when a report is linked to an

alarm event. Click the icon to display the linked report.

For example, if a report is checked because an alarm occurred, you can analyze from the report that the CPU usage has increased due to a particular program.

Figure 2-21: A Reports window
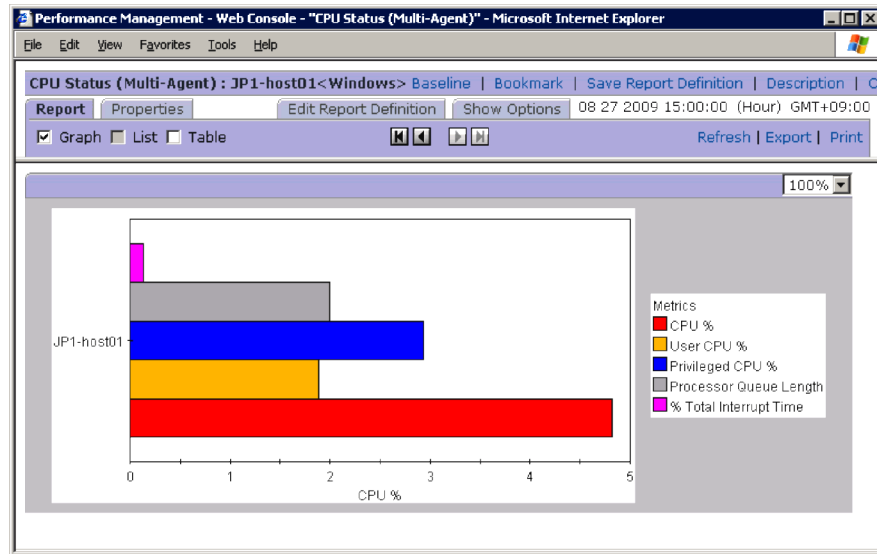
Reference note: What should be done to display a report from the event monitor

Reports linked to alarms cannot be viewed from the event monitor unless the report is defined as such when the alarm is defined. For details on how to edit alarms and link reports, see the chapter that describes operation monitoring with alarms in the *Job Management Partner 1/Performance Management User's Guide*.

Chapter

3. Design of Operation Monitoring Systems that Use Performance Management

This chapter describes the design of operation monitoring systems that use Performance Management.

3.1 Range supported by Performance Management
3.2 Performance Management: from design to operation
3.3 Designing the configuration of an operation monitoring system
3.4 Designing the operation of an operation monitoring system

3.1 Range supported by Performance Management

This section describes the general process flow for when the system administrator configures an operation monitoring system, and the range supported by Performance Management. Before designing an operation monitoring system, confirm what you can do with the operation monitoring system life cycle and Performance Management.

For details on the functions Performance Management provides, see *4. Performance Management Functions*.

Figure 3-1: General process flow for creating the operation monitoring system and the range supported by Performance Management
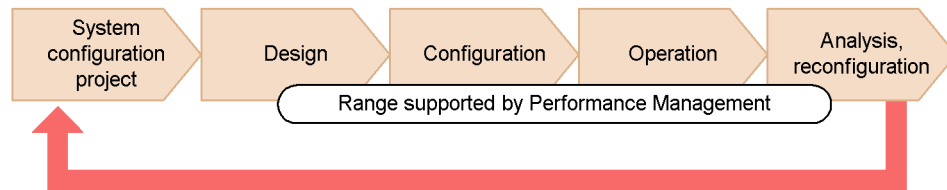
System configuration project phase

> In this phase, a project is proposed to configure an operation monitoring system. Factors that should be examined include the purpose of the system, cost and structure of the architecture, and schedule.
>
> If Performance Management is used, monitoring agent products that meet the system requirements need to be selected.

Design phase

> In this phase, the staff designs the foundation of the operation monitoring system.
>
> The first things to be designed include the system configuration and network configuration. If other systems, such as an integrated operations management system (JP1/IM) and a network monitoring system (NNM), are linked to the operation monitoring system, the format in which they are linked should be examined.
>
> Next, other factors are designed, including the selection of items to be monitored, measures to be taken when the system is in a critical state, the display format of monitoring reports, and rules for the operation monitoring system.
>
> Functionality provided by Performance Management:
>
> > • Calculation methods for system estimates including the amount of memory used

- Monitoring templates and data models (records) for selecting items to monitor
- Linking with other systems (including JP1/IM and NNM)
- Other functions

Configuration phase

In this phase, the operation monitoring system is implemented and the various settings are configured according to what was examined during the design phase. After Performance Management is installed, parameters and the environment are configured.

Functionality provided by Performance Management:

- GUI (the window of PFM - Web Console) to configure the various settings
- Commands to configure the various settings

Operation phase

In this phase, the operation monitoring system is in operation. Operation monitoring data is collected, appropriate measures are taken when the system reaches a critical state, and reports are examined to analyze the performance status.

Functionality provided by Performance Management:

- Performance data collection and management
- Alarm notification when performance data reaches a certain threshold
- Performance data reporting
- Performance data output
- Backing up and restoring performance data and importing backup data by using operation commands
- Other functions

Analysis and reconfiguration phase

In this phase, problems in the system being monitored are analyzed based on the performance data acquired from the operation monitoring system and any necessary reconfiguration is performed.

Functionality provided by Performance Management

- Output performance data as a file

  Files output by Performance Management can be used by operation analysis products (PFM - Analysis).

3.2 Performance Management: from design to operation

The following figure shows the process flow of Performance Management from design to operation.

Figure 3-2: Process flow from design to operation

Design

Configuration design of the operation monitoring system [3.3]
・Examine system configuration.
・Examine cluster configuration.
・Examine network configuration.

Operational design of the operation monitoring system [3.4]
・Examine user management method.
・Examine monitoring agent management method.
・Examine items to monitor.
・Examine data management method.
・Examining Store database storage methods
・Examine measures to take when the operation monitoring system itself malfunctions.
・Estimate the required hard drive space for Performance Management.

Configuration

Install and set up
・For Windows [chapter 5]
・For UNIX [chapter 6]

Create a user account.
manual# [chapter 2]

Create agent levels for monitoring.
manual# [chapter 3]

If monitoring template is not being used

If monitoring template is being used

Define reports.
manual# [chapter 5]

Customize and use

Use as is

Define alarms.
manual# [chapter 6]

Manage operation monitoring data.
manual# [chapter 4]

Operation

Start monitoring operation. manual# [chapters 3, 6, 7]

Display reports. manual# [chapter 5]

Back up and restore. manual# [chapter 8]

Troubleshooting   manual# [chapter 14]

Legend:　#: *Job Management Partner 1/Performance Management User's Guide*
[   ] : See the indicated step.

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3.3 Designing the configuration of an operation monitoring system

The following factors must be examined for the configuration of an operation monitoring system that uses Performance Management:

- System configuration
- Cluster configuration
- Network configuration

The following explains each of the above factors.

3.3.1 Examining system configurations

The system administrator should examine what system configuration is to be used when constructing the operation monitoring system. Performance Management can be used to configure the system by adding required PFM - Agents depending on the items being monitored, or by installing PFM - RM, if remote monitoring is necessary. This enables the system to be flexibly expanded to match the operating conditions, such as an increase in the number of users on the system or an increase in the load on the system.

The following describes an example of a system configuration for Performance Management.

Point:

You can configure an operation monitoring system by installing all of the Performance Management programs on one monitoring agent host.

(1) Example of a system configuration for monitoring the operation of databases and business applications

If the operation of databases and business applications is to be monitored, a system can be configured so that one monitoring manager can perform integrated management of multiple monitoring agents. In order to monitor multiple systems with a single monitoring host, you can also add PFM - RM to the system configuration.

 The following figure shows an example.

Figure 3-3: Example of a system configuration for monitoring the operation of databases and business applications
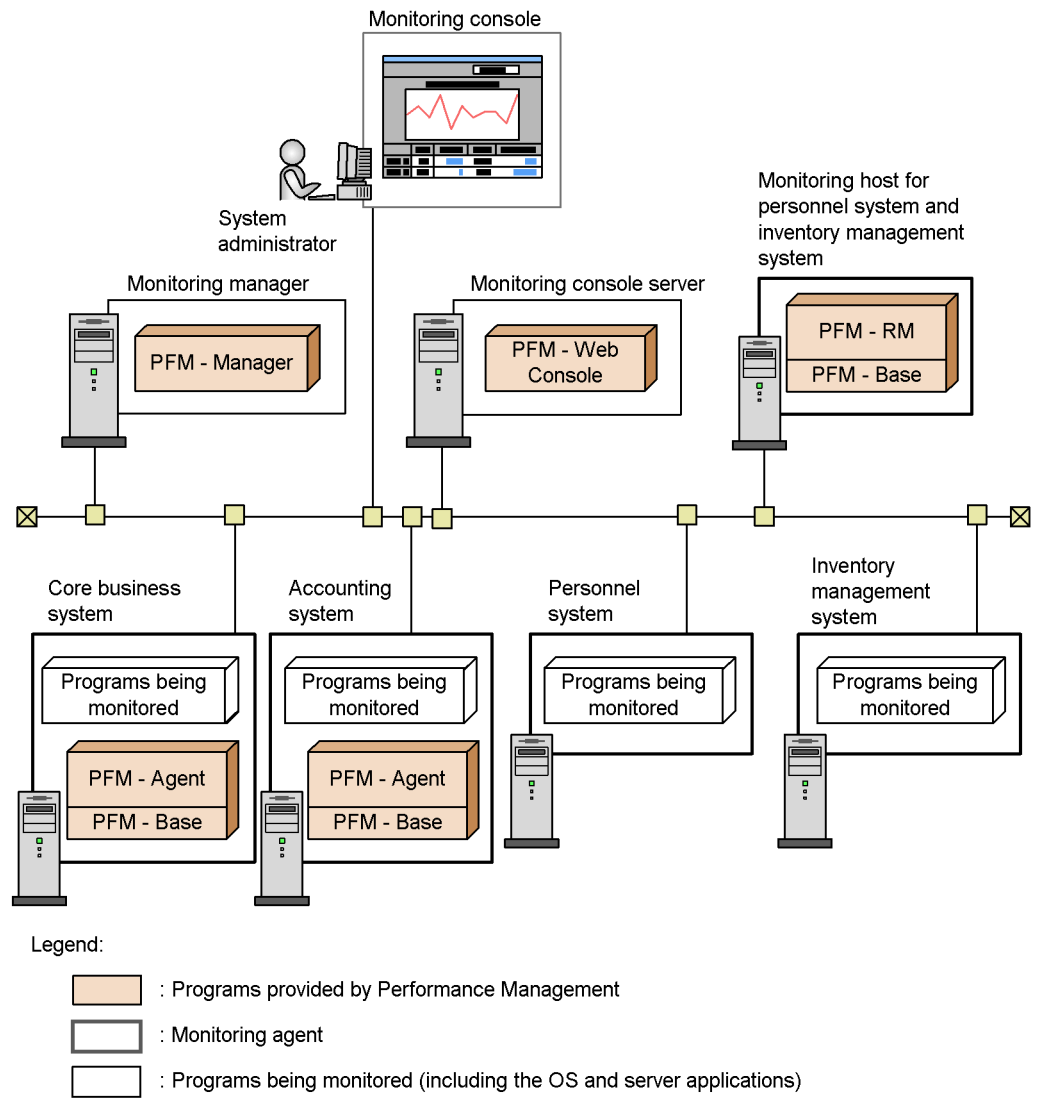
(2) Example of a system configuration for monitoring the operation for an entire company

Operation status for an entire company can be monitored by checking the performance data collected with Performance Management from an integrated management product (JP1/IM) and a network management product (NNM). The following figure shows an example of the configuration of a large-scale system that uses NNM for network

management and JP1/Base and JP1/IM for integrated management.

Figure 3-4: Example of the configuration of a large-scale system
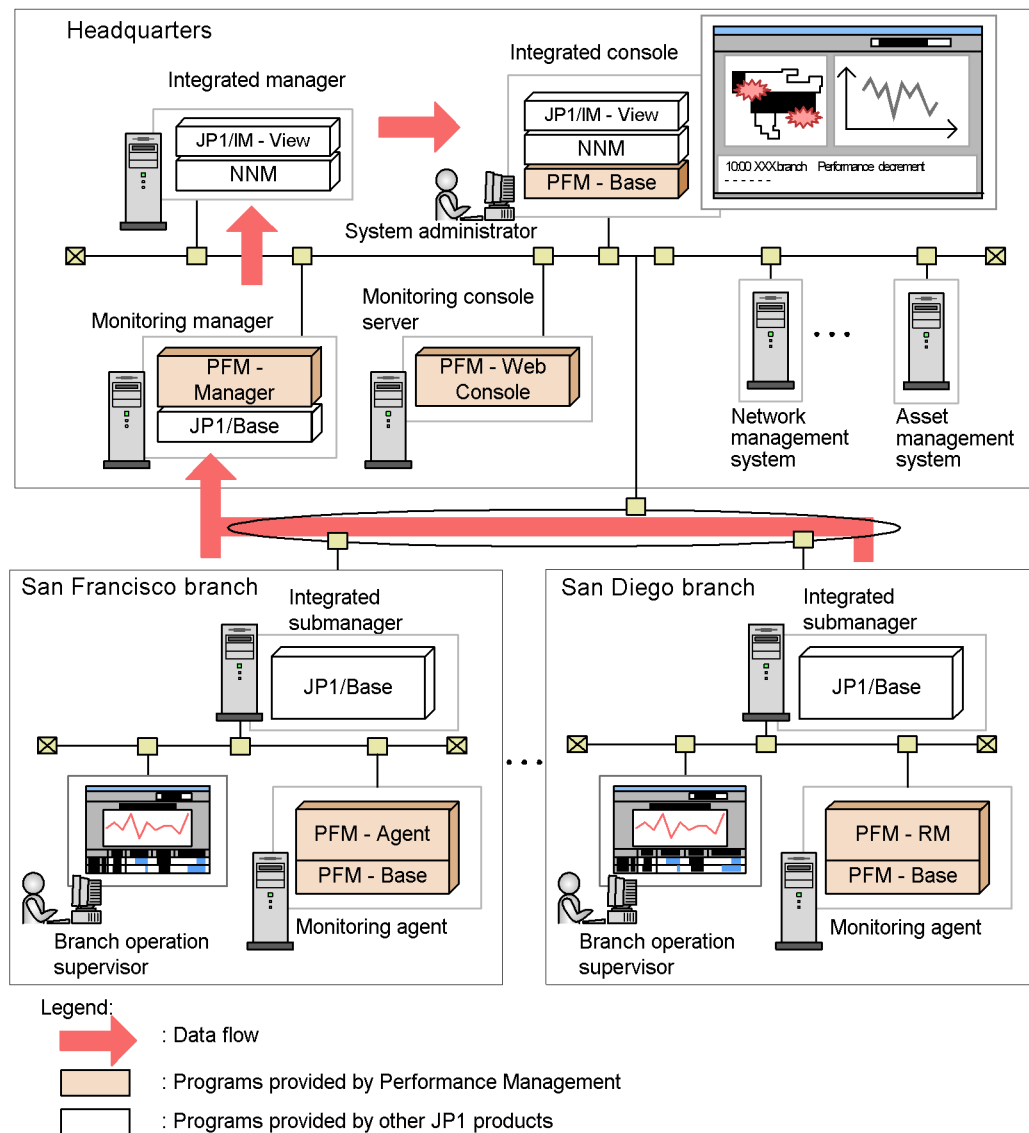
Point:

When using Performance Management, the number of PFM - Agents, PFM - RM, and PFM - Web Consoles that can be connected to one PFM - Manager differs depending on the system configuration. Consider this number and then design an

appropriate system configuration. For details on the limits, see *A. Limits*. In addition, whether there is enough functionality, such as the amount of memory of the computers in use, must also be considered. For details on system estimates for Performance Management, see *C. System Estimates*.

3.3.2 Examining cluster configurations

The system administrator should examine whether to employ a cluster configuration in order to increase the system's capacity. For Performance Management, the supported cluster configuration differs depending on the product. The supported cluster configurations are indicated as follows:

Cluster configuration of PFM - Manager

> PFM - Manager supports clusters in the active-standby configuration. Either the executing node or the standby node can be executed. If the executing node malfunctions, a failover occurs and the standby node takes over the processing.

Cluster configuration of PFM - Web Console

> PFM - Web Console supports clusters in the active-standby configuration. Either the executing node or the standby node can be executed. If the executing node malfunctions, a failover occurs and the standby node takes over the processing.

Cluster configuration of PFM - Base

> PFM - Base supports clusters in the active-active configuration. If PFM - Agent or PFM - RM is installed on a PFM - Base host, you can configure the cluster environment so that PFM - Base can be used together with that installed PFM - Agent or PFM - RM.

Cluster configuration of PFM - Agent

> The cluster configuration for PFM - Agent differs depending on the programs being monitored. For example, because PFM - Agent for Oracle, which monitors an Oracle database, supports the active-standby configuration, if the executing node malfunctions, a failover occurs and the standby node takes over the processing. On the other hand, PFM - Agent for Platform, which monitors the OS server, can operate in a cluster environment but PFM - Agent for Platform itself cannot fail over.

Cluster configuration for PFM - RM

> The cluster configuration for PFM - RM differs depending on the programs being monitored. For example, because PFM - RM for Platform, which monitors the OS on the server, supports the active-standby configuration, if the executing node malfunctions, a failover occurs and the standby node takes over the processing.

For details on clusters for PFM - Manager and PFM - Web Console, see the chapter that describes the cluster system configuration and operation in the *Job Management*

Partner 1/Performance Management User's Guide. For details on clusters for PFM - Agents or PFM - RM, see the chapters that describe operations on cluster systems in the appropriate PFM - Agent or PFM - RM manual.

Note

Performance Management does not support the following cluster configurations:

- A cluster configuration where Performance Management is operated by both a physical host and a logical host that share the same name

- A cluster configuration where the physical host is renamed when a failover occurs

To operate Performance Management in a cluster system, you must set different names for the physical host and the logical host on the node forming the cluster.

To run Performance Management on a cluster containing a physical host and logical host that share the same name, you must use the function for setting monitoring-host names in order to define a unique name for the physical host. For details on the function for setting monitoring-host names, for Windows see *5.3.3 Changing the host name in a Performance Management system*, and for UNIX see *6.3.3 Changing the host name in a Performance Management system*.

3.3.3 Examining system configurations

The system administrator should examine what network configuration to use when configuring an operation monitoring system.

Point:

With Performance Management, the performance data collected with the monitoring agent is stored in the monitoring agent itself. As a result, large amounts of performance data are not sent regularly over the network.

(1) *Example of using Performance Management in a LAN environment*

System configurations are supported for Performance Management where there is a host with multiple LAN boards and PFM - Manager, PFM - Web Console, PFM - Agent, or PFM - RM is installed on the host, and the host connects to multiple LANs.

The following figure shows an example of a system configuration that can switch IP routes.

Figure 3-5: Example of a system configuration that can switch IP routes
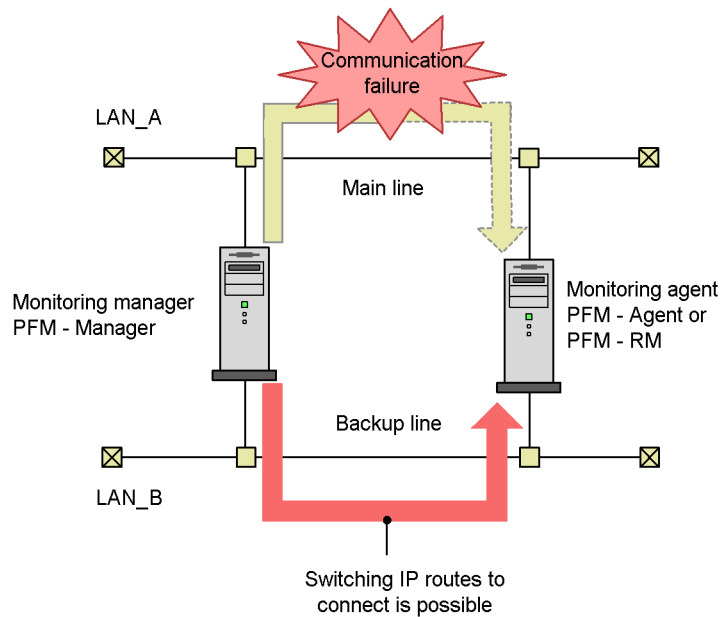
When operating in a network environment with multiple LANs, the IP addresses must be configured. For details on configuring IP addresses, see *5. Installation and Setup (in Windows)* or *6. Installation and Setup (in UNIX)*.

(2) Example of using Performance Management in a WAN environment

With Performance Management, PFM - Manager, PFM - Web Console, or PFM - Agent or PFM - RM can be placed behind a firewall.

Performance Management supports static NAT (basic NAT), which translates addresses one-to-one. In addition, the port number used by Performance Management can be changed to an arbitrary port number depending on the environment.

The following figure shows an example of using Performance Management in a WAN environment.

Figure 3-6: Example of using Performance Management in a WAN environment
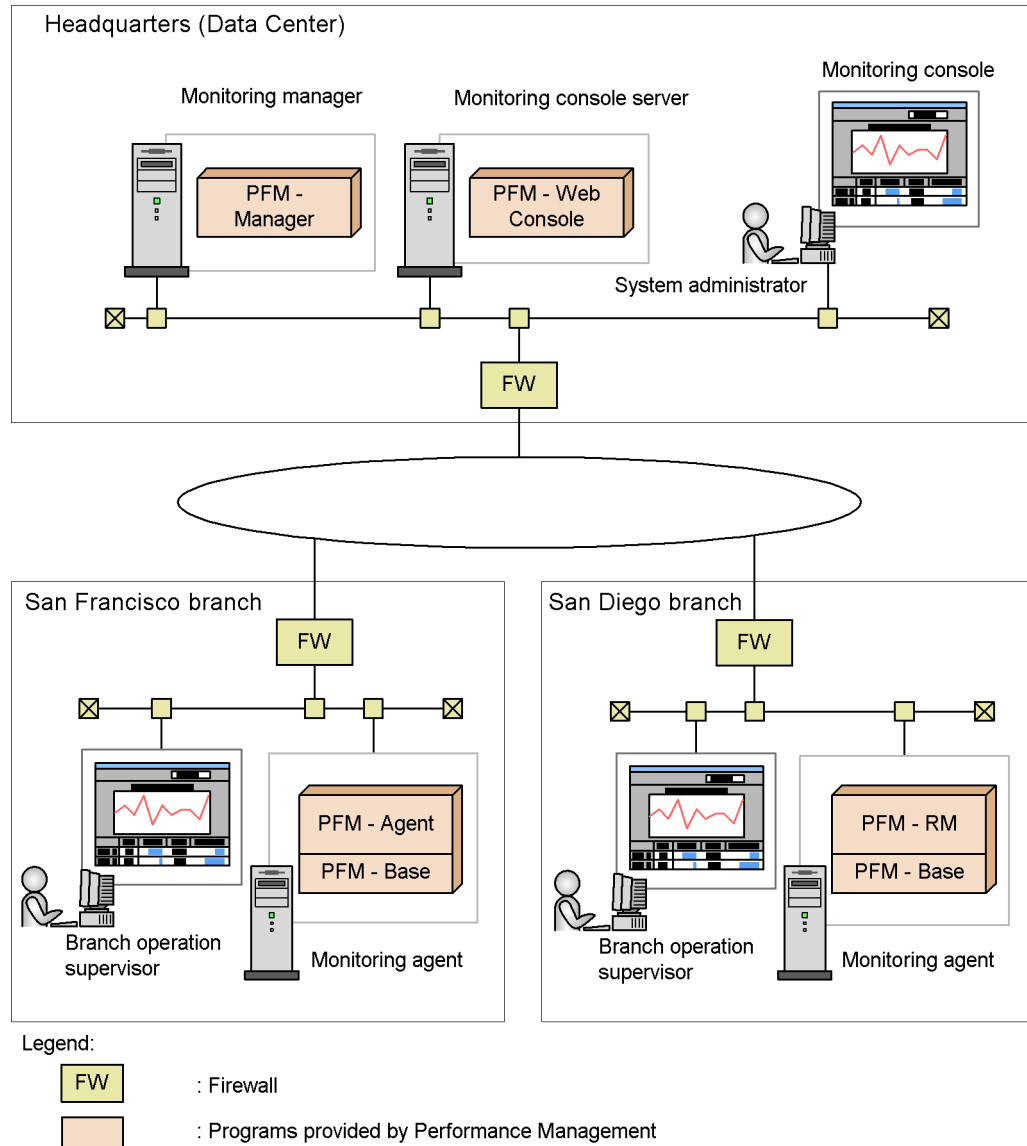
For details on port numbers, see the port number list in the manual *Job Management Partner 1/Performance Management Reference*.

(3) Example of using Performance Management in an environment that contains multiple hosts with the same name

Performance Management can be used in an environment that contains multiple hosts with the same name, for example, a host extending over multiple domains. To prevent host names from overlapping, create an *alias name* for each host.

With Performance Management, you can choose to use the actual host name or an alias name. For details on which host name is used, for Windows see *5.3.3 Changing the host name in a Performance Management system*, and for UNIX see *6.3.3 Changing the host name in a Performance Management system*.

Reference note:

Alias names cannot be used as the host names in the logical host environment.

3.4 Designing the operation of an operation monitoring system

The following factors must be examined for the operation of an operation monitoring system that uses Performance Management:

- User management method
- Monitoring agent management method
- Items to be monitored
- Examining the binding method of alarm tables
- Data management method
- Store database storage method
- Measures to take when the operation monitoring system itself malfunctions
- Estimate of the required hard drive space for Performance Management

The following explains each of the above factors.

3.4.1 Examining user management methods

Based on security policies, the system administrator should examine the user account management and operation methods. For user accounts, the setting of appropriate permissions corresponding to each worker's job duties needs to be considered.

(1) Examining user account management methods

With Performance Management, the user account management method can be selected. One method is to manage user accounts within the operation monitoring system, and the other is to perform integrated management of user accounts with an integrated management system (JP1/IM).

How to manage user accounts in an operation monitoring system (PFM authentication mode):

This method manages user accounts by using PFM - Manager. User accounts are created in the window of PFM - Web Console. This is the management method for standard user accounts in a Performance Management system.

How to perform integrated management by using an integrated management system (JP1 authentication mode):

This method performs integrated management of user accounts by using an integrated management system (JP1/IM). User accounts are created as JP1 users in JP1/Base, which is the authentication server of the integrated management system. If this method is used when authentication by JP1/Base has already been performed by using another JP1 product or when the linking function of

Performance Management is used to link with JP1/IM, multiple accounts do not need to be managed.

If the account is managed by a JP1 user, JP1/Base is required in the host on which PFM - Manager is installed. In a cluster environment, the logical host name for PFM - Manager and JP1/Base must be the same.

The following figure shows the differences between the user account management methods.

Figure 3-7: Differences between the user account management methods

How to manage user accounts in the operation monitoring system
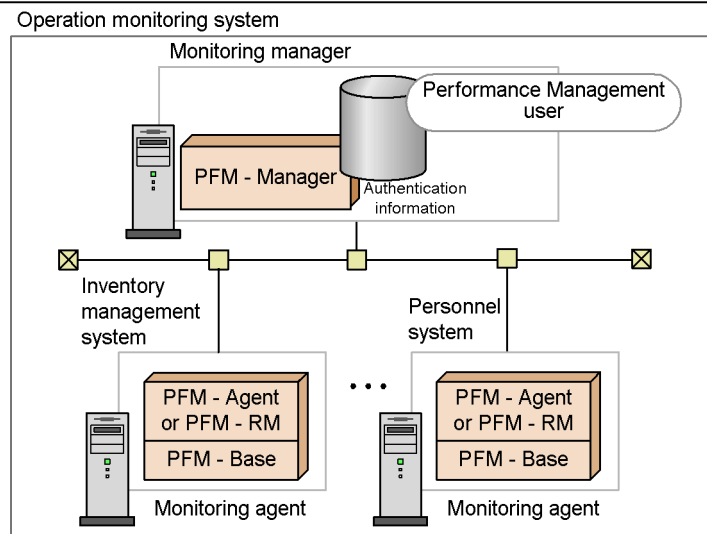
How to perform integrated management of other JP1 products and user accounts
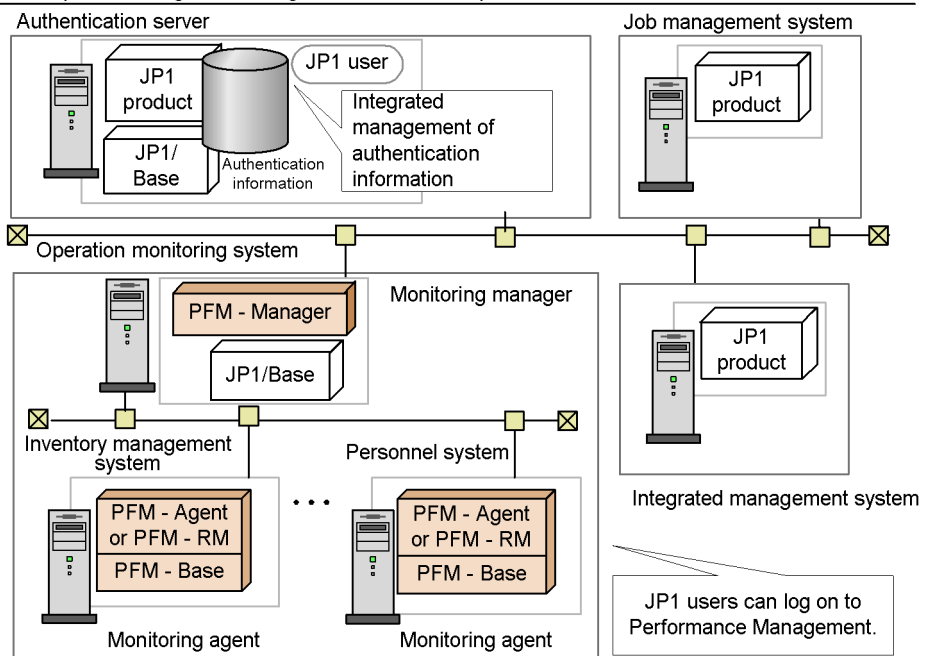
(2) Examining user account operation methods

For security reasons, the system administrator grants the appropriate permissions for user accounts. User account permissions that can be set are either *administrator user permissions* or *general user permissions*.

In addition, passwords are set for user accounts. To prevent spoofing, passwords that are difficult to guess must be set. To increase security, delete any unused accounts. Hitachi recommends that passwords be changed regularly.

3.4.2 Examining monitoring agent management methods

The system administrator should examine how to manage the monitoring agents within the operation monitoring system. With Performance Management, differences in programs being monitored are not considered and the following monitoring agent management methods are provided to allow monitoring agents to be managed:

■ Monitoring by the agent levels grouped together for each PFM - Agent or PFM - RM

This method monitors by the agent levels grouped together by folder for each PFM - Agent or PFM - RM product.

■ Monitoring by agent levels created for each logon user

This method monitors by agent levels created specifically for each logon user. Folders can be freely configured in units such as system configurations and organizations.

Create agent levels for monitoring to match the environment in which the operation monitoring system is operated. For details on managing monitoring agents, see the chapter that describes monitoring agents in the *Job Management Partner 1/ Performance Management User's Guide*.

Figure 3-8: Example of a configuration for monitoring programs by company organization and business

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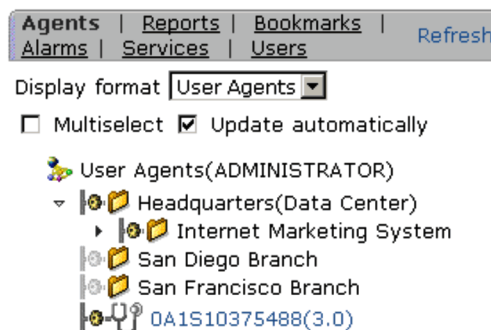
3.4.3 Examining items to be monitored

The purpose of an operation monitoring system is to detect in advance that the system has reached a critical state, and to prevent problems. As such, examining the items to be monitored in the system is of the utmost importance. When examining items to be monitored, you must decide which items to be monitored and how to monitor them. When selecting the items to be monitored, see the manual for each PFM - Agent or PFM - RM.

The process flow for examining items to be monitored is as follows:

1.   Examine alarms.

    After deciding what items are to be monitored in the system, you need to decide the thresholds for the items. For example, to keep a shared server from malfunctioning, you can monitor the percentage of free space on the server's logical hard drive, and decide an appropriate threshold.

    You also decide the method for notifying the system administrator when a threshold is reached. For example, a notification can be sent by an email or SNMP trap.

2.   Examine reports.

    To analyze the cause of some situation and understand the current status, you can decide how the report is to be displayed when a threshold is exceeded and an alarm occurs. For example, for the items to be monitored and the display method, you might use a bar graph to show the ten logical hard drives with the least amount of free space.

When selecting items to be monitored, you can use the monitoring template provided by Performance Management. Using the monitoring template as is, or customizing a part of the definition reduces the system administrator's work required to define the items to be monitored.

Point:

    Selecting parameters for programs being monitored is not just a technical matter. Hitachi recommends that you also consider both job characteristics and operating structure of the system.

The following describes examining alarms and reports.

(1) Examining alarms

This subsection describes details about examining alarms.

(a) How to set the threshold

Performance Management can issue an alarm event when the performance data collected by PFM - Agent or PFM - RM reaches a pre-defined threshold. The system

administrator can use this function to decide which values, when exceeded for the items being monitored, will cause an alarm event. With Performance Management, the conditions that cause an alarm event to be issued can be defined for specified periods of time.

For example, you could set up the following configurations:

- Specify separate settings for the processes to be monitored during the day and during the night

- Because a system operator is constantly monitoring from a monitoring center during the daytime, you can specify that notification by a blinking icon on the monitoring console. You can specify that, at night, an email to be sent to the system administrator's mobile phone.

The system administrator should decide the time periods during which the system is to be monitored.

Performance Management can be configured so that an alarm event does not occur if the threshold is exceeded due to a sudden load increase. By configuring Performance Management to send out a notification only after the threshold has been exceeded a certain number of times within a certain number of monitoring intervals, monitoring can be performed such that notification occurs only when the CPU has a heavy, continuous load. By suppressing notifications for sudden, temporary load increases, you can ensure that alarms are issued efficiently, taking into account the system attributes.

(b) Measures to take when a threshold is reached

The system administrator needs to decide the following for when a program reaches a critical state: how the problem location is to be detected, what primary measures are to be taken and by whom, and how to resolve the problem if the primary measures fail. Performance Management can automatically execute the following actions when an alarm event occurs:

- Notify the system administrator by an email:

- Send an SNMP trap

- Execute commands, including `net send` (messenger service) and `wall`, to notify the system administrator without sending an email or SNMP trap

- Issue a JP1 event to link with other JP1 products

The system administrator should examine measures to take when an alarm is sent by the operation monitoring system, including the above functions.

The following figure shows an example of examining process to follow when an alarm occurs.

Figure 3-9: Example of the process to follow when a monitored system reaches a critical state
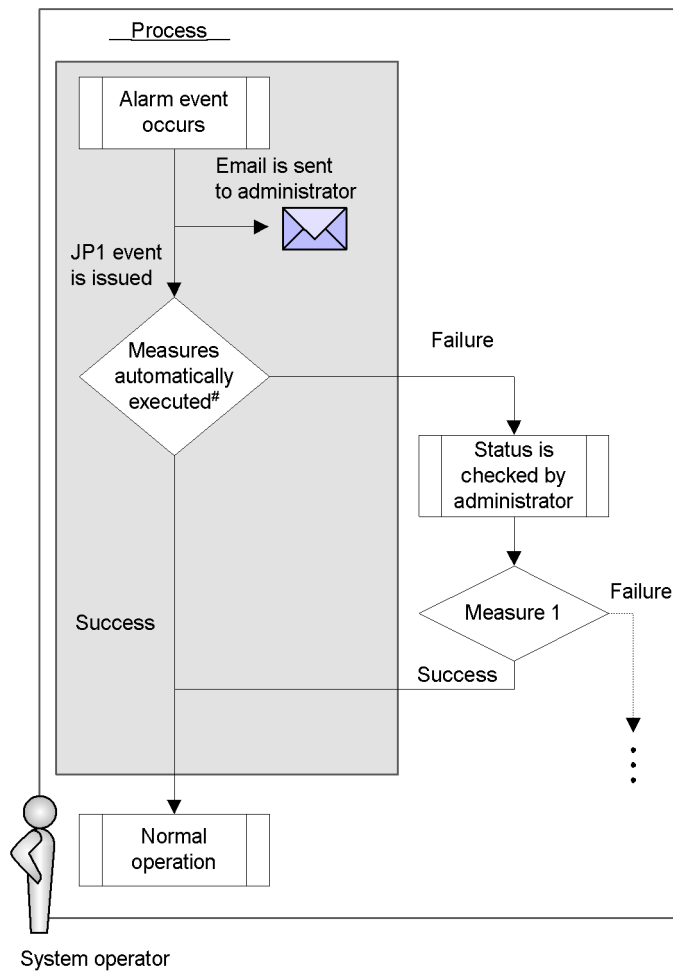
Point:

When an alarm event occurs, if the system administrator wants to automatically execute a recovery program and return the system to the normal operating status, Hitachi recommends that the system be set up to issue a JP1 event and link with systems such as a job management system.

(2) Examining reports

This subsection describes details about examining reports.

(a) What type of report to use

Performance Management can create a real-time report to indicate the current operation status and a historical report to show long-term trends in the operation status. The system administrator should examine what type of report based on the performance data should be created in order to check the operation status. Creating easy-to-understand reports allows problems with the system to be understood correctly.

Performance Management can display reports every day, week, month, or year. You can configure Performance Management to display a report from the alarm icon when an alarm event occurs or define an association between related reports that allows you to open a different report using a drill-down operation.

Performance Management can also display multiple reports combined on the same graph, allowing you to determine the operating status of the overall system in a comprehensive manner.

To analyze operations over a long period of time, the output format of reports should be examined if they need to be output regularly. In Performance Management, you can display reports in the PFM - Web Console GUI, or use an operation command (the jpcrpt command) to output the report to a text file in CSV or HTML format.

For details on how to define and output a report, see the chapter that explains the creation of reports for operation analysis in the *Job Management Partner 1/ Performance Management User's Guide*.

(b) What items to save in the database

The system administrator should decide the following regarding the performance data collected by monitoring agents:

- Whether to record the performance data in the Store database

  To display the performance data as a historical report, the performance data to be displayed must be configured so that it is saved in the Store database.

- Performance data collection interval and timing

  When many items are monitored, the system performance might decrease when data collection and recording occurs. In such a case, the load on the system can be distributed over time if the performance data collection is staggered by item.

  For example, if the performance data for two items is being collected every minute, the offset of one can be configured to 0 seconds and the other to 20 seconds in order to stagger the collection starting time by 20 seconds. When changing the offset, consider the load due to performance data collection and then

specify the setting.

Figure 3-10: Example of the performance data collection interval and offset configuration
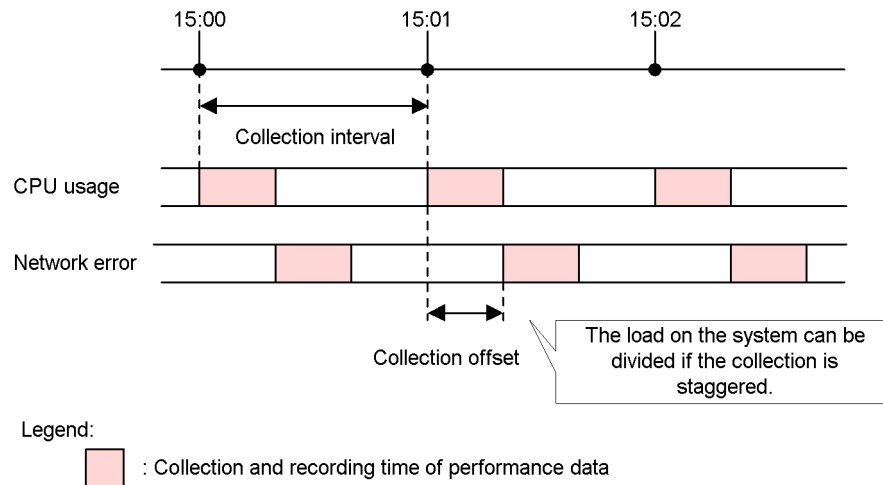
For details on how to record the performance data, see the chapter that describes the management of operation monitoring data in the *Job Management Partner 1/ Performance Management User's Guide*.

3.4.4 Examining the binding method of an alarm table

To perform monitoring that uses alarms with Performance Management, you must associate a monitoring agent with an alarm table. An alarm table is a consolidated group of several alarms. This association is known as *binding*.

The monitoring agent evaluates condition expressions for all alarms included in the bound alarm table and notifies an alarm to PFM - Web Console, according to the specified alarm definition. Normally, alarms are notified when an evaluation determines that a condition has been changed.

If you add a new alarm to an alarm table that is already bound to the monitoring agent, or if you change an existing alarm's definition, the new definition is automatically used to perform evaluations.

Alarm tables are bound as follows:

- Each monitoring agent can have one alarm table bound to it.

- Each monitoring agent can have multiple alarm tables bound to it.

If you bind multiple alarm tables to a monitoring agent, different alarm conditions can be set for each agent. That is, you can use different combinations of alarm tables for each monitoring agent. For example, you can create a separate alarm table for each

type of monitoring, such as database cache monitoring, CPU usage monitoring, or process monitoring. After creating a separate table, you can then bind a monitoring agent with a combination of alarm tables for database cache and process monitoring, or bind another agent with a combination of alarm tables for CPU usage and process monitoring.

If you have multiple monitoring agents, you can bind a common alarm table to all of the monitoring agents, as well as add another alarm table to a specific monitoring agent.

The following figure shows an example of binding multiple alarm tables:

Figure 3-11: Example of binding multiple alarm tables
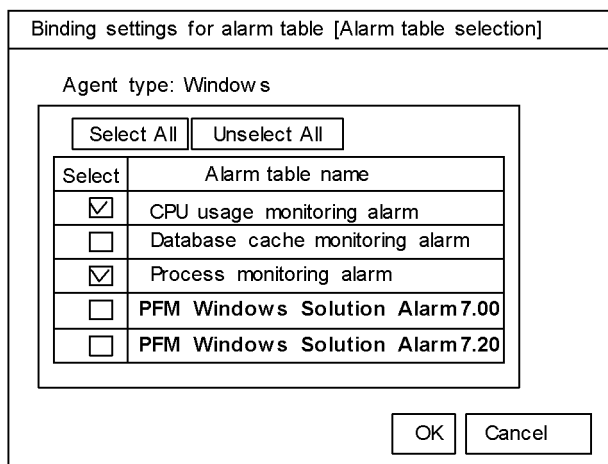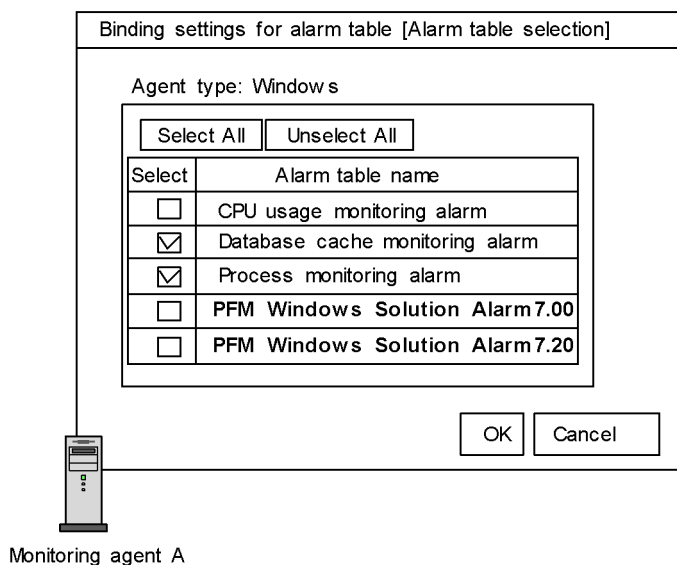
You can set the binding method of the alarm table in PFM - Manager. You must be
using version 09-00 or later of PFM - Manager and PFM - Web Console to bind
multiple alarm tables to one monitoring agent. To bind multiple alarm tables to a
monitoring agent, PFM - Agent must be 08-00 or later, and PFM - Base must be 09-00
or later. To bind an alarm table to a monitoring agent for PFM - RM, the Performance
Management product must be 09-00 or later. For details on how to configure the
binding method of the alarm table, see *5.4.4 Configuring the functionality for binding
multiple alarm tables* for Windows, and *6.4.4 Configuring the functionality for binding
multiple alarm tables* for UNIX.

3.4.5 Examining data management methods

The system administrator should examine how to obtain the backed up data with Performance Management in case of data loss due to problems such as a disk malfunction. The following indicates when to use Performance Management to back up the required data.

Operating information

> The operating information data (performance data and event data) collected by Performance Management is backed up. Because this operating information data is updated daily, Hitachi recommends that you obtain the data regularly, weekly or monthly, as needed.

Definition information

> Data such as definition files of required services for running Performance Management and the configuration data, such as alarms and reports, is backed up. Hitachi recommends that you back up this definition information whenever the system configuration or settings are changed.

Figure 3-12: Example of using Performance Management to obtain required backup data

Calendar

Test operation

Change of network settings
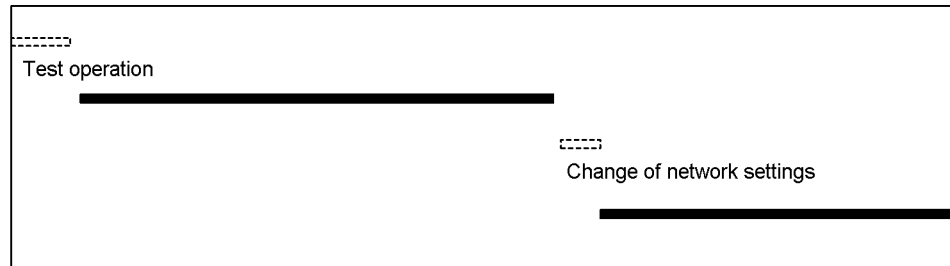
Example of obtaining a backup

Operation monitoring data

One week

Definition information
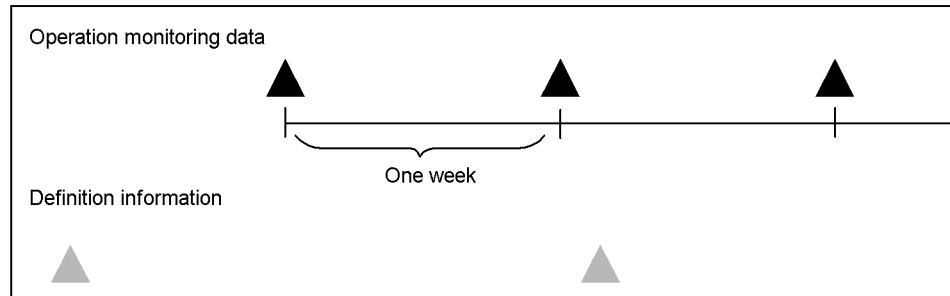
Operation monitoring data is backed up at regular intervals such as weeks.
Definition information is backed up whenever the system configuration is changed.

Legend:

: When operation monitoring data is backed up

: When definition information is backed up

: Online system running

: Online system stopped

You should examine the methods for exporting the obtained operating information so that it can be used by other applications.

Operating information is backed up and exported using the operation command (the `jpctool db` command). For details on how to back up data, see the chapter that describes backing up and restoring in the *Job Management Partner 1/Performance Management User's Guide*.

Point:

Operating information can be automatically managed by registering operation commands in a job scheduler or other function.

3.4.6 Examining Store database storage methods

Performance Management provides a database called the *Store database*, which stores the operation monitoring data collected by the monitoring agents. There are two versions of the Store database, and each stores data in a different way. The two database versions, called *Store 1.0* and *Store 2.0*, each have different characteristics in terms of features, maintenance, and resource usage. For this reason, the system administrator should examine what storage method to use for the Store database when configuring an operation monitoring system.

Hint:

PFM - RM can only use Store 2.0.

The following table shows the features of Store 1.0 and Store 2.0.

Table 3-1: Features of Store 1.0 and Store 2.0

Category	Item	Store 1.0	Store 2.0
Functionality	Amount of performance data that can be stored	Maximum of 2 GB per record type (PI, PD, PL) per agent (instance)	Maximum of 2 GB per day for each record per agent (instance)

	Retention period settings	PI records:
		    A retention period cannot be set for individual records, but can be set for PI records in general.
		PD records:
		    A maximum number of stored records can be set for individual records.
		PL records:
		    A maximum number of stored records can be set for individual records.
			PI records:
			    Retention periods can be set for individual records.
			PD records:
			    Retention periods can be set for individual records.
			PL records:
			    Retention periods can be set for individual records.

	Maximum retention period for PI records	Records collected on a per-minute, hourly, daily, weekly, or monthly basis are kept for a maximum of one year. Records collected yearly can be kept indefinitely.	Records collected on a per-minute or hourly basis are kept for a maximum of one year. Records collected on a daily, weekly, or monthly basis are kept for a maximum of 10 years. Records collected yearly can be kept indefinitely.

Category	Item	Store 1.0	Store 2.0
	Viewing of historical data	Data from outside the retention period cannot be viewed even when present in the backup data.	Backup data can be imported and viewed regardless of when it was stored.
Maintenance	Backup	Allows backup of the entire database (full backup) only	Allows full backup of the database, or partial backup by specifying a number of days from the execution date (this allows backup of only the data that has changed since the last backup)
	Database reorganization	The database must be reorganized periodically to delete invalidated areas	Database does not need reorganization
Resource usage	Number of files created	Few (for details, see the appendixes in the PFM - Agent manuals)	Many (for details, see the appendixes in the PFM - Agent or PFM - RM manuals)
	Number of files that can be opened concurrently	Few (for details, see the appendixes in the PFM - Agent manuals)	Many (for details, see the appendixes in the PFM - Agent or PFM - RM manuals)
Versatility	Available Performance Management programs	PFM - Agent	PFM - Agent and PFM - RM

Based on these features, the following describes when use of each version of the Store database is recommended.

Situations where Store 1.0 is recommended:

Store 2.0 uses more system resources (in terms of the number of files used and the number of open files) than the database provided with Performance Management version 08-00 or earlier. Also, because of changes to some of the retention periods, you need to re-estimate the database settings as well as the disk space required.

In situations where changing these settings proves difficult, such as upgrading Performance Management in a system already in operation, Hitachi recommends that you use Store 1.0. By doing so, you can continue operation using the original estimates (for Performance Management 08-00 or earlier).

Situations where Store 2.0 is recommended:

With Store 2.0 you can perform partial backups of performance data and import the backed up data. This allows for the management of performance data over long periods. For this reason, Hitachi recommends that you use Store 2.0 with new systems. Store 2.0 should also be used when Store 1.0 does not support your

requirements in terms of the amount of performance data you want to store or the desired retention period.

3.4.7 Examining measures to take when the operation monitoring system itself malfunctions

In order to provide stable operation for the operation monitoring system itself, the system administrator should examine measures to take when problems in the operation monitoring system itself are detected and a malfunction occurs.

(1) Detecting problems in Performance Management

With Performance Management, you can use the health check function to monitor the status of the host where the monitoring agent is running and to check whether the monitoring agent is working correctly. The health check function offers a two-tiered monitoring approach, consisting of the following two monitoring levels:

Monitoring the operating status of the host running the monitoring agent:

The health check function monitors the operating status of a host running PFM - Agent or PFM - RM, or the operating status of the hosts monitored by PFM - RM. You can check the operating status from PFM - Web Console.

Monitoring the operating status of the monitoring agent service:

In addition to monitoring the operating status of the host running PFM - Agent or PFM - RM, the health check function monitors the operating status of the Agent Collector, Remote Monitor Collector, Agent Store, and Remote Monitor Store services. You can check the operating statuses from PFM - Web Console.

You can change how the health check function operates according to what the health check function is to monitor and the desired monitoring conditions. However, the prerequisites differ for each mode of operation. For details on the prerequisites for using the health check function, see the chapter that describes detecting problems in the *Job Management Partner 1/Performance Management User's Guide*.

You cannot use the health check function to monitor the operating status of PFM - Manager itself. By using the `jpctool service list` command, you can check a detailed status of services for PFM - Manager, PFM - Agent, or PFM - RM. You can also detect errors by linking with other products (JP1/Base) in the JP1 series.

For details on detecting problems within Performance Management, see the chapter that describes detecting problems within Performance Management in the *Job Management Partner 1/Performance Management User's Guide*.

(2) Automatically restarting PFM services

If for some reason a PFM service abnormally terminates, the *PFM service automatic restart function* of Performance Management allows you to automatically restart the service. This ensures continuous system monitoring. If you are not using a cluster

system that has high system availability, we recommend using the PFM service automatic restart function. You can automatic restart PFM services in the following ways:

Automatic restart function

If for some reason a PFM service abnormally terminates, this functionality automatically restarts the service.

Scheduled restart functionality

This functionality restarts a PFM service at scheduled intervals. This helps to avoid memory leaks and handle leaks caused by problems with the OS or actual PFM service.

For the prerequisite conditions and procedure to use the PFM service automatic restart function, see the chapter that describes detecting problems in Performance Management in the *Job Management Partner 1/Performance Management User's Guide*.

(3) Collecting the maintenance information when a problem occurs

In order to identify the cause of a problem, information including the OS logs and internal log output by Performance Management might be necessary in addition to the operating information. Performance Management provides operation commands (the `jpcras` and `jpcwras` commands) to collectively obtain this maintenance information.

For details on collecting the maintenance information when a problem occurs, see the chapter that describes the error handling procedures in the *Job Management Partner 1/Performance Management User's Guide*.

3.4.8 Estimating the required hard drive space for Performance Management

After finishing other steps, such as deciding items to be monitored, you need to perform the final step of estimating the required hard drive space for Performance Management. Performance Management handles the following three main types of data. The system administrator should estimate the size of this data and prepare the required free disk space.

- Performance data collected by monitoring agents
- Event data indicating the status of the monitoring agents
- Data required for running Performance Management, log files output by Performance data, and other data

Hitachi recommends that the system be designed with ample free disk space to ensure future system expandability.

The following gives an overview of estimating the required disk space for each Performance Management program. For details on required disk space estimates, see *C. System Estimates*.

(a) Required disk space for PFM - Manager

The following indicates the required disk space for PFM - Manager:

- Required disk space for running the system:

  This depends on factors such as the OS in which PFM - Manager is installed and the retention period of output logs.

- Required disk space for storing event data:

  The disk space required for event data depends on factors such as the number of instances of PFM - Agent and PFM - RM that connect to PFM - Manager and the number of events to be saved. In addition, disk space must be reserved for performing actions such as backing up and exporting data.

- Required disk space for storing the monitoring result data produced by the health check function

  This depends on factors such as the amount and data retention conditions of the monitoring result data in the Store database. In addition, some disk space must be reserved for performing actions such as backing up and exporting data. The required disk space also depends on the store method used by the Store database (either Store 1.0 or Store 2.0), which must be considered when estimating disk space requirements.

(b) Required disk space for PFM - Web Console

The required disk space for executing Web applications by using a browser to monitor depends on factors such as the OS in which PFM - Web Console is installed and the maximum amount of log data output by the system.

(c) Required disk space for PFM - Base

The required disk space for PFM - Base depends on factors such as the OS in which PFM - Base is installed and the maximum amount of log data output by the system.

(d) Required disk space for PFM - Agent and PFM - RM

The required disk space for PFM - Agent and PFM - RM is as follows:

- Required disk space for running the system

  The disk space required for running the system depends on factors such as the OS in which PFM - Agent and PFM - RM is installed and the amount of time output logs are saved.

- Required disk space for storing performance data

This depends on factors such as the amount and data retention conditions of the performance data in the Store database. In addition, some disk space must be separately reserved for performing actions such as backing up and exporting data. The required disk space also depends on the store method used by the Store database (either Store 1.0 or Store 2.0), which must be considered when estimating disk space requirements.

Chapter

4. Performance Management Functions

This chapter describes Performance Management functions for constructing the operation monitoring system.

4.1 Performance Management services

4.1.1 Overview of services

Performance Management monitors operations of the monitoring agents by executing processes that have various functions. A process performed by the functions that comprise the Performance Management program is called a *service*. This section describes Performance Management services.

The following figure gives an overview of Performance Management services.

Figure 4-1: Overview of Performance Management services
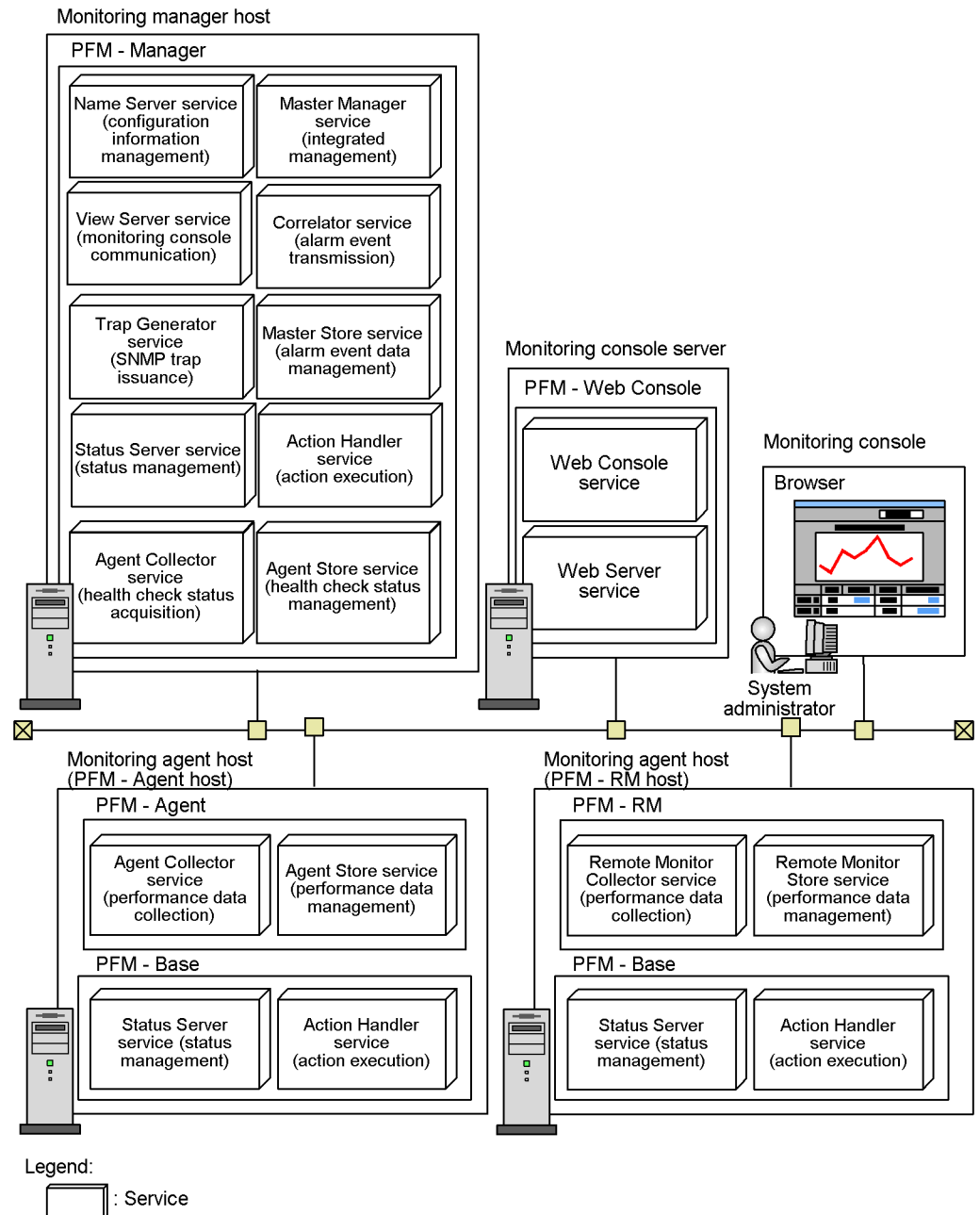
You can check properties and the status of services in the monitoring console by

selecting the Services window of PFM - Web Console. You can also stop services.

(1) Service types

The following table lists and describes the functions and names of the Performance Management services. Performance Management services have service IDs in addition to the service names described in the table. The system uses service IDs to execute commands and to display in the monitoring console. For details on service IDs, see *B.1 Naming rules for services*.

Table 4-1: PFM - Manager services

Service name	Function	Detail
Name Server	Service configuration information management	Manages the service configuration information such as registration and update of the Performance Management service information.
Master Manager	System integrated management	The main server is the core of PFM - Manager. Manages the definition information of reports and alarms, and transmits the definition information.
View Server	Monitoring console communication server	Manages the communication processing when connected to PFM - Web Console.
Correlator	Alarm event transmission control	Controls alarm event transmissions between services.
Master Store	Event data management	Records the event data from each instance of PFM - Agent and PFM - RM in the Store database and manages the data.
Trap Generator	SNMP trap issuance	Issues SNMP traps when alarm events occur due to the monitoring agent data exceeding a threshold value.
Action Handler	Action execution	Executes actions to inform the user of the system status such as errors, when alarm events occur due to the monitoring agent data exceeding a threshold value.
Status Server	Status management	Manages the status of the Performance Management services.

Service name	Function	Detail
Agent Collector	Health check status collection	Collects the following operating statuses and monitors thresholds: • Operating status of PFM - Agent and PFM - RM services • Operating status of the hosts running the PFM - Agent or PFM - RM • Operating status of the monitored host of PFM-RM Processes the data when real-time reports are displayed in the PFM - Web Console browser.
Agent Store	Health check status management	Records the following collected operating information into the Store database and manages this data. • Operating status of PFM - Agent and PFM - RM services • Operating status of the hosts running the PFM - Agent or PFM - RM • Operating status of the monitored host of PFM-RM Processes the data when historical reports are displayed in the PFM - Web Console browser. Processes the data when ODBC-compliant application programs are used.

Table 4-2: PFM - Web Console services

Service name	Function	Detail
PFM - Web Console	Web application execution function	This is the main service of PFM - Web Console. Processes connection to PFM - Manager and requests from the browser.
PFM - Web Service	http server function	Manages the communication processing with the browser.

Table 4-3: PFM - Base services

Service name	Function	Detail
Action Handler[#]	Action execution	Executes actions to inform the user of the system status such as errors, when alarm events occur due to the monitoring agent data exceeding a threshold value.
Status Server[#]	Status management	Manages the status of the Performance Management services.

\#

The system places only one of the PFM - Base services on the host when there are multiple instances of PFM - Agents or PFM - RM on the same host.

Table 4-4: PFM - Agent services

Service name	Function	Detail
Agent Collector	Performance data collection	Collects the performance data of monitoring agents and monitors thresholds. Processes the data when real-time reports are displayed in the PFM - Web Console browser.
Agent Store	Performance data management	Records the collected performance data into the Store database and manages this data. Processes the data when historical reports are displayed in the PFM - Web Console browser. Processes the data when ODBC-compliant application programs are used.

Table 4-5: PFM - RM services

Service name	Function	Detail
Remote Monitor Collector	Performance data collection	Collects the performance data of monitoring agents and monitors thresholds. Processes the data when real-time reports are displayed in the PFM - Web Console browser.
Remote Monitor Store	Performance data management	Records the collected performance data into the Store database and manages this data. Processes the data when historical reports are displayed in the PFM - Web Console browser. Processes the data when ODBC-compliant application programs are used.

(2) Starting instances

Some PFM - Agent or PFM - RM products can monitor every *instance*[#] of a target program.

\#

The term *instance* has two meanings in this manual. For details, see *instance* in *J. Glossary*.

For example, PFM - Agent for Oracle monitors each Oracle instance with an SID. In such cases, you need to construct an instance environment to run PFM - Agent services with multiple instances.

Figure 4-2: Example of starting an instance
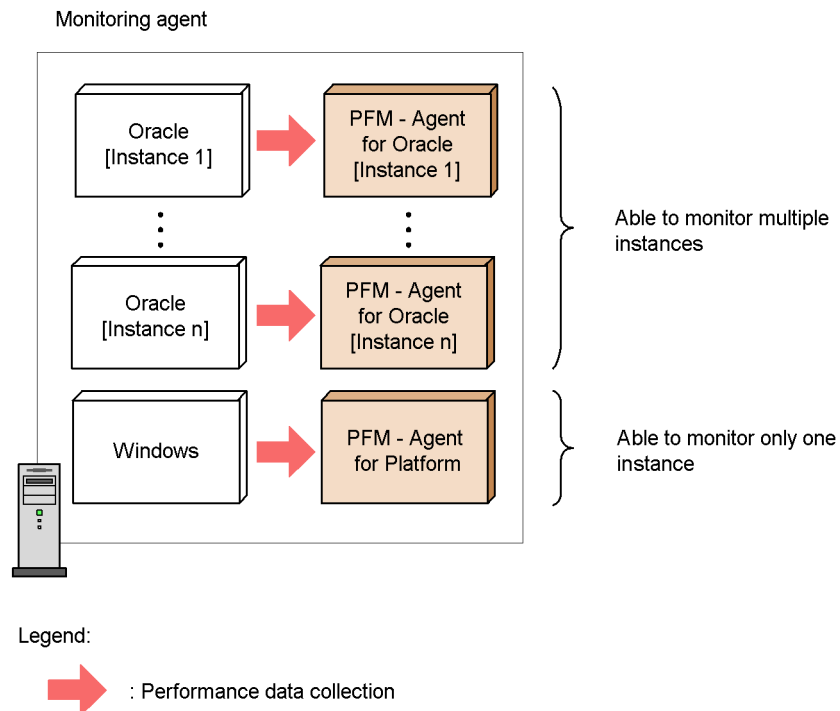
For details on the possibility of instance-based monitoring, and how to construct an instance environment, see the PFM - Agent or PFM - RM manual.

4.1.2 Displaying and specifying services

This subsection describes the formats for service IDs and service keys used to display and specify services.

A Performance Management service has the following two identifiers:

- Service ID
- Service key

In Performance Management 09-00 and later, enabling the *product name display function* allows you to change the formats for the service IDs and the service keys you can display and specify.

For details on the Performance Management products required for using the product name display function, see *(2) Coverage of the product name display function*.

(1) Overview of the product name display function

You can use the product name display function to change the service identifier format for Performance Management. If this function is enabled, each identifier displays the name of the program to be monitored. This makes it easier to identify the service. After the format is changed, it is called the *product name*.

For details on the format of the identifier in each case when the product name display function is enabled and disabled, see *B.1 Naming rules for services*.

The following figures provide examples of the monitoring console displays and the outputs generated when you execute the commands.

Figure 4-3: Example of the Services tree displayed on the monitoring console (if the product name display function is enabled)
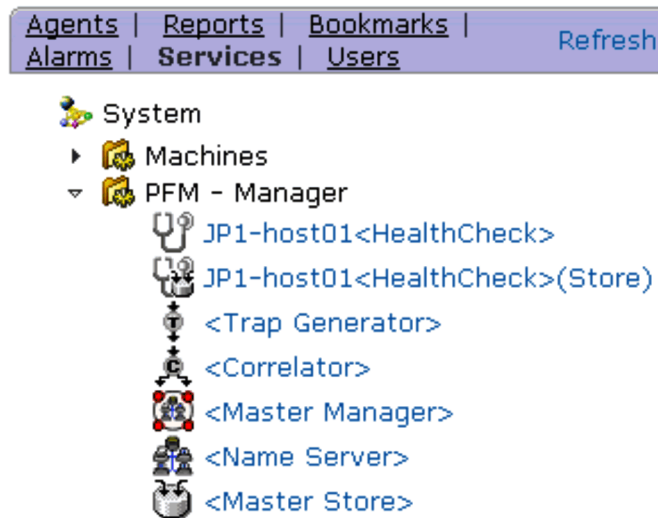
Figure 4-4: Example of the Services tree displayed on the monitoring console (if the product name display function is disabled)
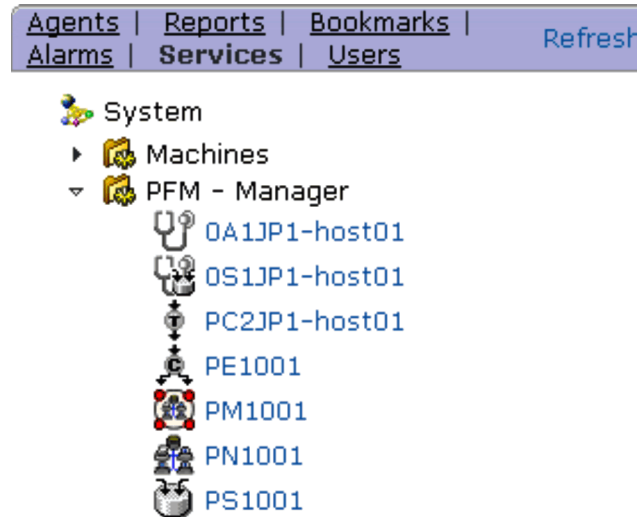
Figure 4-5: Example of the output generated when the jpctool service list command is executed (if the product name display function is enabled)

```
Host Name     Service                                 PID       Port      Status
---------     -------------                           --------  --------  --------
pfm-host      pfm-host<Status Server>                 3092      22350     Active
pfm-host      <Name Server>                           3040      22285     Active
pfm-host      <Master Manager>                        2192      4004      Active
pfm-host      <Master Store>                          1644      4010      Active
pfm-host      <Correlator>                            1940      4015      Active
pfm-host      <Trap Generator>                        2100      4016      Active
pfm-host      <View Server>                           252       4026      Active
pfm-host      pfm-host<Action Handler>                2992      4051      Active
pfm-host      pfm-host<Windows>(Store)                1408      4063      Active
pfm-host      pfm-host<Windows>                        3880      4064      Busy
pfm-host      pfm-host<HealthCheck>(Store)            2960      4041      Active
pfm-host      pfm-host<HealthCheck>                   2620      4042      Active
KAVE06003-I List processing of the service information terminated normally.
```

Figure 4-6: Example of the output generated when the jpctool service list command is executed (if the product name display function is disabled)

```
Host Name      ServiceID        Service Name      PID      Port      Status
---------      ---------        -------------     --------  --------  --------
pfm-host       PT1pfm-host      Status Server     3092      22350     Active
pfm-host       PN1001           Name Server       3040      22285     Active
pfm-host       PM1001           Master Manager    2192      4004      Active
pfm-host       PS1001           Master Store      1644      4010      Active
pfm-host       PE1001           Correlator        1940      4015      Active
pfm-host       PC3pfm-host      Trap Generator    2100      4016      Active
pfm-host       PP1pfm-host      View Server       252       4026      Active
pfm-host       PH1pfm-host      Action Handler    2992      4051      Active
pfm-host       TS1pfm-host      Agent Store       1408      4063      Active
pfm-host       TA1pfm-host      Agent Collector   3880      4064      Busy
pfm-host       0S1pfm-host      Agent Store       2960      4041      Active
pfm-host       0A1pfm-host      Agent Collector   2620      4042      Active
KAVE06003-I List processing of the service information terminated normally.
```

Reference note:

> To display the output generated when the `jpctool service list` command is executed as a product name, enable the product name display function and then specify the `-v` option.

(2) Coverage of the product name display function

The following table shows the coverage of the product name display function. For all other items, even if this function is enabled, you cannot use the product name to display the identifier. This table also describes all the Performance Management products and hosts for which you must configure this function to use each item. The product name display function can be used for all versions of PFM - Agent and PFM - RM.

Table 4-6: Items for which the product name is available

Items for which the product name is available	Hosts for which the product name display function is set	Required Performance Management products
Service ID displayed on the monitoring console	PFM - Manager host	• PFM - Manager 09-00 or later • PFM - Web Console 09-00 or later
Report on the monitoring console		
Event monitor		

Items for which the product name is available	Hosts for which the product name display function is set	Required Performance Management products
Service ID displayed on the event history window		
Service ID displayed when the `jpctool service list` command is executed[#]	The host that executes the command	When the host that executes the command is a PFM - Manager host: - PFM - Manager 09-00 or later When the host that executes the command is a PFM - Agent or PFM - RM host: - PFM - Base 09-00 or later
Service key specified when a command is executed	--	
Service key displayed in a message	The host that outputs the message	When the host that outputs the message is a PFM - Manager host: - PFM - Manager 09-00 or later When the host that outputs the message is a PFM - Agent or PFM - RM host: - PFM - Base 09-00 or later

Legend:

> --: Available regardless of whether the product name display function is enabled or disabled.

\#

> To display this item by using the product name, specify the `-v` option. For details on the `jpctool service list` command, see the chapters that describe commands in the manual *Job Management Partner 1/Performance Management Reference*.

(3) Configuring the product name display function

For details on how to set up the product name display function, see *5.4.9 Configuring the product name display function* (in Windows) or *6.4.8 Configuring the product name display function* (in UNIX).

The default setting of the product name display function varies depending on how to install Performance Management. The following table lists and describes the installation methods and the default setting.

Table 4-7: Installation methods of Performance Management and the default settings of the product name display function

Installation method	Performance Management version before upgrade	Configuring the product name display function
New installation	--	Enabled
Upgrade installation	09-00 or later	Settings prior to upgrading are used.
	08-11 or earlier	Disabled

Legend:

--: Not applicable

4.2 Functions for collecting and managing performance data

Performance Management collects performance data from the monitoring agents. There are two categories of collected data: data that references real-time transitions, and data that also references the history. Performance data that also references the history saves the collected data into the Store database and manages this data.

- Recording performance data into the Store database

  You can specify whether you want to record the collected performance data into the Store database. You can also specify judgment conditions when recording the performance data into the Store database.

- Performance data collection interval and timing

  You can specify the intervals for collecting the performance data. System performance might decrease when data collection and recording occur when there are many items to be monitored. In such cases, the load on the system can be distributed over time by changing the collection timing to a monitoring item basis.

  For example, if the performance data on two items is being collected every minute, set the offset of the collection start time (Collection Offset) to 0 seconds for one item, and set the offset of the collection start time (Collection Offset) to 20 seconds for the other. This shifts the collection timing, and distributes the load over the system.

The following describes functions for collecting and managing the performance data.

4.2.1 Performance data

The data that is collected from the monitoring agent and indicates details of operation status is called *performance data*. The system administrator can check the collected performance data by using a browser.

Performance Management collects performance data in units called *records*. Items that can be monitored vary depending on PFM - Agent or PFM - RM.

There are two types of performance data:

Real-time data

  This type of performance data displays the current status of the monitored target.

  Use this type to check the status of a constantly changing system and system errors in the window of PFM - Web Console.

Historical data

  This type of performance data displays the status of the monitored target from past to present.

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Use this type mainly to analyze system trends. The monitoring agent database stores historical data in one of the following two formats depending on data characteristics:

- Summary record

  The system automatically calculates the values collected by the monitoring agent, summarizes the average and total values in minutes, and hourly, daily, weekly, monthly, and yearly units, and then the Store database stores this summary data.

  The summary record monitors long-term system performance. These records are called a *Product Interval record type* (*PI record type*).

- Non-summary record

  The Store database stores the performance data in the same state as collected by the monitoring agent.

  There are two record types: A *Product Detail record type* (*PD record type*) that collects the performance data displaying the status of the system at a certain point (for example, detailed information of a currently operating process), and a *Product Log record type* (*PL record type*) that collects logs and messages of systems and applications.

Record types other than above are available depending on the monitored target. For details, see the appropriate chapters that describe records in each PFM - Agent or PFM - RM manual.

(1) Data models

The Store database stores performance data in record units. Each record is divided into smaller units, called *fields*.

The generic term for the performance data collected by agents is called a *data model*. Data models are managed by version.

The following conceptual figure shows a data model, records, and fields.

Figure 4-7: Conceptual figure of a data model, records, and fields

Data model

Performance data record for the entire system

Field

Collection time		Actual used memory size	Block I/O processing counts	---
8/1	15:00	13	2	---
8/1	16:00	28	8	---
8/1	17:00	20	5	---
8/1	18:00	46	4	---

Time

Record

PI record-type
Store database

Process performance record

Field

Collection time		Memory usage	Handle counts	---
8/1	15:00	19	10	---
8/1	15:10	30	5	---
8/1	15:20	17	7	---
8/1	15:30	46	3	---
8/1	15:40	17	1	---

Time

Record

PD record-type
Store database

Log file message record

Field

Collection time		Message text	---
8/1	15:00	Server stopped	---
8/1	15:10	Server started	---
8/1	15:20	Error occurred	---
8/1	15:30	Server stopped	---
8/1	15:40	Server started	---

Time

Record

PL record-type
Store database

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(2) Single-instance and multi-instance records

There are two types of performance data records collected by Performance Management depending on the monitoring items:

Single-instance record:

A record that collects one record at a time is called a *single-instance record*. The following shows an example of a single-instance record.

Figure 4-8: Example of a single-instance record
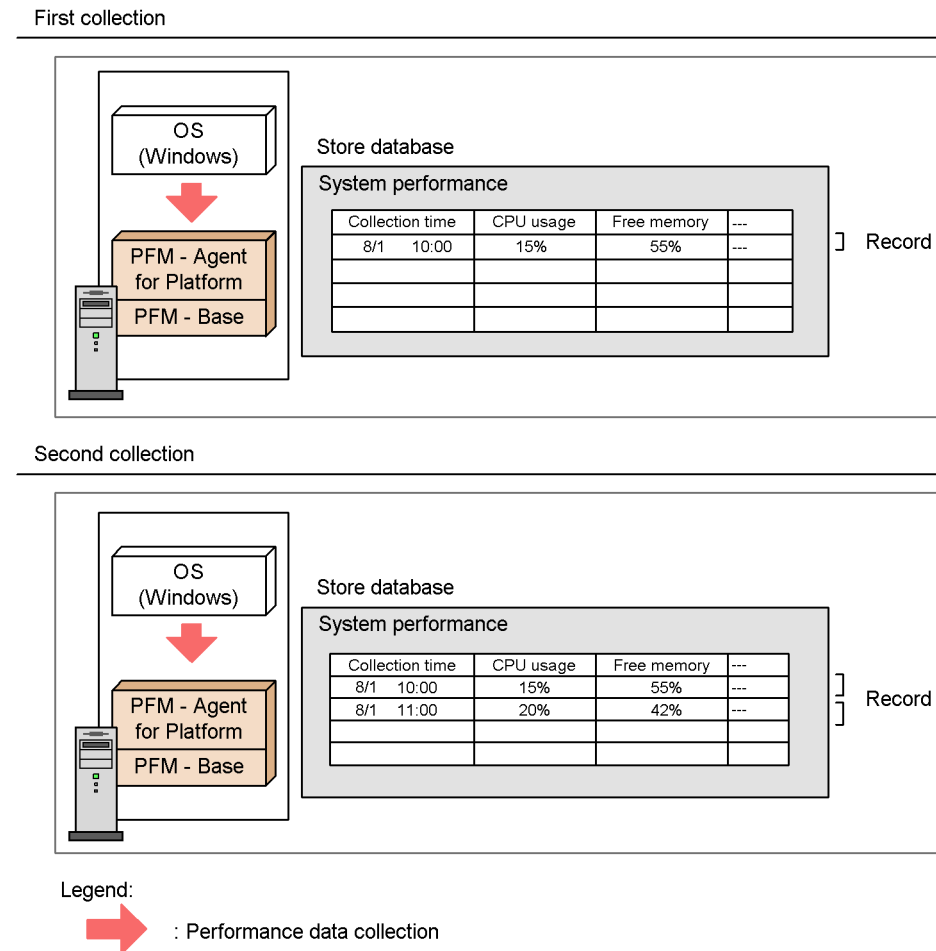
Multi-instance record:

A record that collects multiple records at a time is called a *multi-instance record*. The following figure shows an example of a multi-instance record.

Figure 4-9: Example of a multi-instance record
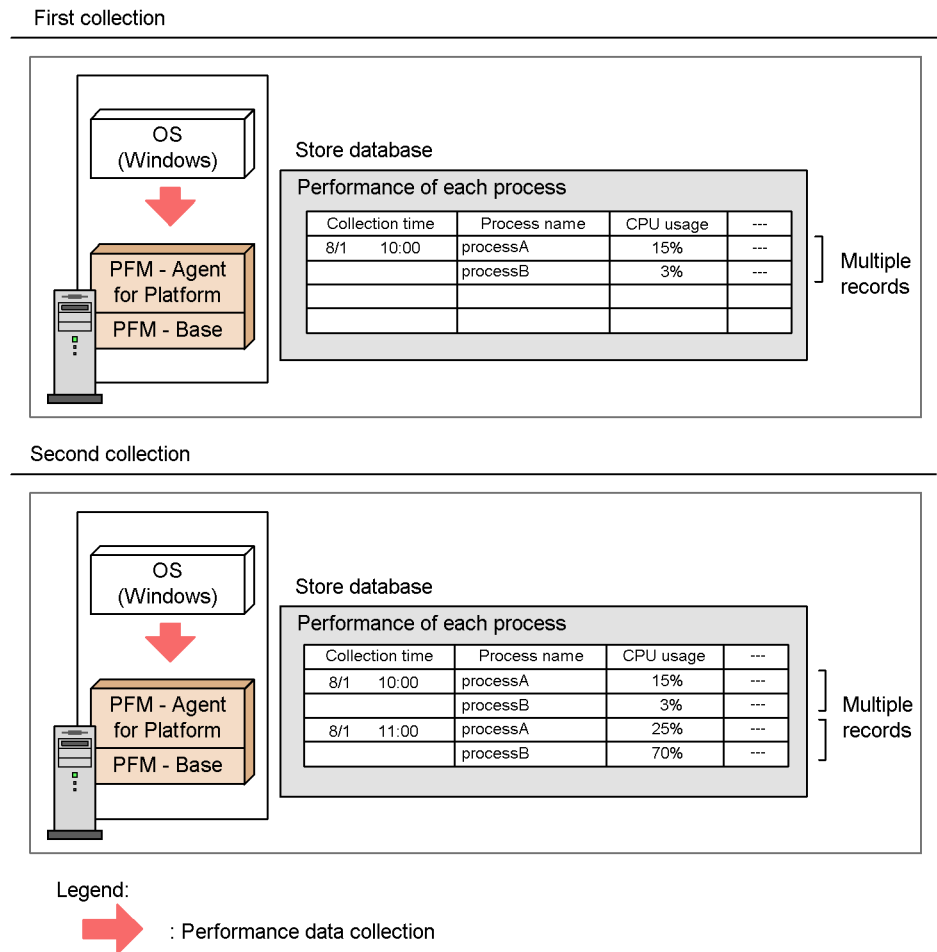
Point:

> A group of records collected at the same time is called a *data group*. A data group of a single-instance record consists of one record. A data group of a multi-instance record consists of multiple records.

4.2.2 Performance data collection function

This subsection describes the performance data collection function.

(1) *Flow of processing in performance data collection*

The following figure shows the flow of Performance Management processing during performance data collection.

Figure 4-10: Flow of processing during performance data collection
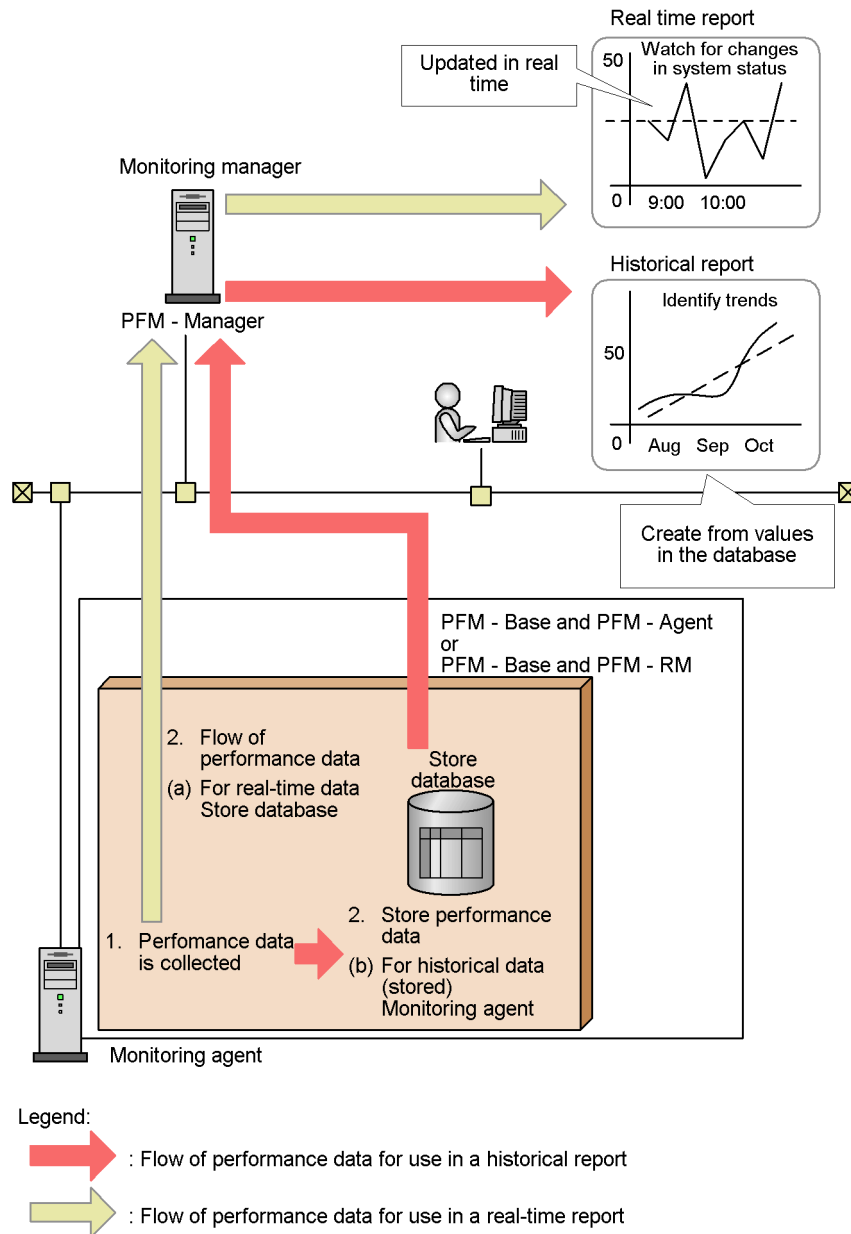
Flow of processing:

1.   The performance data is collected.

The Agent Collector service or Remote Monitor Collector service collects the performance data and manages the data in record format.

2. The performance data is stored.

(a) For real-time data

The Store database does not store the collected performance but the data appears in the real-time reports.

(b) For historical data

The Agent Store service and Remote Monitor Store service store the collected performance data in the Store database. The system uses this data to display the historical reports and to execute SQL queries by using the ODBC driver.

(2) Life cycle of performance data

PFM - Agent and PFM - RM collect performance data at the following times:

- For real-time data: At the refresh intervals specified in the report definition

- For historical data: At the intervals specified in the collection interval (Collection Intervals) of each record

PFM - Agent or PFM - RM might determine that the monitored target of the performance data collected at this time is the same target of the performance data previously collected. In this case PFM - Agent or PFM - RM treats the data as if they are the same records in the same field even if the collected data is from different targets.

Example regarding consistency:

In the case of the Process Detail (PD) record of PFM - Agent for Platform (Windows), the system uses the process name and process ID to judge whether performance data is from the same monitored target.

When the process name and process ID are the same as those of the data collected previously, PFM - Agent for Platform (Windows) recognizes the performance data collected at this time as data of the same process. Even when the process disappears during a collection interval and is later regenerated, if the process name and the process ID are the same as those of the data previously collected, PFM - Agent or PFM - RM recognize the data as the performance data of the same process. In such cases, the performance data becomes inconsistent.

Figure 4-11: Example of performance data consistency

Example: The performance data maintains consistency

Creation and disappearance of the process

Exhibits consistency
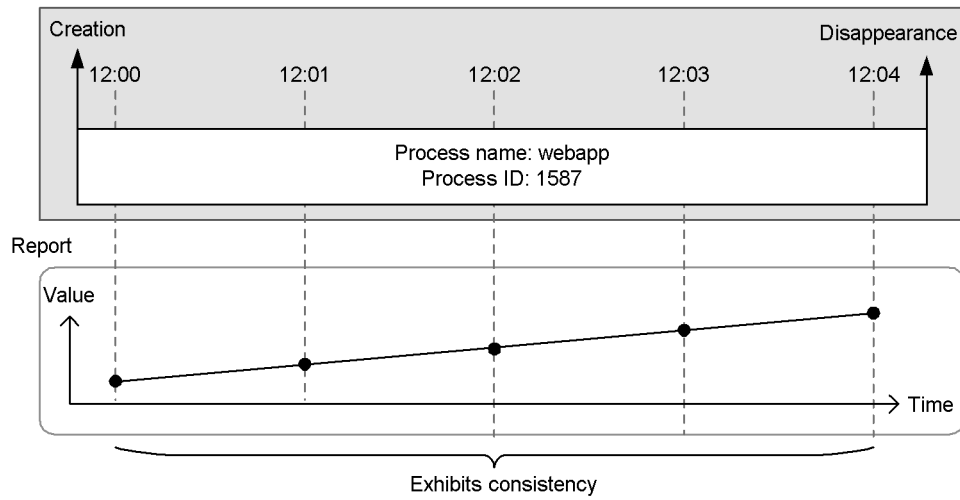
Example: The performance data lacks consistency

Creation and disappearance of the processes

Lack of data consistency due to data of different processes
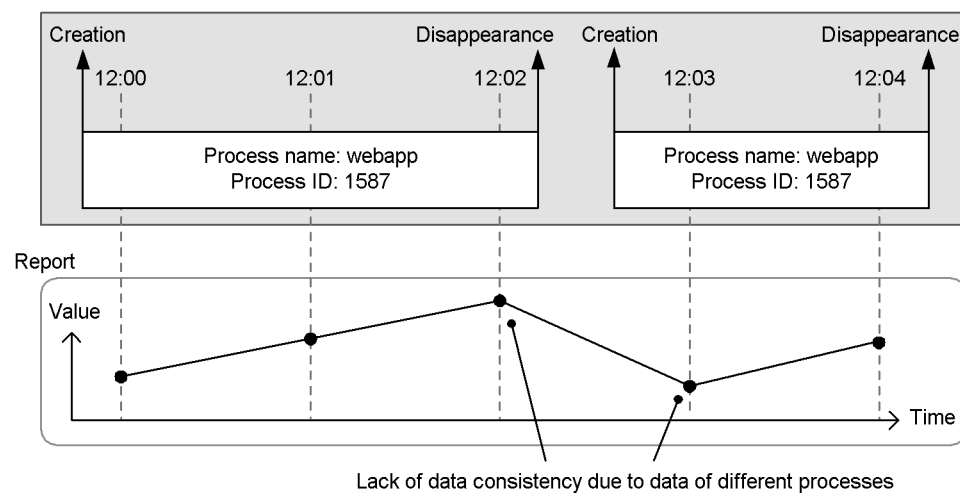
Legend:
- - - - -   : Timing to collect the performance data

Point:

The period during which performance data maintains consistency is called the *lifetime* of the performance data. Take into account the lifetime of performance data when specifying the refresh intervals for real-time data and collection intervals for historical data.

4.2.3 Performance data management function

Performance Management selects only the operation monitoring data needed for the system analysis from the collected records and stores the data in the database at required intervals. You can specify the upper limit of the data to be recorded in the database and a retention period enabling operation monitoring in a set resource. Depending on the monitoring records, you can also have Performance Management store the operation monitoring data in the database in summarized form, in a meaningful form such as the average or maximum values for each monitoring period. Therefore, the system administrator can efficiently manage only the data necessary for system analysis.

The independent database that Performance Management uses to store the operation monitoring data is called a *Store database*.

The following figure shows an overview of management of performance data collected from the monitoring agents.

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Figure 4-12: Overview of management of performance data collected from the monitoring agents
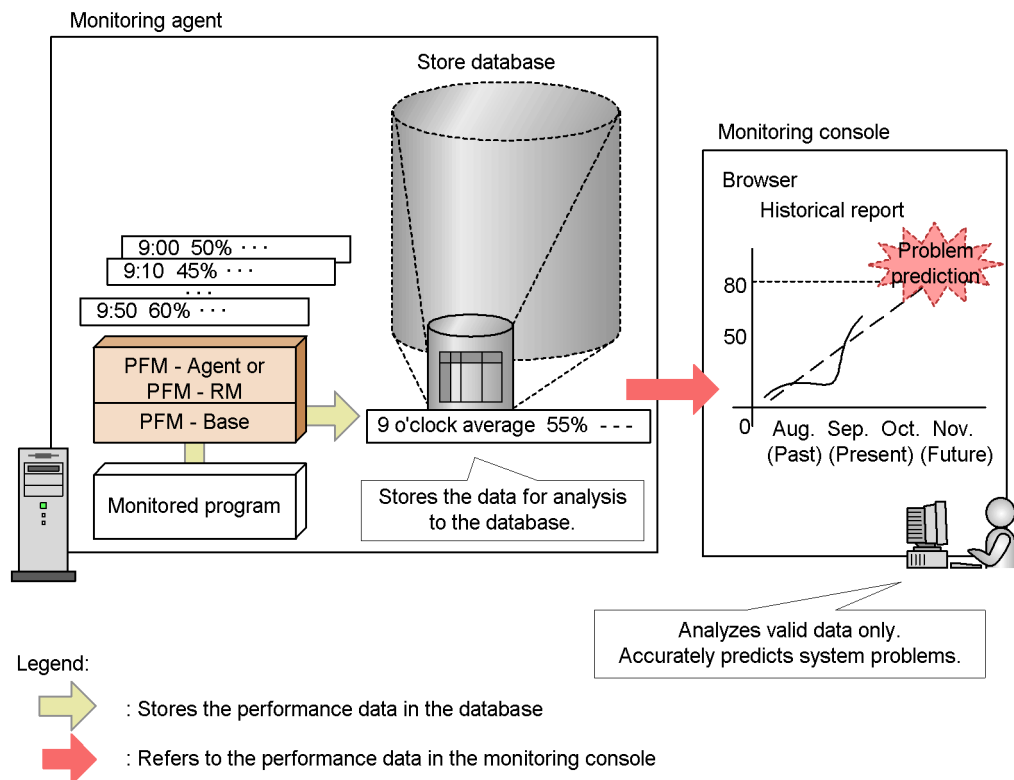
You can specify how to record performance data into the Store database in Performance Management. You can specify the following items in PFM - Web Console:

- Whether to record the collected performance data into the Store database

- Collection intervals for performance data

- An offset value to distribute the load when collecting performance data

- Judgment conditions for recording performance data into the Store database

- Retention periods for performance data

The data recording method varies depending on the records. For details on how to record each record, see the appropriate chapters (the default value and changeable value of each record) of each PFM - Agent or PFM - RM manual.

Point:

It is not necessary to save the monitoring record of the alarm settings into the Store database. However, when an alarm event occurs, you can check the status of the system by checking the history of the monitoring record; so Hitachi recommends that you save the records into the Store database.

The following describes the performance data management function.

(1) For real-time data

In the case of real-time data, the system does not store the collected performance data into the Store database. The following describes the start time of the performance data collection in the case of real-time data.

(a) Collection start times for real-time data

In the case of real-time data, the system does not store the collected performance data into the Store database. In this case, the time PFM - Agent or PFM - RM is started determines the collection start time for performance data.

Refer to the following examples:

An example of the collection start times for real-time data

If you specify the collection intervals of the performance data as 180 seconds (three minutes) with the Content Index Detail (PD_CIND) record of PFM - Agent for Platform (Windows), and start PFM - Agent for Platform at 18:31:00, the first data collection starts at 18:31:00. The next data collection starts at 18:34:00, that is, three minutes after the previous collection as per the data collection interval. The following figure shows an example of the collection start times for real-time data.

Figure 4-13: Example of the collection start times for real-time data
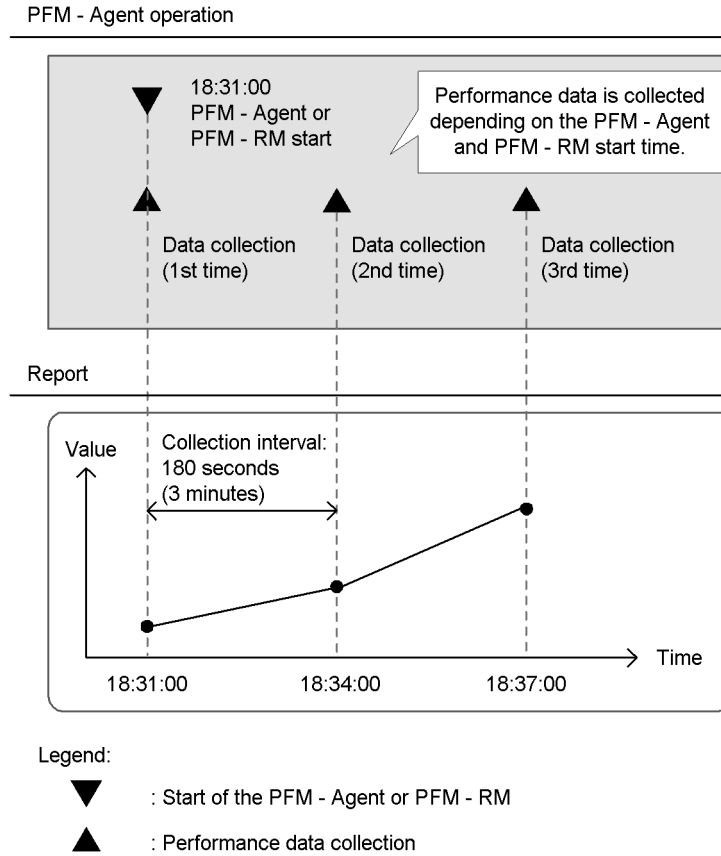
(b) How to store real-time data

The Store database does not store real-time data.

(2) For historical data

In the case of historical data, the Agent Store or Remote Monitor Store service stores the collected performance data into the Store database.

The following figure shows the process flow up until the Store database stores the performance data.

Figure 4-14: Process flow until the Store database stores the performance data
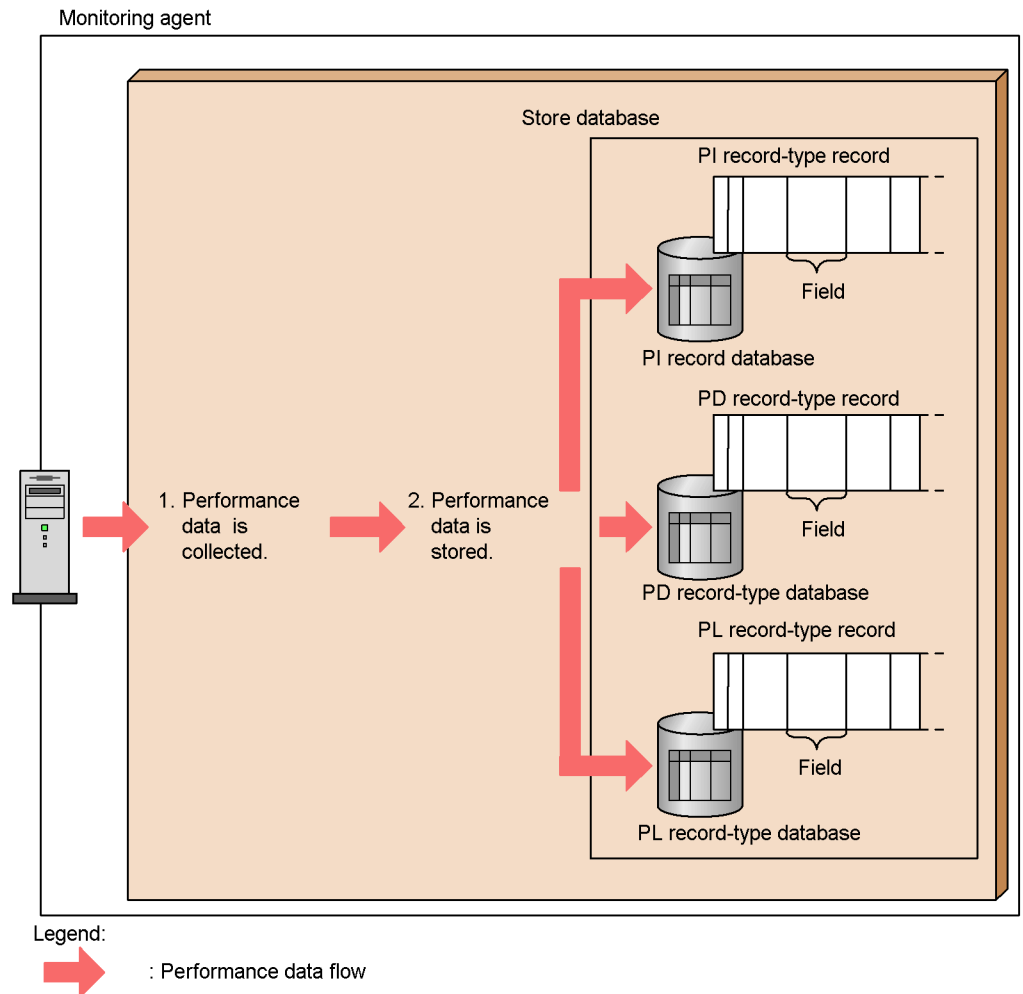
Flow of processing:

1. The performance data is collected.

    The Agent Collector or Remote Monitor Collector service collects the
    performance data from the monitoring target program and the data is managed in
    a record format.

2. The performance data is stored.

    The Agent Store or Remote Monitor Store service saves the collected
    performance data into the Store database. For PI type records, the Agent Store

service stores the collected data in summarized form. For PD and PL type records, the collected data is stored in the same state as it was collected.

The default value of the performance data collection intervals varies depending on the records. For details, see the appropriate chapters that describe records in each PFM - Agent or PFM - RM manual.

The following describes the collection start time and collection method of the performance data for historical data.

(a) Collection start times for historical data

For the collection start times of historical data, based on 00:00:00 A.M. Greenwich Mean Time (GMT), the collection intervals (Collection Interval) of the performance data and the value of the collection start time offset (Collection Offset) determine the start time of the performance data collection.

To set the collection start time:

1. Convert the start time of PFM - Agent or PFM - RM to Greenwich Mean Time (GMT).

2. Advance the time by the interval value (Collection Interval) from 00:00 GMT until the time determined in step 1 is exceeded.

3. Convert the time determined in step 2 to your local time.

   The converted time is the collection start time.

   Starting from the set time, data is collected at intervals of the Collection Interval value.

Note: If you specify `Collection Offset`, the `Collection Offset` value will be added to the collection start time determined in step 3.

The following shows examples of setting the collection start time:

Collection start time: example 1

   This subsection provides an example for when you set the time to the following conditions:

   • Collection Interval = 28,800 seconds (8 hours)

   • Collection Offset = 0

   • Service start time: 13:00

   To specify this setting:

   1. Convert the start time of PFM - Agent or PFM - RM to Greenwich Mean Time (GMT).

      Collection starts at 13:00 Japan time, which corresponds to 4:00 GMT.

2.   Advance the time by the interval value (Collection Interval) from 00:00 GMT until the time determined in step 1 is exceeded.

Because the collection interval is 8 hours, the time when the value first passes 4:00, the time becomes 08:00 GMT.

3.   Convert the time determined in step 2 to Japan time.

08:00 GMT corresponds to 17:00 Japan time. This marks the collection start time. After that, the performance data is collected every 8 hours (01:00 the next day, then 09:00, 17:00...)

Collection start time: example 2

This subsection provides an example for when you set the time to the following conditions:

- Collection Interval = 28,800 seconds (8 hours)
- Collection Offset = 60 seconds (1 minute)
- Time to start the service = 13:00

To specify this setting:

1.   Convert the start time of PFM - Agent or PFM - RM to Greenwich Mean Time (GMT).

Collection starts at 13:00 Japan time, which corresponds to 4:00 GMT.

2.   Advance the time by the interval value (Collection Interval) from 00:00 GMT until the time determined in step 1 is exceeded.

Because the collection interval is 8 hours, the time when the value firstly passes 4:00 is 08:00 GMT.

3.   Convert the time determined in step 2 to Japan time.

08:00 GMT corresponds to 17:00 Japan time.

Because the Collection Offset has been specified, the collection start time is 17:01, which is 17:00 plus 1 minute of the collection offset value.

After that, the performance data is collected every 8 hours (01:01 the next day, then 09:01, 17:01...)

The following shows an example of the collection start times for historical data.

Example of the collection start times for historical data

In this example using the System Overview (PI) record of PFM - Agent for Platform (Windows), the set value of the Collection Interval is 43,200 seconds (12 hours) and the Collection Offset is 10 seconds.

If PFM - Agent or PFM - RM starts at 06:27:15, August 2nd Japan time (21:27:15

on August 1st GMT), the first data collection takes place at 09:00:10, August 2nd Japan time (00:00:10 GMT). The next data collection takes place 12 hours later, which is at 21:00:10 Japan time (12:00:10 GMT). The following figure shows an example of the collection start times for historical data.

Figure 4-15: Example of the collection start times for historical data

Time

1. 00:00:00 A.M. Greenwich Mean Time used as the basis for the collection time

Greenwich Mean Time
8/1 12:00   8/2 00:00   8/2 12:00   8/3 00:00

Japan time
8/1 21:00   8/2 09:00   8/2 21:00   8/3 09:00

PFM - Agent or
PFM -RM operation

2. Because the collection interval is 12 hours, midnight and noon of the Greenwich Mean Time become the basis for the collection time.

Japan time
8/2   6:27:15
PFM - Agent or PFM -RM operation

Collection interval:
43,200 seconds
(12 hours)

Offset:
10 seconds

3. Collects the data at the time after the offset has been added as specified by the Collection Offset

Data collection (1st time)   Data collection (2nd time)   Data collection (3rd time)

Report

Value

Time

09:00:10   21:00:10   09:00:10

Legend:
▼ : Start of the PFM - Agent or PFM- RM
▲ : Performance data collection

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(b) How to store the data

The following describes how to store the performance data of the records of the PI, PD, and PL records types:

- For the PI record type

  The system collects the performance data according to a collection interval that you set in the window of PFM - Web Console. However, the performance data is stored in the Store database, starting with the second collection after PFM - Agent or PFM - RM is started. The Store database does not store the data during that first collection.

- For the PD and PL record types

  The system collects the performance data according to a collection interval that you set in the window of PFM - Web Console. The performance data is stored in the Store database, starting with the first collection after PFM - Agent or PFM - RM is started.

As a default setting, the Store database stores the performance data of only some records. To store the performance data into the Store database, specify the setting in the window of PFM - Web Console for each record. For details on setting procedure, see the chapter that describes management of operation monitoring data in the *Job Management Partner 1/Performance Management User's Guide*.

(3) Storing difference data

Some of the values stored in each field of the PI, PD, and PL record types exhibit a difference from the previous collection data. This difference data is called *delta*. Refer to the following examples:

An example of storing difference data

When the delta section of the field that measures the total I/O counts since the system starts is **Yes**, the system stores the I/O counts between the previous collection time and the current collection time. For instance, assume that you set the value of the collection intervals (Collection Interval) of the performance data to 3,600 seconds (1 hour).

If PFM - Agent or PFM - RM starts at 06:27:15 on August 2nd (21:27:15 on August 1st GMT), the first data collection takes place at 07:00:00 on August 2nd Japan time (22:00:00 in the GMT). The next data collection takes place at 08:00:00 Japan time (23:00:00 on August 1st GMT). After that, based on the data collected at 07:00:00 and 08:00:00 Japan time, the system creates difference data, and stores this data into the Store database. The following figure shows an example of storing the difference data.

Figure 4-16: Example of storing difference data
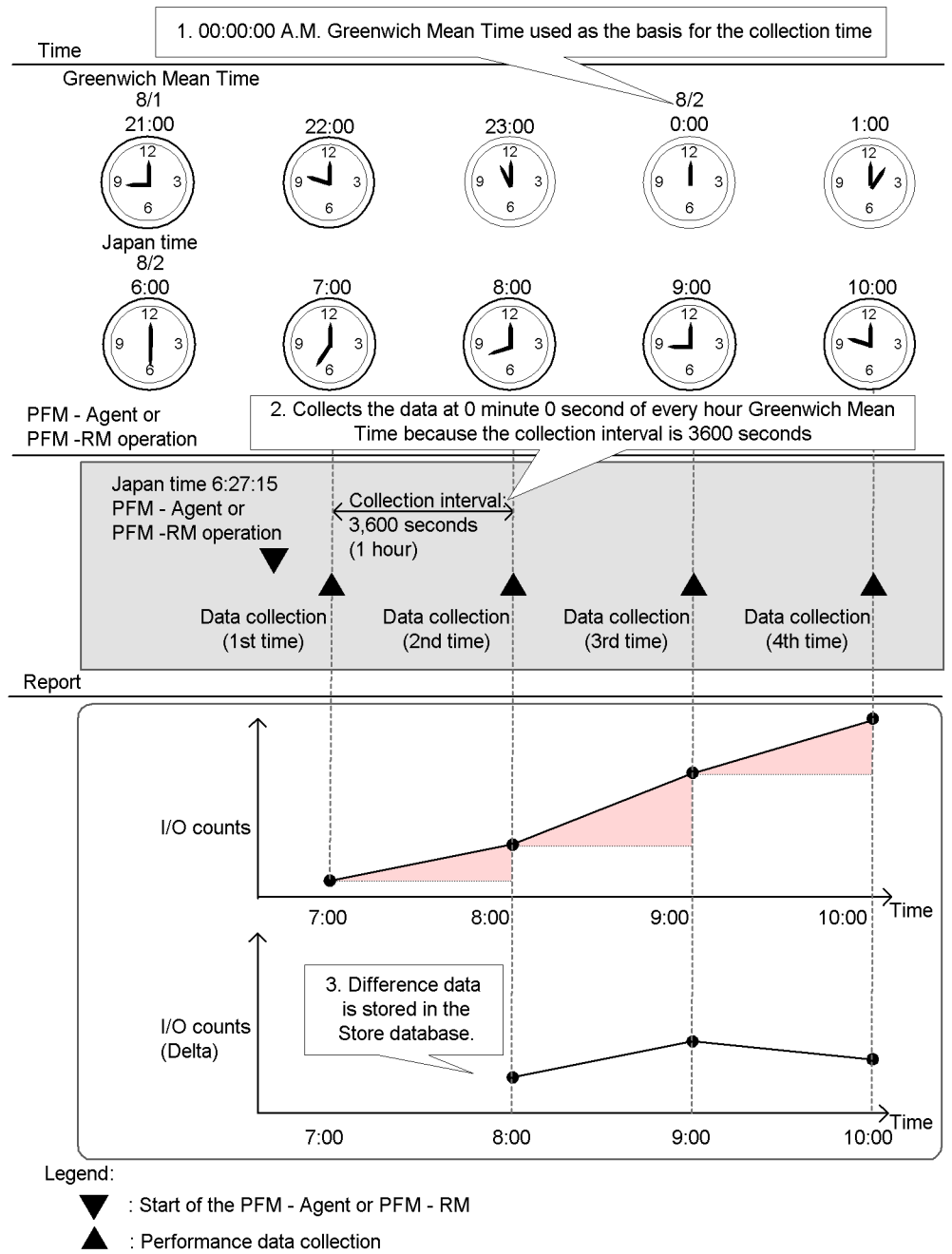
For details on how to determine if the values in each field are delta values or not, see the relevant chapters (tables of each record field) of each PFM - Agent or PFM - RM manual. In the table of each record field, the fields that have Yes in the delta section store the differences from the previous measured value.

4.2.4 Summarizing the performance data

The data retention conditions and summary methods used for performance data depend on the type of record being stored. This subsection describes the storage conditions you can set and the summary methods used for each record type.

(1) Summary record (PI record)

This database automatically summarizes the performance data at a certain time (on a per-minute, hourly, daily, weekly, monthly, and yearly basis). The system summarizes the fields containing the value in terms of average and total values. The performance data is summarized for each record, each time it is collected. This database automatically summarizes the performance data at a certain time (on an hourly, daily, weekly, monthly, and yearly basis). The system summarizes the fields containing the value in terms of average and total values. Summarizing takes place each time the minute data is stored.

The following figure shows an example of summarizing the PI record type.

Figure 4-17: Example of summarizing the PI record type

First data collection

Record on a per minute basis

Collection time	Performance data
For 00 minute	10
For 01 minute	
For 02 minutes	

For 59 minutes	

Record on an hourly basis

Collection time	Performance data	Total value	Data collection count
For 1 hour	10	10	1
For 2 hours			
For 3 hours			

For 24 hours			

Record on a daily basis

Collection time	Performance data	Total value	Data collection count
For 1 day	10	10	1
For 2 days			
For 3 days			

For 31 days			

Record on a weekly basis

Collection time	Performance data	Total value	Data collection count
For 1 week	10	10	1
For 2 weeks			
For 3 weeks			

For 5 weeks			

Record on a monthly basis

Collection time	Performance data	Total value	Data collection count
For 1 month	10	10	1
For 2 months			
For 3 months			

For 12 months			

Record on an yearly basis

Collection time	Performance data	Total value	Data collection count
For year 2005	10	10	1
For year 2006			
For year 2007			

For year 200x			

Second data collection

Record on a per minute basis

Collection time	Performance data
For 00 minute	10
For 01 minute	20
For 02 minutes	

For 59 minutes	

Record on an hourly basis

Collection time	Performance data	Total value	Data collection count
For 1 hour	15	30	2
For 2 hours			
For 3 hours			

For 24 hours			

Record on a daily basis

Collection time	Performance data	Total value	Data collection count
For 1 day	15	30	2
For 2 days			
For 3 days			

For 31 days			

Record on a weekly basis

Collection time	Performance data	Total value	Data collection count
For 1 week	15	30	2
For 2 weeks			
For 3 weeks			

For 5 weeks			

Record on a monthly basis

Collection time	Performance data	Total value	Data collection count
For 1 month	15	30	2
For 2 months			
For 3 months			

For 12 months			

Record on an yearly basis

Collection time	Performance data	Total value	Data collection count
For year 2005	15	30	2
For year 2006			
For year 2007			

For year 200x			

Legend:

→ : Summarized by average value

With PI-type records, data is categorized according to the length of time covered by each record. Data of the category Minute, Hour, Day, Week, or Month is deleted when

the specified retention period is exceeded. Data of the category Year is not deleted. The following table describes the PI record-type categories.

Table 4-8: PI record-type categories

Category	Description
Minute	A record stored on a per-minute basis. A maximum of 60 records per hour, 1,440 records per day, 10,080 records per week, 44,640 records per month, or 527,040 records per year are stored. These records are deleted when the specified retention period is exceeded.
Hour	A record stored on an hourly basis. A maximum of 24 records per day, 168 records per week, 744 records per month, or 8,784 records per year are stored. These records are deleted when the specified retention period is exceeded.
Day	A record stored on a daily basis. A maximum of 7 records per week, 31 records per month, or 366 records per year are stored. These records are deleted when the specified retention period is exceeded.
Week	A record stored on a weekly basis. A maximum of 5 records per month or 52 records per year are stored. These records are deleted when the specified retention period is exceeded.
Month	A record stored on a monthly basis. A maximum of 12 records per year are stored. These records are deleted when the specified retention period is exceeded.
Year	A record stored on a yearly basis. One record per year is stored. These records are retained indefinitely.

(2) Non-summary record (PD record and PL record)

Performance Management does not summarize the performance data in PD and PL-type records when storing them in the database. The data retention conditions for PD and PL-type records are set differently for each version of the Store database. With Store 1.0, you specify the number of records to store in the database. With Store 2.0, you specify a retention period, as a number of days, in the same manner as for PI-type records. In both versions, data that no longer meets the data retention conditions is deleted automatically. For details on the different versions of the Store database, see *4.2.5 Store database storage methods*.

4.2.5 Store database storage methods

The Store database that stores the operation monitoring data collected by the monitoring agent is available in two versions, Store 1.0 and Store 2.0. Store 2.0 can be used with version 08-11 or later of PFM - Manager or PFM - Base combined with version 08-00 or later of PFM - Agent.

PFM - RM can only use Store 2.0.

The two versions of the Store database differ in how they store operation monitoring data.

(1) Storage method used with Store 1.0

The following figure shows the storage method used with Store 1.0. This example shows the storage of PI records.

Figure 4-18: Storage method used with Store 1.0
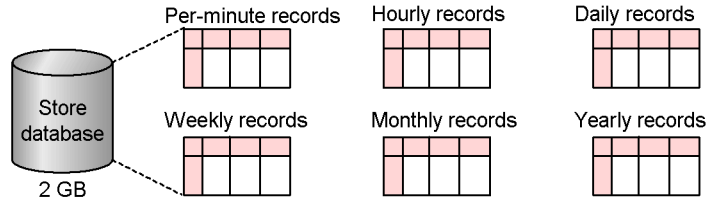
With Store 1.0, all of the records of each record type (PI/PD/PL) are stored as operation monitoring data in a single database. The maximum capacity of the database is 2 GB.

(2) Storage method used with Store 2.0

The following figure shows the storage method used with Store 2.0. This example shows the storage of PI records.

Figure 4-19: Storage method used with Store 2.0
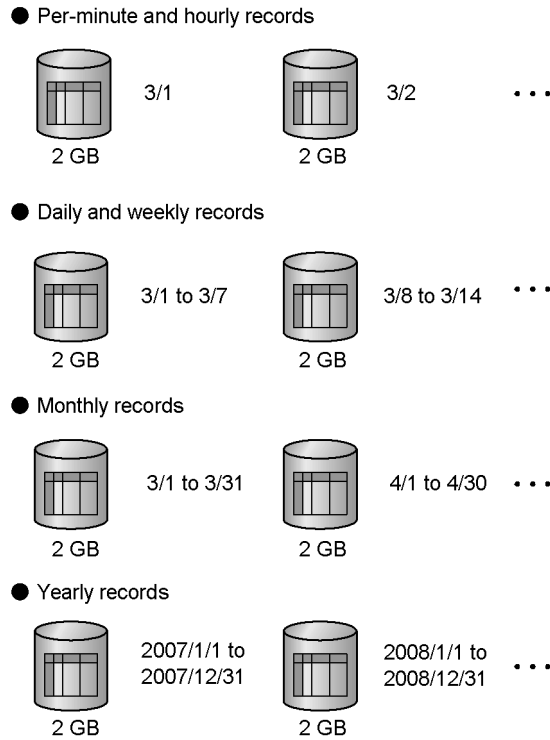
With Store 2.0, operation monitoring data is stored in the Store database in multiple files, each covering a specific time period (division period) determined by the summarization category and record type of the data. Each database storing data of a specific division period is called a *unit database*. The following table lists the division period for each summarization category and record type.

Table 4-9: Summarization categories and division periods

Summarization category	Division period
Per-minute, hourly, and PD/PL records	Daily
Daily and weekly records	Weekly
Monthly records	Monthly
Yearly records	Yearly

With Store 2.0, the 2 GB limit applies to each database storing data of a specific division period, not to all databases. For this reason, a greater amount of operation

monitoring data can be stored than when Store 1.0 is used. Records collected on a per-minute or hourly basis are kept for a maximum of one year. Records collected on a daily, weekly, or monthly basis are kept for a maximum of 10 years. Records collected on a yearly basis are kept indefinitely. This allows for long-term analysis of the system's operating status.

4.2.6 Functions specific to Store 2.0

(1) Backup of the Store database

By regularly backing up the operation monitoring data, you can reduce the risk of data loss in the event of an error. In addition to these regular backup operations, Store 2.0 allows partial backup of data in smaller units.

The following figure illustrates the partial backup of operation monitoring data.

Figure 4-20: Partial backup of operation monitoring data

With partial backup, you can specify the target of the backup operation, such as the data collected over a specific time period, data of a specific record type, or data collected during a specific month or year. For example, as shown in the figure above, you can carry out a partial backup of only the PD_PDI records in the PD database that were stored yesterday and the day before, or only monthly records in the PI database that contain data associated with yesterday and the day before. By performing a partial backup, you can reduce the time taken by the backup process and manage data files more efficiently.

For details on how to perform a partial backup, see the chapter that describes backups and restoration operations in the *Job Management Partner 1/Performance Management User's Guide*.

(2) Viewing historical operation monitoring data

When using Store 2.0, you can view operation monitoring data whose retention period has elapsed by importing it from backup data. The following figure illustrates an example of viewing operation monitoring data.

Figure 4-21: Viewing operation monitoring data
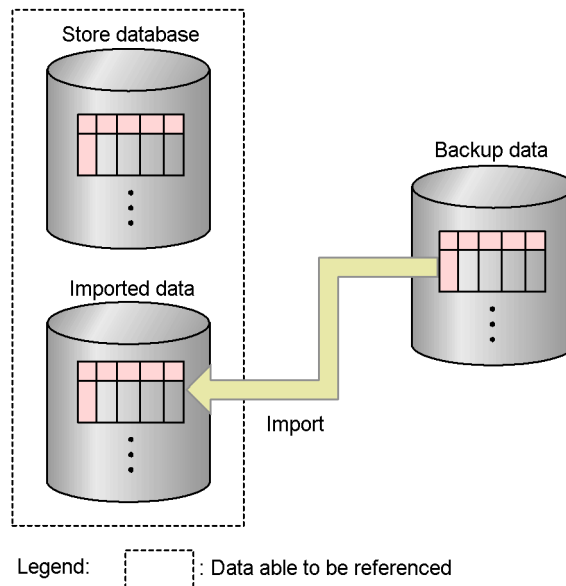
As the figure shows, the Store database can store the imported backup data parallel with the current operation monitoring data, allowing both the data in the database and the imported data to be viewed. Because the imported data is managed independently of the data in the Store database, it will not be deleted even when the retention period specified in the Store database configuration is exceeded. This means that the imported data is available for reference at any time.

Importing backup data differs from restoring it in the following ways:

- Importing data does not delete the data already stored in the Store database.

- Imported data is retained past the specified retention period.

Use the `jpctool db import` command to import backup data, specifying either a full or additional import.

- Full import:

  Use the `jpctool db import` command to perform a full import of backup data.

- Additional import:

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Use the `jpctool db import` command with the `-add` option specified to perform an additional import. This process adds the backup files to the files already in the import directory. However, if you perform an additional import of backup data that is older than the data already in the import directory, the imported data overwrites the newer data and is reflected from that point in summary records. Therefore, when using the additional import option, import older data first.

For details on how to import data, see the chapter that describes management of operation monitoring data in the *Job Management Partner 1/Performance Management User's Guide*.

You can change the import directory by using the `jpcconf db define` command while the Agent Store and Remote Monitor Store services are stopped. You can also delete the data in the import directory by executing the `jpctool db import` command with the `-clear` option specified.

You cannot import backup data with a different product ID or Store version. If the data model of the backup data is an older version than that used by the Store database, you can use the `jpctool db dmconvert` command to upgrade the data model of the backup data, and then you can import it.

4.2.7 Flow of Store 2.0 installation

The following figure shows the flow of the installation process in preparation for using Store 2.0.

Figure 4-22: Flow of Store 2.0 from installation to operation

Install Store 2.0
When performing a new installation of PFM - Agent 08-11 or
later or PFM - RM [(1)]
When migrating from Store 1.0 [(2)]

Begin normal operation [(3)]

Backing up data [(4)]

Acquiring data in the event of an error [(5)]

Legend: [ ]: See the indicated step

(1) When performing a new installation of PFM - Agent version 08-11 or later or PFM - RM

To perform a new installation and begin operation with Store 2.0:

1. Estimate system resource requirements and plan the retention periods.

    Make sure that the execution environment can provide the system resources required to install Store 2.0. The system resources you need to estimate are as follows:

    - Hard disk space

    - Number of files

    - Number of files opened by each process

    Specific resource requirements depend on the retention period settings. Consider the resources available in the execution environment when planning the retention periods. For details on estimating system resource requirements, see the section about system estimates in the appendixes of each PFM - Agent or PFM - RM manual.

2. Set up directories.

    Set up the directories used by the Agent Store and Remote Monitor Store services,

such as the Store directory. This step is only necessary if you intend to use a directory other than the default. Use the `jpcconf db define` command to specify the directories used by the Agent Store and Remote Monitor Store services.

3.   Set the retention periods.

Set the retention periods you arrived at when estimating resource requirements in step 1. To set the value with PFM - Web Console, start the Agent Store or Remote Monitor Store service.

(2) When migrating from Store 1.0

To migrate from Store 1.0 and begin operation with Store 2.0:

1.   Estimate system resource requirements and plan the retention periods.

Make sure that the execution environment can provide the system resources required for installation of Store 2.0. The system resources you need to estimate are as follows:

- Hard disk space

- Number of files

- Number of files opened by each process

Specific resource requirements depend on the retention period settings. Consider the resources available in the execution environment when planning the retention periods. For details on estimating system resource requirements, see *C.4 Exclusively occupied disk space when using the Store database in PFM - Agent 08-00 or later (Store 2.0)*.

2.   Back up the performance data.

Back up the data from Store 1.0.

3.   Set up directories.

When you migrate to Store 2.0, the Agent Store service might not start if the original directory settings for Store 1.0 are retained. For this reason, you will need to review the directory settings used by the Agent Store service. You can use the `jpcconf db define` command to display and change the directory used by the Agent Store service.

With Store 2.0, the maximum path length of the directories in which the Store database is created and in which backup files are stored is different from Store 1.0. If a relative path is used in the directory settings for Store 1.0, make sure that it does not exceed the maximum path length allowed by Store 2.0 (214 bytes) when converted to an absolute path. If a directory does not meet this condition, modify the directory settings for the Agent Store service before proceeding to step 4.

4. Execute the setup command.

   To transfer to Store 2.0, execute the `jpcconf db vrset -ver 2.0` command.

5. Set the retention periods.

   Set the retention periods you arrived at when estimating resource requirements in step 1. Set the retention periods through PFM - Web Console after starting the Agent Store service.

(3) Beginning normal operation

Start the Agent Store or Remote Monitor Store service and begin using the Store database. This step is the same for Store 1.0.

(4) Backing up data

Because Store 2.0 is capable of managing large volumes of operation monitoring data, it is more efficient to perform partial backups on a regular basis than full backups. Establish a backup plan that performs partial backups at regular intervals, such as once a week.

If you intend to reference backup data by using the import function, Hitachi recommends that you change the directory used for partial backups so that the data you want to import in one go will be backed up in one directory. Hitachi recommends that you change the directory around once a month.

(5) Acquiring data in the event of an error

The larger size of the Store database means that data collection will take longer when Store 2.0 is used. In this case, execute both of the following commands to perform data collection of all data except that in the database.

- `jpcras` *directory-name* `all`
- `jpcras` *directory-name* `all dump`

If the database is not particularly large, you can include data in the database in the data collection by executing the command as follows:

- `jpcras` *directory-name* `all all`

When you execute this command, the database data is collected from the Store directory. If the environment variable `JPC_COLIMPORT` is defined, the database data in the import directory is also collected.

4.3 Functions for alerting the user when the system reaches a critical state

In Performance Management, you can specify the settings to warn the system administrators by email and through the monitoring console when the performance data of a monitoring agent reaches a critical state.

The following describes warning functions when the system reaches a critical state.

4.3.1 Alarm event data

When the performance data of a monitoring agent exceeds a threshold and reaches a critical state, Performance Management provides a function to warn specified staff, such as system administrators.

In Performance Management, this warning is called an *alarm event*. The alarm events issued by PFM - Agent or PFM - RM are sent to PFM - Manager on the connection destination. PFM - Manager integrally manages alarm events sent from PFM - Agent or PFM - RM.

Alarm events notify the system administrators by emails and send notification to the monitoring console that the system has reached a critical state. In Performance Management, this is called an *action*. The system also can automatically execute commands reporting that the system has reached a critical state when an alarm event occurs.

The Master Store service of PFM - Manager stores the alarm event data, as records of the *Product Alarm record type* (*PA record type*), into the Store database.

4.3.2 Alarm event data collection

The following describes the function that collects alarm event data.

(1) How to collect the alarm event data

The Agent Collector service of PFM - Agent or the Remote Monitor Collector service of PFM - RM issues alarm events, when the performance data of a monitoring agent exceeds a threshold. Thresholds are preset in the alarm definition of the monitoring template provided by the Performance Management system.

The threshold that triggers the alarm event can also be set for a group agent in PFM - RM. If you set the threshold for a group agent, you can use the merged value of the performance data from multiple monitored targets to issue the alarm event. For example, you can use the CPU usage average for multiple monitored targets to issue an alarm event.

The following figure shows the flow of the warning processing that takes place when a monitored program reaches a critical state.

Figure 4-23: Flow of the warning processing when the monitored program has reached a critical state
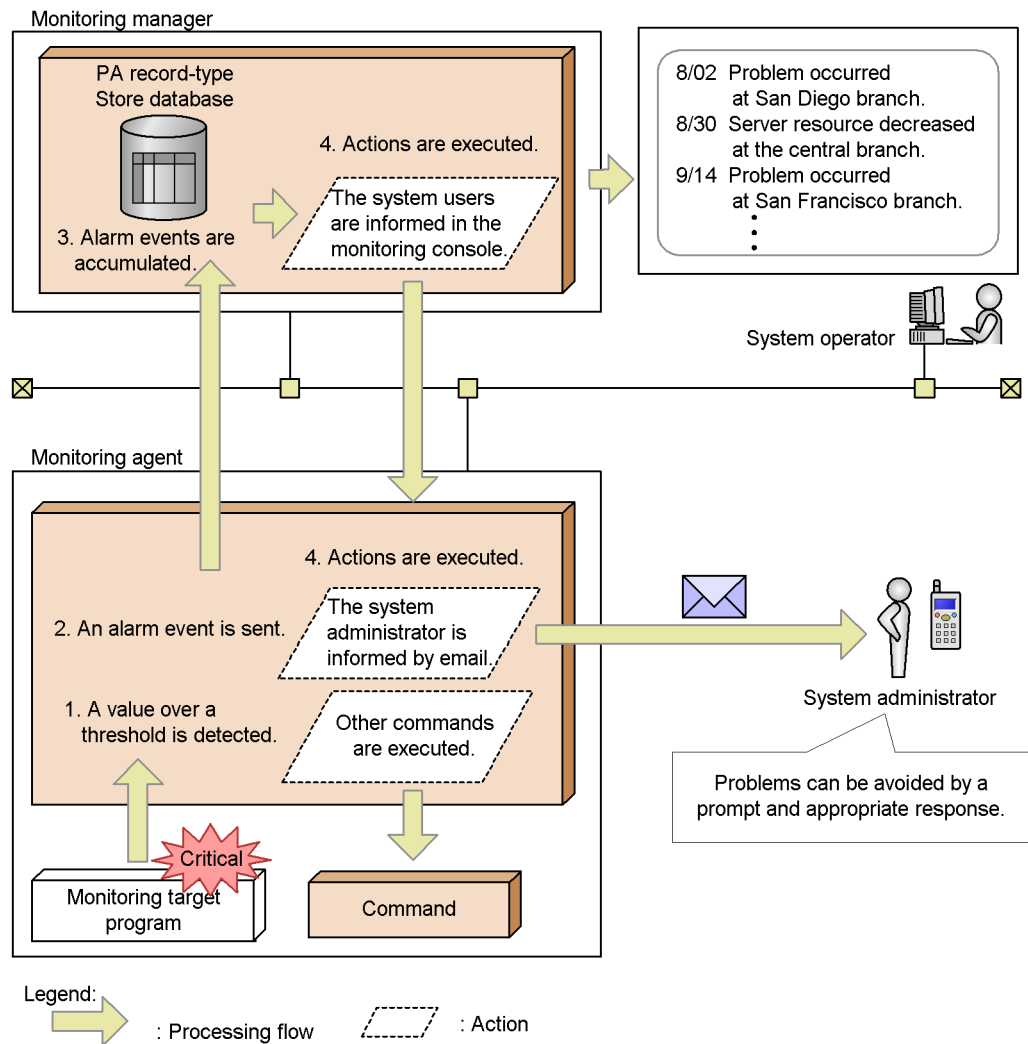
Flow of processing:

1. A value over a threshold is detected.

   PFM - Agent or PFM - RM issues an alarm event when the value of the performance data exceeds a threshold.

2. An alarm event is sent.

   The system sends the alarm event issued by PFM - Agent or PFM - RM to PFM

- Manager. The alarm event information sent to PFM - Manager can be checked from the Event Monitor window of PFM - Web Console.

3. Alarm events are accumulated.

The Store database of PFM - Manager stores the alarm event data sent from PFM - Agent or PFM - RM. The alarm event information accumulated in the Store database of the PFM - Manager can be checked from the Event History window of PFM - Web Console.

4. Actions are executed.

The system executes actions defined in the issued alarm event. The system warns the system administrators by executing actions, such as informing them by icons in the window of PFM - Web Console or by sending emails. Also, a command can be executed to inform the system administrators that an alarm event was issued.

Point:

The monitoring agent executes actions, such as sending emails or executing commands, according to the monitoring agent settings. The monitoring manager can also execute the actions.

4.3.3 Summarizing the alarm event data and the maximum number of records

The system does not summarize the alarm event data. When the number of records has reached the maximum, the system overwrites the alarm event data starting from the oldest.

You can change the maximum number of records in the window of PFM - Web Console. For details on how to set the maximum number of records, see the chapter that describes management of operation monitoring data in the *Job Management Partner 1/Performance Management User's Guide*.

4.4 Functions for detecting faults in the operation monitoring system itself

Performance Management provides a function that monitors the operating status of the monitoring agent and the host on which the monitoring agent is running. This is called the *health check function*. By using this function, you can confirm whether the monitoring agent is monitoring its targets correctly and whether the host of the monitoring agent is operating. If PFM - RM is used, you can confirm whether a monitored host is running. By defining alarms for the various operating statuses of the Agents and hosts, the system can issue alarm events and trigger an action such as sending an email when the health check function detects that PFM - Agent or PFM - RM is malfunctioning or detects that a host is down.

Performance Management also provides a function you can use to view the detailed operating status of Performance Management services running in the operation monitoring system. This is called the *status management function*.

The health check function uses the status management function to monitor the operating status of monitoring agents. For this reason, the version of the monitoring agent monitored by the health check function must support the status management function, and the status management function must be active. There are no prerequisites associated with monitoring the operating status of a host. The following figure shows an overview of checking operating statuses by using the health check function.

Figure 4-24: Overview of checking the operating status by using the health check function (in PFM - Agent)
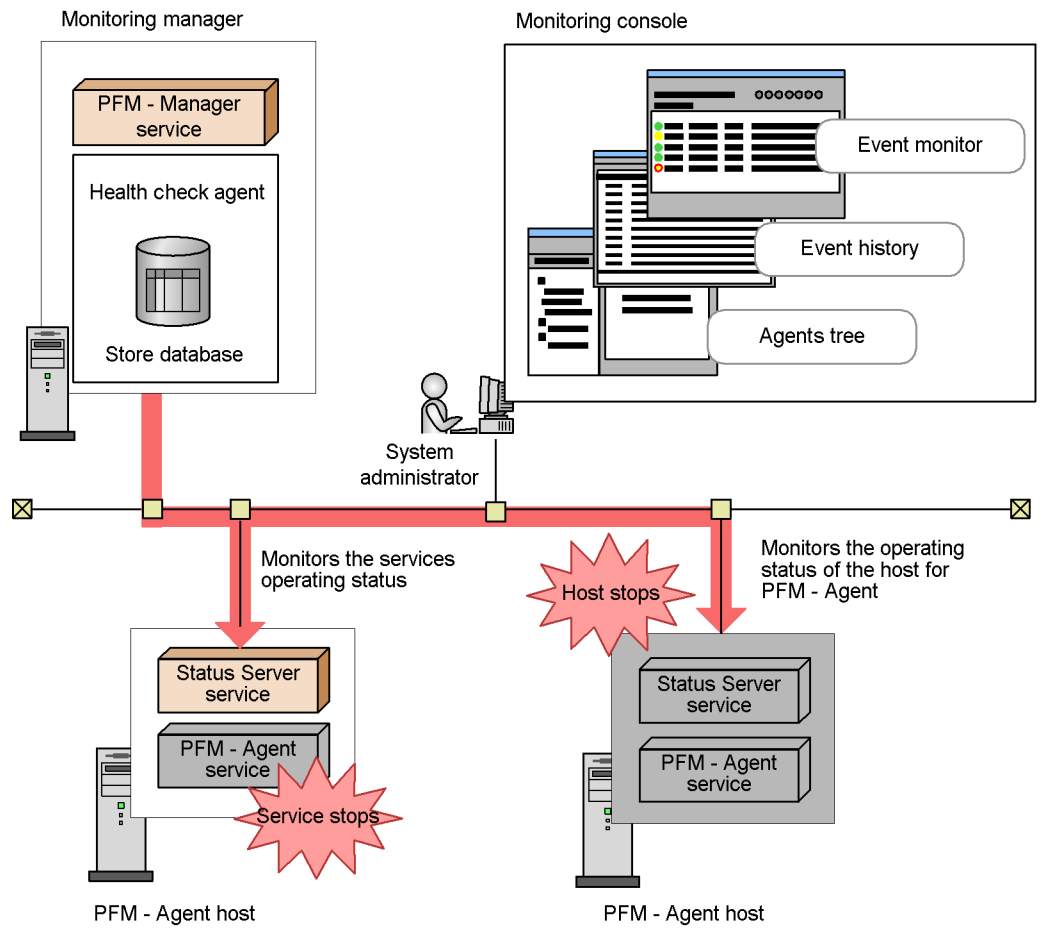
Figure 4-25: Overview of checking the operating status by using the health check function (in PFM - RM)
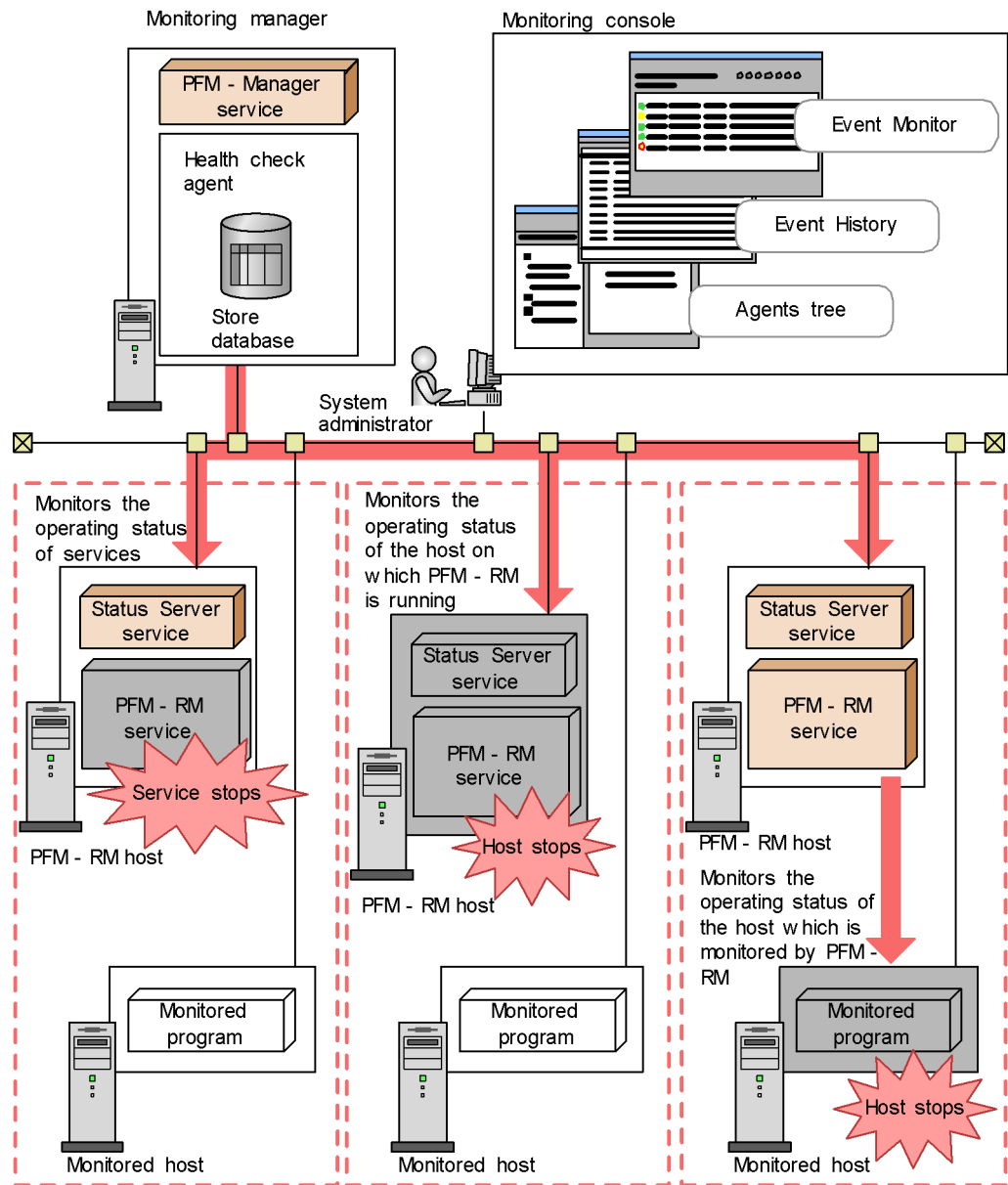
The health check function uses a monitoring approach consisting of the following two tiers:

■ Monitoring the operating status of the host running the monitoring agent:

The health check function monitors the operating status of a host running PFM - Agent or PFM - RM, and the operating status of a host monitored by PFM - RM. You can check the operating status from PFM - Web Console. The following software versions support this functionality:

- Version 08-11 or later of PFM - Manager and PFM - Web Console

- Any version of PFM - Agent or PFM - RM

■ Monitoring the operating status of the monitoring agent service:

In addition to the operating status of the host where PFM - Agent or PFM - RM is running, and the operating status of the monitored host for PFM - RM, the health check function also monitors the operating status of Agent Collector, Remote Monitor Collector, Agent Store, and Remote Monitor Store services. Depending on the settings, the health check function can also monitor the Action Handler service on the same monitored host. You can check the results from PFM - Web Console. The following software versions support this functionality:

- Version 08-11 or later of PFM - Manager and PFM - Web Console

- Version 08-00 or later of PFM - Agent, or PFM - RM, with the status management function enabled

Reference note: Health check for PFM - RM

For PFM - RM, you can monitor the following three operating statuses:

- Operating status of the host running PFM - RM

- Operating status of the PFM-RM services

- Operating status of the monitored host of PFM-RM

The operating status of a monitored host for PFM - RM is monitored as the operating status of the corresponding remote agent. You cannot monitor the operating status of a group agent.

You can monitor the operating status of the monitored host for PFM - RM, regardless of whether you set the health check function to the host monitoring level or the service monitoring level. However, if this function is set to the service monitoring level, the operating status of the monitored host for PFM - RM varies, depending on the status of the Remote Monitor Store or Action Handler service. If you want to monitor the operating status of the monitored host for PFM - RM, you must enable the status management function of PFM - RM, even when setting the health check function to the host monitoring level.

For details on monitoring the operating status of the host monitored by PFM -RM,

see the chapter that describes detecting problems in Performance Management in the *Job Management Partner 1/Performance Management User's Guide*.

The health check function uses a dedicated agent called a *health check agent* to monitor the operating status of monitoring agents and the operating status of hosts on which monitoring agents are running. When the health check function is enabled, the health check agent starts when PFM - Manager starts. The health check agent checks the operating status of monitoring agent services and their hosts at regular intervals and displays the results in PFM - Web Console. By viewing the results, the system administrator can be made aware of changes in the operating status. For details on how to configure the health check function and how to check the operating statuses, see the chapter that describes detecting problems in Performance Management in the *Job Management Partner 1/Performance Management User's Guide*.

The monitoring results of the health check function are issued as events (health check events) and also collected in the form of performance data. This allows you to set alarms and assign actions to those alarms, thus associating changes in the agent operating status with an action such as issuing a JP1 event, executing a command, issuing an SNMP trap, or sending an email. By using JP1 events and SNMP traps, you can link with an integrated management product like JP1/IM or NNM.

Depending on how the health-check agent is configured, the results of operating status monitoring can be stored in the Store database. You can then use the reporting function of the health check agent to view current and historical operating status information. The manner in which the health check agent stores data in the Store database, such as the Store version and the data retention period, can be set and managed in the same way as for ordinary performance data. For details on how to manage the collected data, see the chapter that describes management of operation monitoring data in the *Jo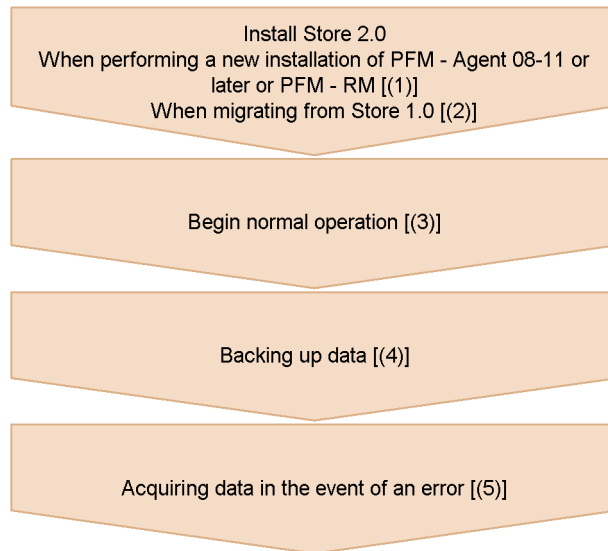b Management Partner 1/Performance Management User's Guide*. The following figure shows how the monitoring results data of the health check function is managed.

Figure 4-26: Data management of the monitoring results of the health check function
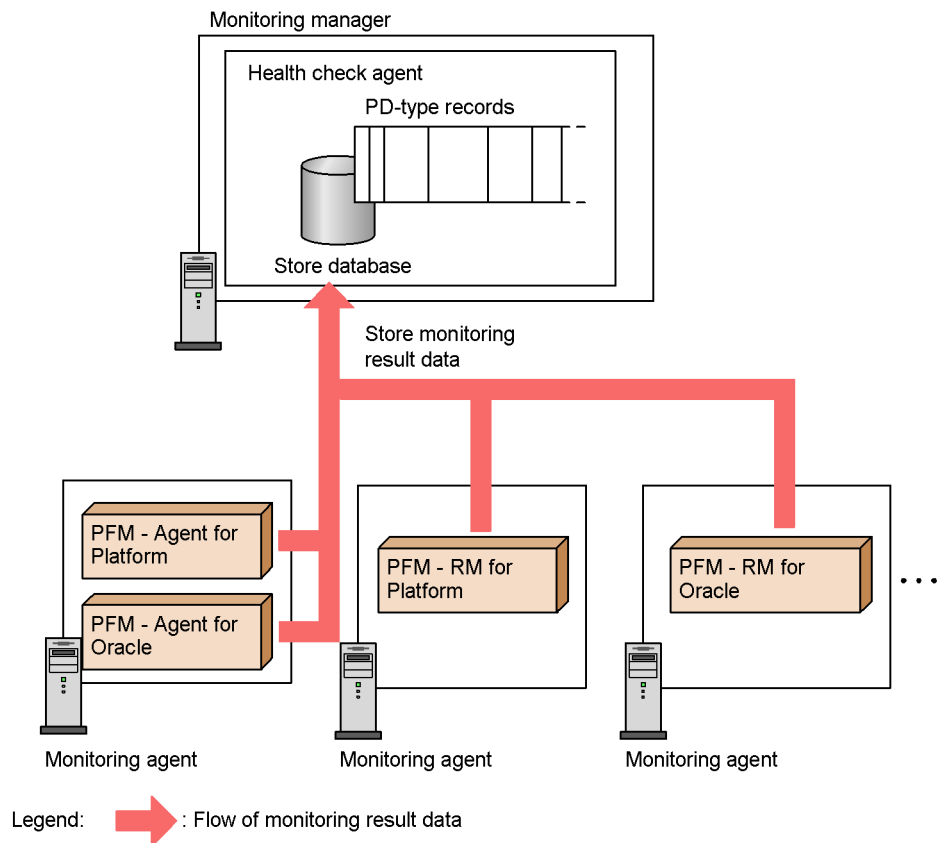
Alternatively, you can monitor the status of the Performance Management services by using only the status management function. When the status management function is enabled, all services that run on PFM - Manager and PFM - Base register their status in a status file. The system administrator can then learn the status of each service by using the status management service (Status Server service) to check the contents of this file. To check the contents of the status file, you execute an operation command (the `jpctool service list`). The following figure gives an overview of using the status management function to check service statuses.

Figure 4-27: Overview of checking service statuses using the status management function
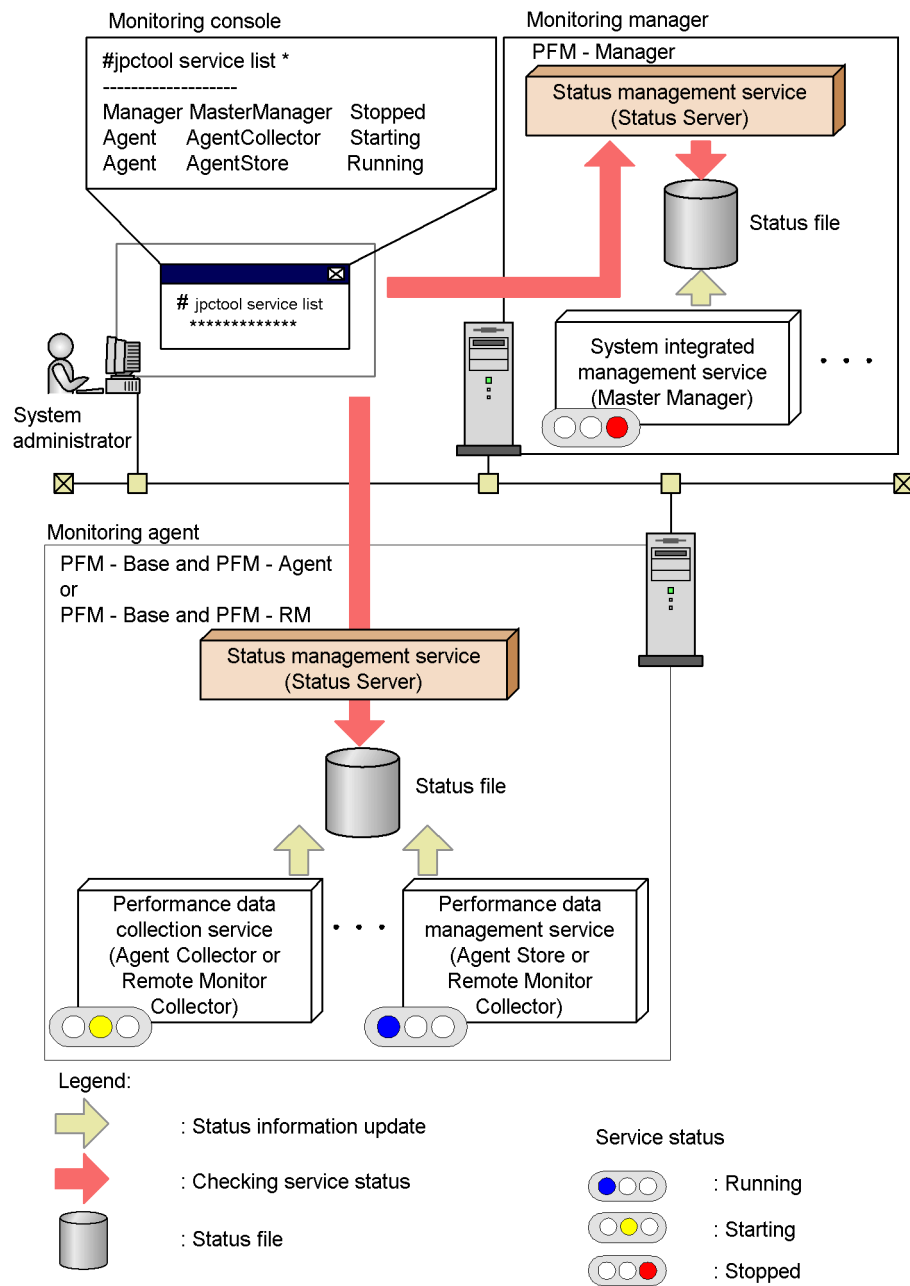
For details on how to configure the status management function, see the chapter that describes detecting problems in Performance Management in the *Job Management Partner 1/Performance Management User's Guide*.

Reference note: Status management when the status management function is disabled:

If the status management function is disabled, PFM - Manager determines the service status based on whether attempts to communicate with PFM - Agent or PFM - RM yields a response. In addition, PFM - Manager centrally manages network information such as the IP addresses and port numbers for PFM - Agent or PFM - RM. Therefore, the service status cannot be checked if communication with PFM - Manager is not possible because an error has occurred, the service is starting, or for some other reason the status also cannot be checked when PFM - Agent or PFM - RM is running in standalone mode.

If the status management function is disabled, you might be unable to check the status of a service that is starting or stopping when you execute the `jpctool service list` command. If it is necessary to check the service status, enable the status management function. The following figure shows an example of checking the status of Performance Management with the status management function disabled.

Figure 4-28: Example when the status management function is disabled

Monitoring console

When PFM - Manager is stopped, the PFM - Agent and PFM - RM statuses are unknown.

```
#jpctool service list
-------------------
Manager  NameServer      Stopped
Agent    AgentCollector  ???
Agent    AgentStore      ???
```

```
# jpctool service list
*************
```

System administrator

Monitoring manager

PFM - Manager

Problem

Service configuration information management (Name Server)

Performance data collection service (Agent Collector or Remote Monitor Collector)

Performance data management service (Agent Store or Remote Monitor Collector)

PFM - Base and PFM - Agent
or
PFM - Base and PFM - RM

Monitoring agent

Legend:

: Monitoring service status

: Checking service status

Service status

: Running

: Starting

: Stopped

For details of the `jpcctrl list` command, see the chapter about commands in the manual *Job Management Partner 1/Performance Management Reference*.

4.5 Functions for automatically restarting operation monitoring system services

As an insurance against abnormal termination of the PFM services, Performance Management provides a function that allows you to automatically restart the services. The Status Server service of each host uses the status management function to monitor the PFM services within the same host, and automatically restarts the PFM service when it detects an abnormal termination. Even when abnormal termination does not occur, you can set the PFM services to automatically restart at specified intervals. This function is called the *PFM service automatic restart functionality*. To maintain a stable monitoring environment, use the PFM service automatic restart function.

The PFM service automatic restart functionality uses the status management function. For this reason, the version of the PFM services to which this function is applied must support the status management function, and the status management function must be active on the host running these services. The PFM services to be restarted are the only PFM services that run on the physical host. The actual Status Server service is not restarted. If you are operating Performance Management on a cluster system, use the cluster software to control the PFM services that run on the logical host. The PFM service automatic restart function applies to all services running on the logical host.

The following figure gives an overview of the PFM service automatic restart functionality.

Figure 4-29: Overview of the PFM service automatic restart functionality
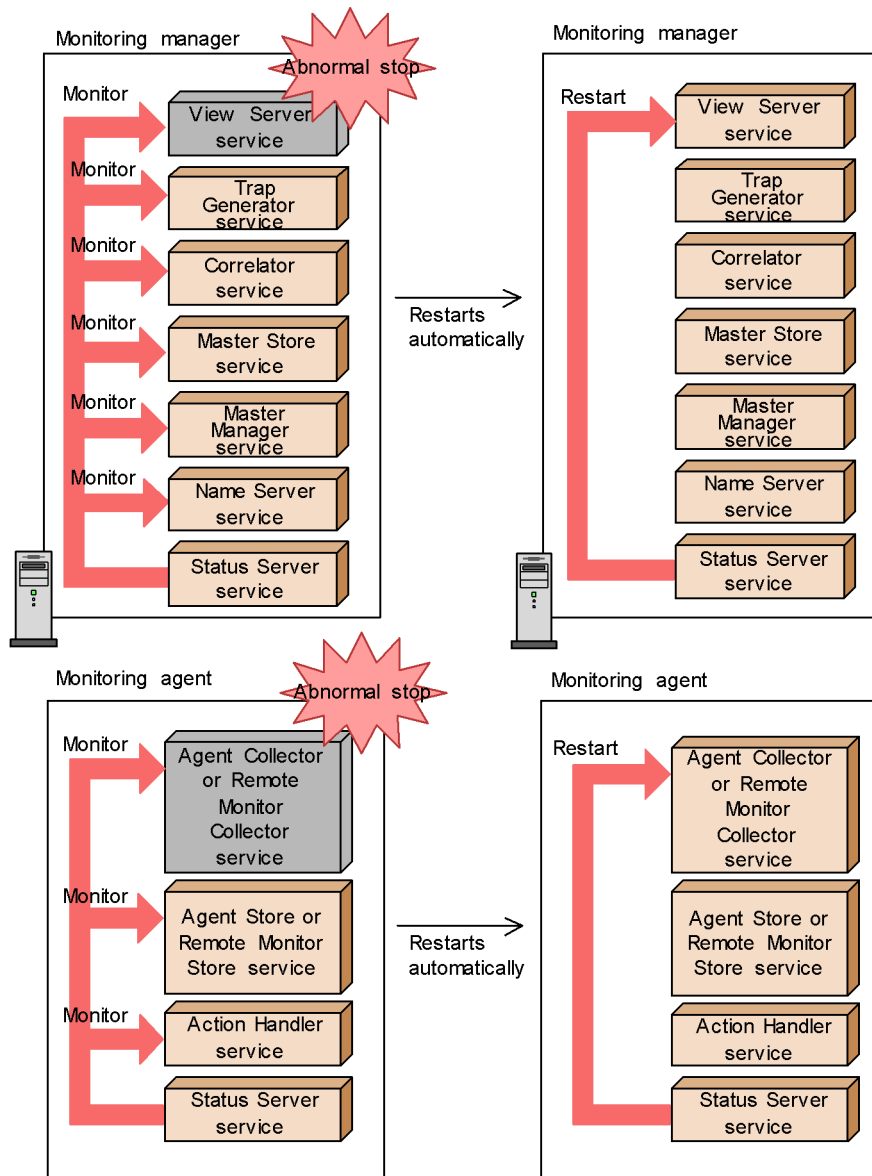
The PFM service automatic restart function provides the following two functionalities:

■ Automatic restart functionality

This functionality monitors the PFM services, and automatically restarts them

when an abnormal termination is detected. You can specify the monitored PFM services and the monitoring intervals in units of service. However, if this functionality detects that the monitored PFM services terminated abnormally, the services are restarted in the service startup unit[#] to which the applicable PFM service belongs.

■ Scheduled restart functionality

This functionality periodically restarts the PFM services. You can specify the PFM services to be restarted and the intervals between restarts in units of service. However, the PFM services are restarted in the service startup unit[#] to which the applicable PFM service belongs, while the specified unit of service terminates the services.

#

The service startup unit is the minimum unit you can specify with the `jpcspm start` command. For monitoring agents, the Agent Store and Remote Monitor Store services are paired together as a unit, and the Agent Collector and Remote Monitor Collector services are paired together as a unit. For multi-instance agents, each instance forms a unit. For the Action Handler service, the service forms the actual unit.

The figure below shows an example where services are started by the service startup unit. In this example, even if the monitored target is only the Agent Store service, when an abnormal termination of the Agent Store service is detected, the PFM service automatic restart function restarts both the Agent Collector and Agent Store services forming the service startup unit to which the Agent Store service belongs. For details on the service startup units in the PFM service automatic restart functionality, see the chapter that describes detecting problems in Performance Management in the *Job Management Partner 1/Performance Management User's Guide*.

Figure 4-30: Example of the restart by the service startup unit to which the applicable service belongs
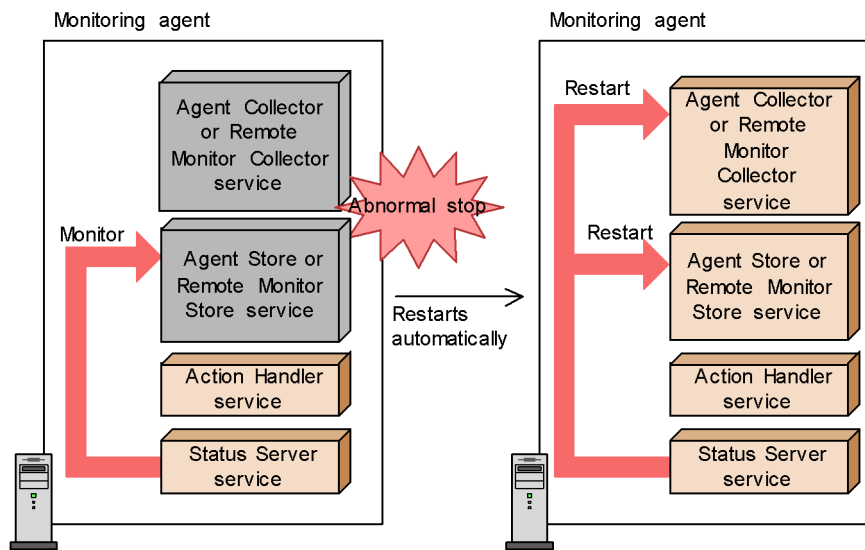
You can configure the PFM service automatic restart functionality in the Service Properties window, which is launched from the Services window of PFM - Web Console. For details on the PFM service automatic restart functionality, see the chapter that describes detecting problems in Performance Management in the *Job Management Partner 1/Performance Management User's Guide*.

4.6 Monitoring console functions of Performance Management

The monitoring console of Performance Management is a browser. By accessing the monitoring console server from a browser, the system administrators can detect errors occurring in the corporate system in real time. You do not need to install or acquire different monitoring software for each agent. By logging on to PFM - Web Console from a browser, the system administrators can monitor the status of agent operations in real time.

You can use the following two methods for monitoring operation status:

(1) Monitoring agents in an Agents tree

The icons display the status of agent operations. You can control agents in a tree structure by grouping the icons and converting the icons to a hierarchical structure called an *Agents tree*. Icons on the tree change when an event occurs in an agent. This allows you to visually check what kind of event has occurred.

By clicking the icon of an agent in the Display Alarm Status window, you can display the report associated with the alarm. You can then use this report, which appears as a graph or table, to check the operating status of the agent. When you select an item on the graph or table, you can have the report display a detailed graph or table associated with the item in a separate window. From the report, you can open a more detailed *drilldown report*.

The following figure shows agent monitoring using an Agent tree.

Figure 4-31: Monitoring agents in an Agents tree
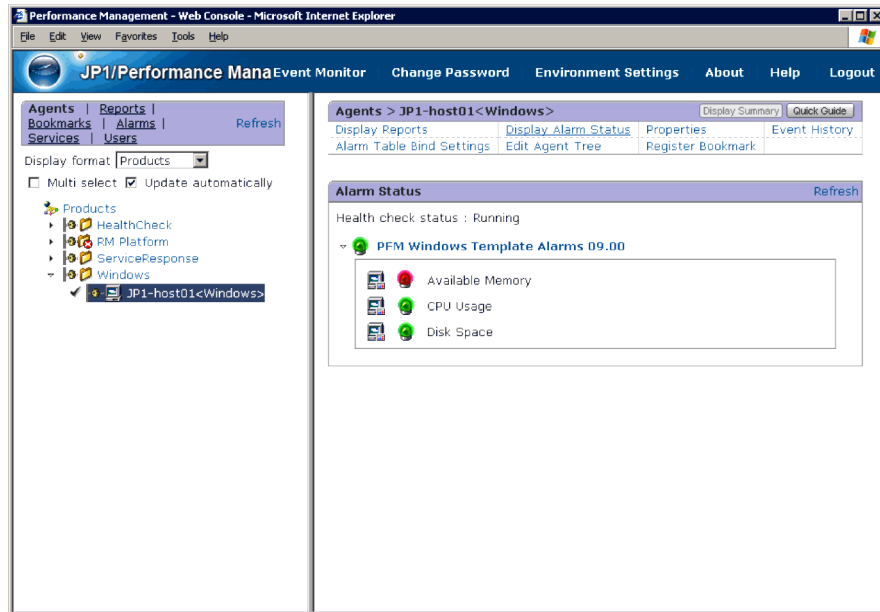
(2) Monitoring agents using logs

Using logs, you can display information about events that occurred during agent monitoring. You can check the latest information in the Event Monitor window for the date and time when the event occurs and details of messages. In the Event History window, you can also check the history of past events.

The following figure shows agent monitoring by logs.

Figure 4-32: Agent monitoring by logs

4.7 Performance Management commands

Performance Management provides various commands to support efficient operations. This section provides an overview of each command.

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

4.7.1 Commands used to set up the system

Performance Management provides the following commands to set up the system:

- Setup commands
- Commands used to set up the Store database
- Commands used to set up the Performance Management
- Commands used to set up linkage with other systems

(1) Setup commands

The following are types of setup commands:

- Commands used at setup
- Commands used to set up the monitoring targets of PFM - RM
- Commands used to set up an instance environment
- Commands used to set up the cluster system

(a) Commands used at setup

Commands used at setup include commands that specify PFM - Manager at the connection destination of PFM - Agent or PFM - RM, specify settings when you add PFM - Agent or PFM - RM, and specify port numbers used in Performance Management.

The following figure shows an overview of the commands used at setup.

Figure 4-33: Overview of the commands used at setup
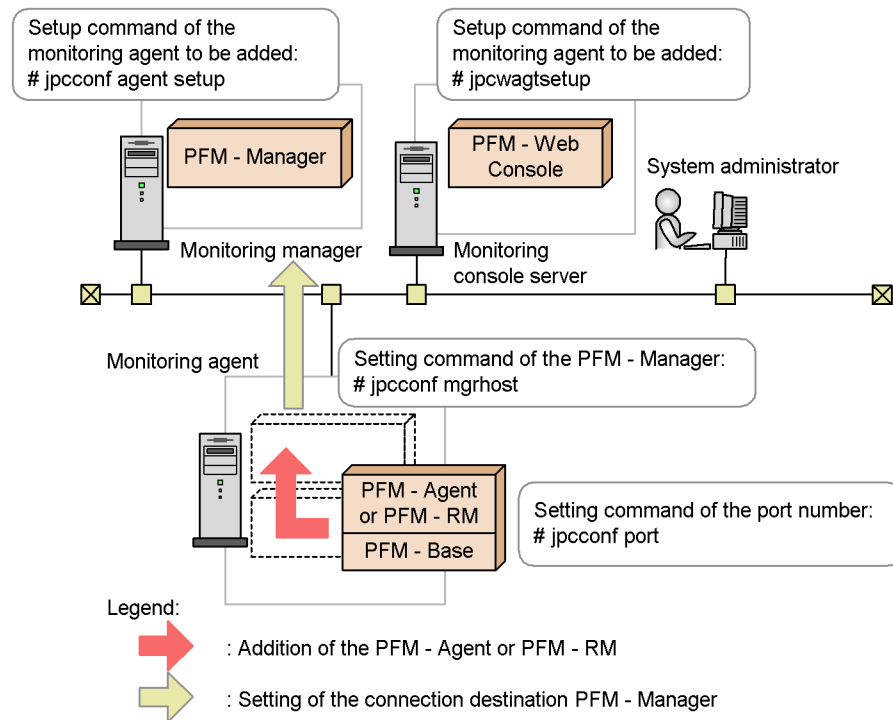
The following are the main commands used at setup:

Table 4-10: List of the main commands used at the setup

Command	Description
jpcconf mgrhost	Displays, sets and changes the connection destination PFM - Manager
jpcconf agent setup	Additionally sets up a new PFM - Agent or PFM - RM
jpcwagtsetup	Additionally sets up a new PFM - Agent or PFM - RM to PFM - Web Console
jpcconf port	Displays and sets the port number used in Performance Management
jpcconf host	Renames the monitoring host in the Performance Management system, or changes the method for obtaining the monitoring host name

(b) Commands used to set up the monitoring targets of PFM - RM

Commands used to set up the monitoring targets of PFM - RM include commands to add, delete, and display the monitoring targets of PFM - RM.

The following table gives the main commands used to set up the monitoring targets of PFM - RM.

Table 4-11: List of the main commands used to set up the monitoring targets of PFM - RM

Command	Description
jpcconf target setup	Adds monitoring targets of PFM - RM
jpcconf target unsetup	Deletes the monitoring targets of PFM - RM
jpcconf target list	Lists the monitoring targets of PFM - RM
jpcconf target display	Displays the settings for the monitoring targets of PFM - RM

(c) Commands used to set up an instance environment

Commands used to set up an instance environment include commands to create, delete, and display the instance environment.

The following table gives the main commands used to set up an instance environment.

Table 4-12: List of the main commands used to set up an instance environment

Command	Description
jpcconf inst setup	Creates an instance environment
jpcconf inst unsetup	Deletes an instance environment
jpcconf inst list	Displays an instance environment

(d) Commands used to set up the cluster system

Commands used to set up the cluster system include a command used to operate the logical host.

The following table gives the main command used to set up the cluster system.

Table 4-13: Main command used to set up the cluster system

Command	Description
jpcconf ha	Used to operate the logical host in the cluster system

(2) Commands used to set up the Store database

Commands used to set up the Store database include commands to change the Store database version.

The following table gives the main commands used to set up the Store database.

Table 4-14: List of the main commands used to set up the Store database

Command	Description
jpcconf db vrset	Changes the Store database version
jpcconf db display	Displays the status of the Store service and the Store version
jpcconf db define	Displays or modifies the settings of the Store service

(3) Commands used to set up the Performance Management functions

Commands used to set up the Performance Management functions include commands used to check whether the status management and health check functions are enabled or disabled, and to display information about the functions.

The following table gives the main commands used to set up the Performance Management functions.

Table 4-15: List of the main commands used to set up the Performance Management functions

Command	Description
jpcconf stat	Checks whether the status management function is enabled or disabled, and displays information about the function
jpcconf hc	Checks whether the health check function is enabled or disabled, and displays information about the function
jpcconf prodname	Enables and disables the product name display function. Displays the settings for this function

(4) Commands used for configuring a linkage with other systems

The commands used to configure a linkage with other systems include the commands to enable or disable the JP1/IM linkage.

The following table gives the main command used to set up linkage with other systems.

Table 4-16: List of the main commands used to set up linkage with other systems

Command	Description
jpcconf im	Enables or disables the linkage facility to JP1/IM
jpcconf ov	Enables or disables the linkage facility to NNM

4.7.2 Commands used to operate the system

Performance Management provides the following commands to operate the system:

- Service management commands
- Alarm management commands
- Report management commands
- Store database management commands
- Data collection commands
- Commands used to operate the system linking with other systems

(1) Service management commands

Performance Management provides commands to check the status of services.

The following are the main commands to manage the Performance Management services:

Table 4-17: List of the main commands used to manage the Performance Management services

Command	Description
jpctool service list	Checks the structure and status of the Performance Management services
jpctool service delete	Deletes the Performance Management service information
jpctool service register	Re-registers the Performance Management service information

(2) Alarm management commands

Alarm management commands include a command to set the alarm events issued when the monitored program exceeds a threshold.

The following table gives the main command used to set alarms.

Table 4-18: Main command to set alarms

Command	Description
jpctool alarm	Sets alarms for Performance Management

(3) Report management commands

Report management commands include a command to create operation monitoring reports based on the data collected from the monitored program.

The following table gives the main command used to set reports:

Table 4-19: List of the main command to set reports

Command	Description
jpcrdef	Sets reports for Performance Management
jpcrpt	Performs batch-output of operation reports to a CSV or HTML file

(4) Store database management commands

Store database management commands include commands used to perform setup and unsetup operations for the Store database.

The following table gives the main commands used to manage the Store database.

Table 4-20: List of the main commands used to manage the Store database

Command	Description
jpctool db backup	Backs up data
jpctool db clear	Deletes data
jpctool db dump	Outputs the collected performance data to a text file
jpctool db restore	Restores data
jpctool db import	Imports backup data into the Store database (when using Store 2.0)
jpctool db dmconvert	Upgrades the data model of the backup data in the specified backup directory (when using Store 2.0)
jpcasrec	Changes and outputs the definitions of the Store database recording methods

Command	Description
jpcaspsv	Changes and outputs the definitions of the Store database retention conditions

(5) Data collection commands

Data collection commands include commands used to collect the necessary data together when problems occur.

The following table gives the main commands used to collect troubleshooting data.

Table 4-21: Main commands to collect troubleshooting data

Command	Description
jpcras	Collects the troubleshooting data for PFM - Manager, PFM - Agent, PFM - RM, and PFM - Base
jpcwras	Collects the troubleshooting data for PFM - Web Console

(6) Commands used to operate the system linking with other systems

Commands used to operate the system linking with other systems include a command used to enable or disable the linkage facility to JP1/IM.

The following table gives the main commands used to operate the system linking with other systems.

Table 4-22: Main commands used to operate the system linking with other systems

Command	Description
jpcimevt	Sends events registered in JP1/IM

4.7.3 Commands used to start and stop the system

The following table gives the main commands used to start and stop the Performance Management system.

Table 4-23: List of the main commands used to start and stop the Performance Management system

Command	Description
jpcspm start	Starts the Performance Management services
jpcspm stop	Stops the Performance Management services
jpcwstart	Starts the PFM - Web Console services

Command	Description
`jpcwstop`	Stops the PFM - Web Console services

4.8 Notes

This section gives cautionary notes on using Performance Management.

4.8.1 Notes on the time setting of a monitoring target machine

The following are cautionary notes on the time setting of a monitoring target computer:

- Stop all Performance Management services before changing the time setting. After changing the time setting, restart the Performance Management services.

- When you change the current time to a past time, the system stores the data collection and history information after the changed time. When the system collects data and history information on the date and time that is the same as before the change, the system overwrites the previous information. For instance, when the current time is 12:00, July 5th, 2006, if you change the current time to the past date of 00:00, July 1st, 2006, the system overwrites the data and history information collected between 00:00, July 1st and 12:00, July 5th. If you want to store the data and history information collected on the same date and time before the change, execute the jpctool db backup command to back up the data and history information before changing the time setting.

- When you change the current time to the future time, the system does not store the history information between the time before the change and the time after the change.

- When you change the current time to a future time, performance data might be deleted because of its retention period. Therefore, before you change the current time to a future time, you must use the jpctool db backup or jpctool db dump command to back up the data.

- The event history is displayed in the order of the time the events were issued. Therefore, if you change a computer's time setting to a past time, the current event is inserted and displayed in the past event's history log.

- If you specify the display period for the historical report, the time setting in the PFM - Web Console is applied. You do not need to synchronize the time setting for the Performance Management programs. However, if the PFM - Web Console is configured with a time setting different from that of the other programs in Performance Management, data within a certain range might not be correctly displayed. This is because no such data exists in either the PFM - Agent or PFM - RM. In this case, you must configure the range for the historical report you want to display, noting the time setting difference between the programs. Likewise, if time zones between programs differ, you must configure the range for the historical report you want to display, noting the differences among those time zones.

4.8.2 Notes on temporary files

(1) Output directory for temporary files

The Agent Collector, Remote Monitor Collector, Agent Store, Remote Monitor Store, and Master Store services create temporary files in the following directories when you display real-time or historical reports in PFM - Web Console, display event histories, or acquire historical data using the ODBC driver:

In Windows:

The directory specified by the TMP system environment variable.

In UNIX:

The directory specified by the TMPDIR environment variable.

If TMPDIR is not defined, temporary files are created in /var/tmp or /tmp.

The Agent Collector, Remote Monitor Collector, Agent Store, Remote Monitor Store, and Master Store services might output the KAVE00105-E message when there is insufficient disk space on the disk where the directory is located.

In this case, if you are unable to secure any more free space, you can change the directory in which temporary files are created by defining the following environment variable:

Environment variable	Description
JPC_TMPDIR	Specifies the path to the directory where temporary files are to be output.

Note:

In Windows, define the JPC_TMPDIR environment variable as a system environment variable. If you have configured Performance Management to start automatically in UNIX by using an automatic start script, use the following procedure to edit the automatic start script file:

1. Log on as the root user.

2. Open the automatic start script file `jpc_start` in an editor, for example `vi`, and locate a line that resembles the following:

   ```
   export PATH SHLIB_PATH LD_LIBRARY_PATH LIBPATH
   HCCLIBCNF
   ```

3. Modify the line you located in step 2 as follows:

   ```
   JPC_TMPDIR=temporary-file-output-directory
   ```

   ```
   export PATH SHLIB_PATH LD_LIBRARY_PATH LIBPATH
   HCCLIBCNF JPC_TMPDIR
   ```

   Note: Ensure that the disk where the path specified in *temporary-file-output-directory* is located has sufficient free space.

4. Restart the system.

(2) Estimating the size of temporary files

Use the following formula to calculate the size of the temporary files created when you display a report or use the ODBC driver to acquire historical data. The maximum size of temporary files is 2GB. Adjust the conditions for the report or ODBC driver so that the calculated size is within the limit.

total-size-of-specified-fields * *number-of-instances* * *number-of-records* [bytes]

(a) For non-PA records

The *total-size-of-specified-fields* in the formula is the total size of the fields specified in the report or for the ODBC driver.

Calculation example for the record PD_PDI in PFM - Agent for Platform (Windows)

The formula when displaying a historical report with the following conditions is shown below.

- "Date and Time" field (char(6) type: 6 bytes) is specified[1]

- ODBC key field is specified[1]

  "Program" field (string type: 256 bytes)

  "PID" field (ulong type: 4 bytes)

- Other specified fields:

  "CPU %" field (float type: 4 bytes)

  "User" field (string type: 36 bytes)

  "Date" field (char(3) type: 6 bytes)[#2]

- Number of instances collected per minute:

  200 instances

- Collection period (number of records requested)

  A report that displays the per-minute records collected over one day contains a total of 1440 records (60 minutes * 24 hours).

Formula: (6 + 256 + 4 + 4 + 36 + 6) * 200 * 1440 = 89,856,000 [bytes]

#1

   When displaying a real-time or historical report, the "Date and Time" field and the ODBC key field are always acquired regardless of whether or not they appear in the report. When acquiring data using the ODBC driver, the driver acquires only those fields specified in the acquisition conditions.

#2

   The "Date" and "Time" fields, which are automatically appended to data recorded in the Store database, occupy 6 bytes each in the case of a historical report, and 3 bytes each when acquired by the ODBC driver. Other fields must be calculated with the size matching the type described in each PFM - Agent or PFM - RM manual.

Because the instance count differs each time record collection takes place, use the above only as a general guideline. For details about the data type of each field and the size of each data type and ODBC key field, see the chapter about records in the manuals for PFM - Agent and PFM - RM.

(b) For PA records

When calculating the temporary file size for a PA record, use 4409 as the *total-size-of-specified-fields*, 1 as the *number-of-instances*, and the number of events that occurred during the specified period as the *number-of-records*.

Supplemental information:

   The size of a temporary file is proportional to the number of records specified in the report and number of instances in those records. For this reason, if you anticipate that the size of the temporary file will exceed 2 GB, you can adjust the amount of data displayed by reducing the **maximum number of records** that can be displayed in PFM - Web Console when you configure the display settings for

historical reports and event histories. In the **Maximum number of records** field of the display settings for historical reports, enter the result of the formula *number-of-instances * number-of-records*.

Note:

In UNIX, the maximum size of temporary files might be less than 2 GB due to restrictions imposed on file sizes by the `ulimit` command. Even if the size of a temporary file from the above estimation does not exceed 2 GB, if the message `KAVE00103-E` appears while displaying reports, use the `ulimit` command to check the maximum value for the file size.

4.8.3 Notes on using Windows Server 2008

(1) Operations in Performance Management requiring Administrator privileges

When using Windows Server 2008, there are some operations that require administrator privileges if the UAC function is available. If you want to perform operations that require administrator privileges, you must be elevated to administrator status. The following table lists operations that require administrator privileges, and describes whether the operations can be performed.

Table 4-24: Operations that requires administrator privileges and whether the operations can be performed

Action	Whether administrator privilege is required	Whether the operation can be performed (when the UAC function is enabled)		Whether the operation can be performed (when the UAC function is disabled)	
		Management user	Ordinary user	Management user	Ordinary user
Installation and uninstallation	Y	Y[#1]	Y[#1]	Y	N
Commands requiring Administrators permissions	Y	Y[#2]	Y[#2]	Y	N
Commands that do not require Administrators permissions	N	Y	Y	Y	Y
Starting and stopping the service from SCM	Y	Y[#1]	Y[#1]	Y	N

Legend:

Y: Required/Can be performed

N: Not required/Cannot be performed

#1: UAC popup indicates that your status must be elevated to administrator.

#2: These commands must be executed from the Performance Management Administrator Console.

(2) Overview of the Performance Management Administrator Console

In Performance Management, some commands require administrator permissions. These commands are called *administrator commands*. The Performance Management Administrator Console is the command prompt used to execute the administrator commands.

If the User Account Control (UAC) of Windows is available, execute these commands from the Administrator Console.

- How to start the Performance Management Administrator Console

  - In PFM - Base or PFM - Manager:

    To start the Performance Management Administrator Console, from the **Start** menu, choose **Programs**, **Performance Management**, and then **Administrator Console**.

  - In PFM - Web Console:

    To start the Performance Management Administrator Console, from the **Start** menu, choose **Programs**, **Performance Management**, and then **Administrator Console(Web Console)**.

- How to stop the Performance Management Administrator Console

  To stop the Performance Management Administrator Console, from the command prompt, type the `exit` command, or click the close (x) button.

(3) Creating folders or files specific to Performance Management

When you create folders or files specific to Performance Management, do not create them in the folder where the UAC function is active.

(4) About WRP (Windows Resource Protection)

Resources under the folder, for which the resource protection by WRP is enabled, cannot be deleted or changed. Do not set folders or recording destinations for the folders under the folder for which WRP is configured.

(5) About support for Windows Defender

When you are using the software explorer function of Windows Defender, warning messages might be displayed for unclassified programs.

When you install PFM - Manager, or perform the additional setup of PFM - Agent or PFM - RM to PFM - Manager, warning messages might be output by any function of

Windows Defender. Therefore, all functions of Windows Defender must be turned off. You can also exclude the folder that installs PFM - Manager from the audit target of Windows Defender.

(6) Commands requiring BackupOperators permissions

If you use Windows Server 2008 and belong to the `BackupOperators` group, you can execute the commands that require `BackupOperators` permissions.

Chapter

5. Installation and Setup (in Windows)

This chapter describes the procedures for installation and setup for Performance Management in Windows.

5.1 Installation and setup

This section describes installation and setup procedures for the Performance Management programs.

5.1.1 Before installation and setup

This subsection describes what you need to confirm before installing and setting up Performance Management. For details on notes on Windows Server 2008, see *4.8.3 Notes on using Windows Server 2008*.

(1) Supported OSs

The following table lists supported OSs for the Performance Management programs.

Table 5-1: Supported OSs (in Windows)

OS name	PFM - Manager	PFM - Web Console	PFM - Base
Windows Server 2003	Y	Y	Y
Windows Server 2008	Y	Y	Y

Legend:

Y: Supported

PFM - Agent and PFM - RM support different OSs. For details, see the appropriate PFM - Agent or PFM - RM manual.

(2) Determining the system configuration

Determine the number of instances of PFM - Agent or PFM - RM that connect to PFM - Manager. For details on how to estimate the number of instances, see *A.1 System configuration*.

(3) Network environment settings

This subsection describes the network environment required to run Performance Management.

(a) IP address settings

Specify an environment in which the IP addresses can be resolved by host names for all hosts in the Performance Management system. Performance Management cannot be installed if the environment does not provide the ability to resolve IP addresses.

You can use the real host name or the alias name as the monitoring host name (the host

name for the Performance Management system).

- When using the real host name as the monitoring host name

  Configure the environment so that the IP address can be resolved with the host name that has been obtained by executing either the `hostname` command (Windows system) or `uname -n` command (UNIX system).

  For a UNIX system, you can also use the host name obtained with the `hostname` command. For details, see *6.3.3 Changing the host name in a Performance Management system*.

- When using the alias name as the monitoring host name

  Configure the environment so that the IP address can be resolved with the specified alias name.

For details on how to set a monitoring host name, see *5.3.3 Changing the host name in a Performance Management system*.

Use one of the following methods to specify host names and IP addresses:

- `hosts` file

- Domain Name System (DNS)

- Host information configuration file for Performance Management

  - `jpchosts` file (for PFM - Manager, PFM - Agent, PFM - RM, and PFM - Base)

  - `config.xml` file (for PFM - Web Console)

Notes:

- Performance Management can be used in a DNS environment but does not support FQDN (Fully Qualified Domain Name). Therefore, you must exclude the domain name when you specify the monitoring host name.

- Use the `jpchosts` file to set IP addresses if you run the system in multiple LAN environments. For details, see *5.3.1 Changing the network configuration*.

- Performance Management cannot be used in a DHCP environment on hosts which IP addresses are dynamically allocated. You must allocate fixed IP addresses to all hosts where Performance Management is installed.

(b) Port number settings

The port numbers listed in the following table are assigned to the Performance Management program services by default. For other services or programs, a port number not in use by the system at that time, is automatically assigned each time a service is started up. Use fixed port numbers if you use Performance Management in

a firewall environment. For details on the procedure to fix port numbers, see *5.3.1(1)(b) Setting port numbers*.

Table 5-2: Default port numbers and Performance Management program services (in Windows)

Service	Service name	Parameter	Port number	Note
Service configuration information management function	Name Server	`jp1pcnsvr`	22285	The port number used by the PFM - Manager Name Server service. This port number is set for all hosts for Performance Management.
OpenView linkage function	NNM Object Manager	`jp1pcovsvr`	22292	The port number used for communications between a map manager and object manager in the OpenView linkage facility of PFM - Manager and PFM - Base. This port number is set on a host where PFM - Manager or PFM - Base is installed.
Service status management function	Status Server	`jp1pcstatsvr`	22350	The port number used by the Status Server service in the PFM - Manager and PFM - Base. This port number is set on a host where PFM - Manager or PFM - Base is installed.
Monitoring console communication function	View Server	`jp1pcvsvr`	22286	The port number used by View Server service in PFM - Manager. This port number is set on PFM - Manager hosts.
Web Service function	Web Service	--	20358	The port number used by the service of Web Service in PFM - Web Console.
Web Container function	Web Console	--	20359 20360	The port number used by Web Console service in PFM - Web Console.

Legend:

--: Not applicable

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Set the network settings so that Performance Management can communicate through these port numbers.

(4) OS user permission required for installation

Always use an account that has OS Administrators permissions when you install the Performance Management programs.

(5) Required programs

This subsection describes required programs to install Performance Management. The following figure describes the configuration of the required programs.

Figure 5-1: Program configuration
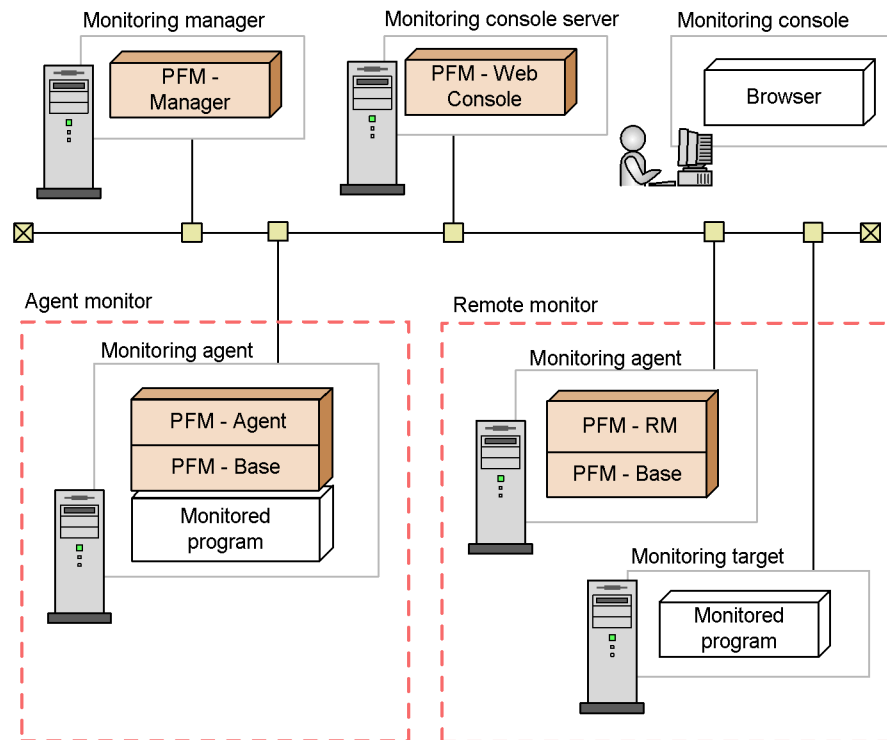
Legend:

    ■ : Programs provided by Performance Management

    □ : Required programs

Notes:

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- An SMTP server is required to send emails when alarm events are reported to the system administrator via emails. For details, see the chapter that describes the operation monitoring with alarms in the *Job Management Partner 1/Performance Management User's Guide*.

- The required programs might differ if you use linkage functions between Performance Management and other systems. For details on the linkage facility, see the chapter that describes the linkage with the integrated management product JP1/IM for operation monitoring, and the linkage with Network Node Manager (NNM) for operation monitoring in the *Job Management Partner 1/Performance Management User's Guide*.

(a) Programs required for the monitoring manager

PFM - Manager is required for the monitoring manager. Also, JP1/Base is required for JP1 users to perform integrated authentication. For details, see the chapter that describes user account management in the appropriate JP1/Base manual, and the *Job Management Partner 1/Performance Management User's Guide*.

(b) Programs required for the monitoring console server

PFM - Web Console is required for the monitoring console server.

(c) Programs required for the monitoring agent

Install PFM - Base and either PFM - Agent or PFM - RM for the monitoring agent. Since the PFM - Base program is required for PFM - Agent or PFM - RM, install PFM - Base first and then install PFM - Agent or PFM - RM.

However, PFM - Base is not required if you install PFM - Manager and either PFM - Agent or PFM - RM on the same host. In such cases, since PFM - Manager is the required program for PFM - Agent or PFM - RM, install PFM - Manager first and then install PFM - Agent or PFM - RM.

The programs to be monitored differ per the PFM - Agent or PFM - RM. For details on the programs monitored by PFM - Agent or PFM - RM, see the appropriate PFM - Agent or PFM - RM manual.

(d) Programs required for the monitoring console

A browser is required for the monitoring console in order to check the operation monitoring data collected by Performance Management or to change Performance Management settings.

The following browser is required for Performance Management when you are using the monitoring console in a Windows environment:

- Internet Explorer 6.0 or later, Firefox 2.0.*x*, or Firefox 3

The supported browsers differ depending on the version of PFM - Web Console. For details, see *5.1.6 Procedure for setting up the monitoring console browser*.

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(6) *Installation and setup in a cluster system*

For installation and setup in a cluster system, the required network environment and program configuration differ from the setup in usual configurations. Also, you need to perform procedures on the executing and standby nodes. For details, see the chapter that describes the cluster system configuration and operation in the *Job Management Partner 1/Performance Management User's Guide*.

(7) *Notes*

This subsection gives cautionary notes on installing and setting up Performance Management.

(a) Notes on environment variables

Do not manually set `JPC_HOSTNAME` as an environment variable, because it is used for Performance Management as an environment variable. If this setting is made, Performance Management will not run correctly.

(b) Notes on installation and setup of multiple Performance Management programs on a single host

You can also install the following Performance Management programs on the same host:

- PFM - Manager
- PFM - Web Console
- PFM - Agent or PFM - RM

Note the following about installing multiple programs:

- PFM - Base is not required if you install PFM - Manager and either PFM - Agent or PFM - RM on the same host. In such cases, because PFM - Manager is required for PFM - Agent or PFM - RM, install PFM - Manager first and then install PFM - Agent or PFM - RM.

- You cannot install PFM - Base and PFM - Manager on the same host. To install PFM - Manager on a host that has PFM - Base and either PFM - Agent or PFM - RM installed, uninstall all Performance Management programs except PFM - Web Console, and then install PFM - Manager and either PFM - Agent or PFM - RM, in that order. To install PFM - Base on a host on which PFM - Manager and either PFM - Agent or PFM - RM is installed, first, uninstall all Performance Management programs except PFM - Web Console and then install PFM - Base and either PFM - Agent or PFM - RM, in that order.

- If you install PFM - Agent or PFM - RM on a host that has PFM - Manager installed, PFM - Manager for the connection destination of PFM - Agent or PFM - RM is set to PFM - Manager on the local host. In such cases, you cannot change PFM - Manager for the connection destination of PFM - Agent or PFM - RM to

PFM - Manager on the remote host. If you want to connect to PFM - Manager on the remote host, make sure that PFM - Manager is not installed on a host on which PFM - Agent or PFM - RM is to be installed.

- When you install Performance Management programs on a host that has PFM - Web Console installed, close all the browser windows first, and then install the programs.

- If you use the function for setting monitoring-host names, you cannot install PFM - Agent 07-00 or earlier on the same host. If you want to install PFM - Agent 07-00 or earlier, you must reset the setting so that the function for setting monitoring-host names is not used (set 0 for the Get Host Mode label). If you do not reset the setting, the installation of PFM - Agent 07-00 or earlier might fail. For details on how to set a monitoring host name, see *5.3.3 Changing the host name in a Performance Management system*.

Hint:

We recommend that you operate PFM - Manager, PFM - Web Console, PFM - Agent, and PFM - RM on separate hosts in order to improve the system performance and reliability.

(c) Notes on version upgrade

The following gives cautionary notes on upgrading older versions of Performance Management programs:

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

- When you install a new Performance Management program, stop all of the Performance Management programs and services at the local host. All services on the physical host and logical host must be stopped. For details on 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*.

- Except in the case of PFM - Web Console, the installation path is the same as the first program when you install another Performance Management program on a host that already has a Performance Management program installed. To change the installation path, you must delete all installed Performance Management programs and then re-install the same programs.

- You cannot install PFM - Base and PFM - Manager on the same host. To install PFM - Manager on a host that has PFM - Base and either PFM - Agent or PFM - RM installed, uninstall all Performance Management programs except PFM - Web Console and then install PFM - Manager and either PFM - Agent or PFM - RM, in that order. To install PFM - Base on a host on which PFM - Manager and either PFM - Agent or PFM - RM is installed, first, uninstall all Performance

Management programs except PFM - Web Console, and then install PFM - Base and either PFM - Agent or PFM - RM, in that order.

- Note that the location of the executable files for the Store service (`jpcsto.exe` and `stpqlpr.exe`) has been changed in versions 08-00 and later of the Performance Management programs. When you upgrade PFM - Manager and PFM - Agent to version 08-00 or later, the executable files for the Store service will be deleted from their former location.

- If you want to upgrade the operating system to Windows Server 2008, you must temporarily uninstall the Performance Management programs for Windows Server 2003. This is because the operation of these programs on Windows Server 2008 might not be correct. First uninstall all Performance Management products, and then perform the upgrade. Finally, install the Performance Management programs for Windows Server 2008.

- For the upgrade installation, the destination disk temporarily requires twice as much free space as the Store database. Securing this free space enables the existing Store database to be automatically upgraded. Confirm that there is sufficient free disk space in the destination disk before performing the upgrade installation.

(d) Notes on PFM - Web Console installation

The following gives cautionary notes on installing PFM - Web Console:

- The value of the *%SystemDrive%* environmental variable is referenced as the log output folder during the installation of the program. The log file is not output if the *%SystemDrive%* environment variable is not defined. In Windows Server 2008, the value of the *%SYSTEMROOT%* environment variable is referenced.

- The log data recorded during the installation is output to *%SystemDrive%*\\`pfmwebconinst.log`. Also, the installer end code is output to *%SystemDrive%*\\`pfmwebconinst.rtn`. The log file output from the installer is copied to the *installation-folder*\\`log` directory before the installation ends. In Windows Server 2008, the log file is output to *%SYSTEMROOT%*\\`TEMP\HCDINST\`*product-model-name*.`LOG`.

- If the installation fails, back up the log data (*%SystemDrive%*\\`pfmwebconinst.log`) recorded during the installation, remove the cause of the problem, uninstall PFM - Web Console, and then perform the installation again.

- The Windows initialization file (`config.xml`) stored in *installation-folder*\\`conf` is not updated if you overwrite PFM - Web Console when installing. However, the `config.xml` file stored in the *installation-folder*\\`sample\conf` is updated.

- You must restart the system to enable the PFM - Web Console settings when

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installing a new PFM - Web Console.

(e) Notes on linking with other systems

- When you install the program in an environment that is linked with Network Node Manager, stop the OpenView linkage facility and ovw, and then install the program. For details on the OpenView linkage facility, see the chapter that describes the linkage with Network Node Manager (NNM) for operation monitoring in the *Job Management Partner 1/Performance Management User's Guide*. For the Network Node Manager environment variables and commands, see the HP NNM documentation.

(f) Other related notes

- If you install a new Performance Management program into an environment that does not have a Performance Management program installed, make sure there are no files or folders in the installation folder.

- A message that prompts you to restart the system might be displayed if you install a Performance Management program while other Performance Management programs or services are running or programs that reference Performance Management files (such as Windows Event Viewer) are running. In such instances, restart the system according to the displayed message to complete the installation.

- Expanding files or folders might fail if you install Performance Management programs while other programs or services are running, programs that reference Performance Management files (such as Windows Event Viewer) are running, the disk capacity is insufficient, or you do not have permission for the installation directory. If other Performance Management programs or services are running or programs that reference Performance Management files (such as Windows Event Viewer) are running, exit all programs and then perform the installation again. If the problem is caused by insufficient disk space or insufficient directory permission, resolve the problem, and then perform the installation again.

- When you install the Performance Management programs, make sure that the following security-related programs have not been installed. If they have been installed, follow the instructions below:

  - Security-monitoring program

    Terminate the security-monitoring program, or change the settings so that the program does not interfere with the installation of the Performance Management programs.

  - Virus detection program

    Before installing the Performance Management programs, we recommend that first you stop virus detection programs.

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If a virus detection program is running, the installation might be slower, the installation might be aborted, or the programs might not be installed correctly.

- Process-monitoring program

  Stop process-monitoring programs, or change the settings so that the programs do not monitor the services and processes of Performance Management or shared components.

  If these services or processes are started or terminated by a process-monitoring program while installing the Performance Management programs, the installation might fail.

- When you install version 08-00 or later of a Performance Management program, the setting for the status management function is as follows:

  - After a new installation of version 08-00 or later of PFM - Manager or PFM - Base on a host that does not already have a Performance Management program installed

    Status management function setting: Enabled

  - Other cases[#]

    Status management function setting: Remains the same

  # The following fall under the other cases category:

  - Upgrading version 06-70 to 07-10 of PFM - Manager to version 08-00 or later

  - Performing a new installation of version 08-00 or later of PFM - Manager or PFM - Base in an environment where version 06-70 to 07-00 of PFM - Agent is installed

  Because 06-70 to 07-10 versions of Performance Management do not have the status management function, the setting status in this case becomes *disabled*.

  For the procedure to change the settings of the status management functions, see the chapter that describes detecting problems in Performance Management in the *Job Management Partner 1/Performance Management User's Guide*.

- You can use the health check function with PFM - Manager version 08-11 or later. Depending on the PFM - Manager version and your installation environment, the settings of the health check function are as follows.

  - After a new installation of version 09-00 or later of PFM - Manager on an environment that does not already have a Performance Management program installed

    Health check function setting: Enabled

- After a new installation of version 09-00 or later of PFM - Manager on an environment that already has a Performance Management program installed

  Health check function setting: Disabled

- After a new installation of version 08-11 of PFM - Manager

  Health check function setting: Disabled

- Upgrading version 06-70 to 08-00 of PFM - Manager to version 08-11 or later

  Health check function setting: Disabled

- Upgrading version 08-11 or later of PFM - Manager

  Health check function setting: Setting prior to upgrading is used.

Because 06-70 to 08-00 versions of PFM - Manager do not have the health check function, the setting status in this case becomes *disabled*. For details on configuring the health check function, see the chapter that describes detecting problems in Performance Management in the *Job Management Partner 1/ Performance Management User's Guide*.

5.1.2 Process flow for installation and setup

The following figure shows the process flow for Performance Management installation and setup.

Figure 5-2: Process flow for installation and setup

Monitoring manager
(PFM - Manager host)

Monitoring console server
(PFM - Web Console host)

Monitoring agent (PFM - Agent host or PFM - RM host)

Installation [5.1.3(1)]

Install PFM - Manager
[(a)]

Installation [5.1.3(1)]

Install PFM - Web Console
[(b)]

Installation

Install PFM - Base

Install PFM - Agent

Setup [5.1.4]

Setup [5.1.4]

Setup

Register PFM - Agent
[(1)]   [(1)]

Set up the instance environment

Set up the monitoring target
(PFM - RM only)

Configure the network
[(2)]   [(2)]

Change the log file size [(3)]

Set the authentication mode
[(4)]

Set the initialization file
[(3)]

Change the log file size

Change the event data storage locations
[(5)]

Change the performance data storage locations

Configure action log output [(6)]

Configure the health check function [(7)]

Set the connection-target PFM - Manager
[(4)]

Set the connection-target PFM - Manager

Set the PFM service automatic restart function [(8)]

Configure action log output#

Set the product name display function [(8)]

Legend: [red shape] : Mandatory step

[green dashed shape] : Optional step

[gray shape] : Described in the manuals for PFM - Agent or PFM - RM

[ ] : See the indicated section

#: When you set the action log settings on a specific host, the settings apply to all instances of PFM - Agent version 08-00 or later installed on that host. For details, see *G. Outputting Action Log Data*.

This subsection describes the procedures to install and set up PFM - Manager and PFM

- Web Console. The installation and setup procedures of PFM - Agent or PFM - RM depend on the product. For details, see the appropriate PFM - Agent or PFM - RM manual.

5.1.3 Installation procedures

This subsection describes the procedure to install Performance Management programs, and the procedure to install programs provided on the CD-ROM.

(1) Program installation steps

This subsection describes the steps to install Performance Management programs.

Note:

For Performance Management programs, you can install monitoring manager, monitoring console server, and monitoring agent in any order.

(a) Steps to install the monitoring manager

Install PFM - Manager on the monitoring manager.
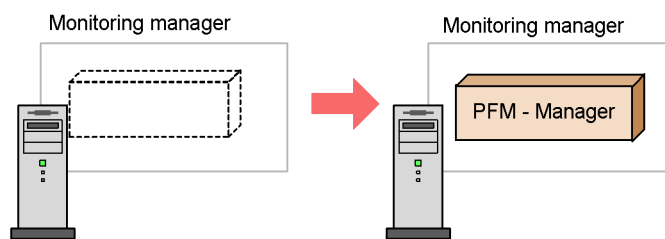
1. Install PFM - Manager.

(b) Steps to install the monitoring console server

Install PFM - Web Console on the monitoring console server.

1. Install PFM - Web Console.

(c) Steps to install the monitoring agent

First Install PFM - Base and then install PFM - Agent or PFM - RM. You cannot install PFM - Agent or PFM - RM on a host that does not have PFM - Base installed.

If you install PFM - Agent or PFM - RM and PFM - Manager on the same host, install PFM - Manager first, and then PFM - Agent or PFM - RM.

1. Install PFM - Base.   2. Install PFM - Agent or PFM - RM.
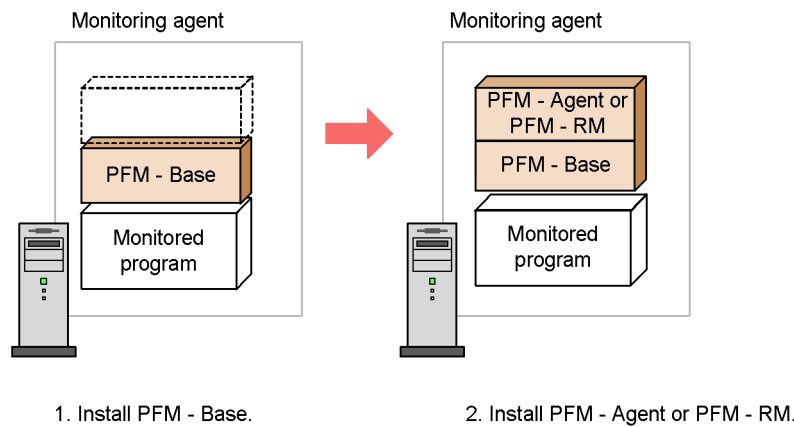
For details on the installation procedure, see the appropriate PFM - Agent or PFM - RM manual.

(2) *Installing Performance Management programs*

There are two ways to install Performance Management programs. One method uses the CD-ROM, and the other uses JP1/Software Distribution to perform remote installation. For details on how to use Job Management Partner 1/Software Distribution, see the *Job Management Partner 1/Software Distribution Administrator's Guide Volume 1*.

Notes for all Windows OSs

Stop all Performance Management programs and services that are running on the host on which you intend to install the Performance Management program. All services on the physical host and logical host must be stopped. For details on 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*.

Note on installing in a Windows Server 2008 environment

If the User Account Control (UAC) function is enabled, the User Account Control dialog box might appear during installation. If this dialog box appears, click the **Continue** button to continue the installation. If you click the **Cancel** button, the

installation is aborted.

To install programs by using the CD-ROM:

1. Log on with Administrators permissions to the host on which you intend to install the Performance Management program.

2. Stop Performance Management programs and services.

   Stop all running Performance Management programs and services.

3. Insert the CD-ROM into the CD-ROM drive.

   Follow the instructions provided by the installer after starting up.

   Define the following information for installation:

   - User information

     Enter a user name and other information.

   - Installation folder

     Specify the folder in which you intend to install the Performance Management programs.

     An installation folder is created when you specify the folder in the Select Directory dialog box and click the **OK** button. If you inadvertently create the wrong folder, delete the folder after the installation has finished.

   - Program folder

     Specify the program menu name you want to register in the **Start** - **All programs** menu in Windows.

     Performance Management is registered by default.

   - PFM - Manager for the connection destination (during a new installation of PFM - Base)

     Enter the host name of the PFM - Manager host for the connection destination when you perform a new installation of PFM - Base.

     You do not have to set PFM - Manager for the connection destination during installation. You can set it later. If you do not set PFM - Manager for the connection destination during installation, the physical host name of the PFM - Agent host or PFM - RM host is used. After the installation, change PFM - Manager for the connection destination. For details on changing PFM - Manager for the connection destination, see *5.3.2 Changing PFM - Manager for the connection destination*.
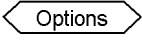
Reference note:

> You can specify the installation folders and program folders for the Performance Management programs except PFM - Web Console only when installing the Performance Management programs on the host for the first time. When installing programs the second or subsequent times, the programs are installed or registered in the folders you specified during the initial installation.
>
> Additionally, you can set PFM - Manager for the connection destination only when PFM - Base is first installed on a host without PFM - Agent 08-00 or earlier. If you install PFM - Base on a host that has version 08-00 or earlier of PFM - Agent installed, or if you perform an overwrite installation of PFM - Base, the existing settings of PFM - Manager for the connection destination are inherited.

5.1.4 PFM - Manager setup procedure

This subsection describes how to set up PFM - Manager installed on monitoring managers.

⟨ Options ⟩ indicates setup items required according to each environment and optional setup items used to change default settings.

(1) Registering PFM - Agent or PFM - RM ⟨ Options ⟩

You must register PFM - Agent or PFM - RM in PFM - Manager in order to perform integrated management of PFM - Agent or PFM - RM by using PFM - Manager and PFM - Web Console.

If the version of PFM - Manager is 09-00 or later, the registration is performed automatically, making the instructions described here unnecessary.

However, for PFM - Agent or PFM - RM released after PFM - Manager, you might need to perform manual registration. For details, see the PFM - Manager Release Notes.

Reference note:

The information on the automatically registered PFM - Agent or PFM - RM is displayed in PFM - Web Console at the following time:

If the version of PFM - Web Console is 09-00 or later:

The information is displayed when you log into PFM - Web Console again after starting the registered PFM - Agent or PFM - RM.

If the version of PFM - Web Console is 08-11 or earlier:

The information is displayed when you restart PFM - Web Console after starting the registered PFM - Agent or PFM - RM.

If you want to register PFM - Agent or PFM - RM before starting the console, execute the `jpcconf agent setup` command with the `-register` option specified. For details on the `jpcconf agent setup` command, see the chapters that describe commands in the manual *Job Management Partner 1/ Performance Management Reference*.

The following figure shows the process flow for PFM - Agent or PFM - RM registration.

Figure 5-3: Process flow for PFM - Agent or PFM - RM registration

Note

- Register PFM - Agent or PFM - RM before setting the instance environment of PFM - Agent or PFM - RM.

- You do not need to register PFM - Agent or PFM - RM when you add the same version of PFM - Agent or PFM - RM with the same product ID to a Performance Management system in which the PFM - Agent or PFM - RM information has been already registered.

- If you install a different version of PFM - Agent or PFM - RM with the same product ID on a different host, first set up the older version of PFM - Agent or PFM - RM, and then set up the newer version of PFM - Agent or PFM - RM.

- If you install PFM - Agent or PFM - RM on the same host that has PFM - Manager installed, the `jpcconf agent setup` command is executed automatically. In PFM - Agent or PFM - RM, the execution results are logged as `KAVE05908-I New agent setup (`*pfm-agent-service-key*`) ended successfully. (version=`*version*`)` to the common message log. Check the results. If the command has not been executed correctly, execute the command again. For details on how to execute commands, see the chapters that describe commands in the manual *Job Management Partner 1/ Performance Management Reference*.

(a) Copying the PFM - Agent or PFM - RM setup file

Copy the setup file on a host that has PFM - Agent or PFM - RM onto a host that has PFM - Manager installed.

To copy the PFM - Agent setup file:

1. Copy the setup file of PFM - Agent or PFM - RM in binary mode.

   The following table shows the locations where files are stored and the location where files are to be copied.

   Table 5-3: Setup files to be copied

Copy from		Copy to	
Host	**File**	**Host**	**File**
PFM - Agent, PFM - RM	• In Windows *installation-folder*`\setup\jpc`*xxxx*`w.EXE`[#] • In UNIX `/opt/jp1pc/ setup/ jpc`*xxxx*`w.EXE`[#]	PFM - Manager	*installation-folder*`\se tup`

   #

   xxxx indicates the service key of each PFM - Agent or PFM - RM. For details

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on service keys, see the appropriate PFM - Agent or PFM - RM manual.

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

Execute the following command on the PFM - Manager host to set up PFM - Agent or PFM - RM.

```
jpcconf agent setup -key
```

xxxx indicates the service key of each PFM - Agent or PFM - RM. For details on service keys, see the appropriate PFM - Agent or PFM - RM manual.

For example, execute the following command to set up PFM - Agent for Oracle:
```
jpcconf agent setup -key Oracle
```

Note:

An error might occur if you execute the `jpcconf agent setup` command when Performance Management programs and services have not completely stopped on the local host where you want to execute the command. In such cases, make sure that the Performance Management programs and services have completely stopped and then execute the `jpcconf agent setup` command again.

You can delete the setup file of PFM - Agent or PFM - RM after this procedure has finished.

(2) Specifying settings for the network ⟨ Options ⟩

Settings described in this subsection are only required if you change settings according to the network configuration on which Performance Management is used.

You can set the following two items for network settings:

- Setting IP addresses

  Set this item when Performance Management is used in a network with multiple LANs connected. To set multiple IP addresses, define the host name and IP address in the `jpchosts` file. Confirm that the settings in `jpchosts` files are the same throughout the entire Performance Management system.

  For details, see *5.3.1 Changing the network configuration*.

- Setting port numbers

  You can set the port numbers used by Performance Management. Use the same port numbers and service names for the entire Performance Management system to avoid any confusion during operations.

For details on setting port numbers, see *5.3.1(1)(b) Setting port numbers*.

(3) Changing the log file size ⟨Options⟩

The operating status of Performance Management is output to a Performance Management-specific log file. This log file is called the *common message log*. The common message log uses by default two 2,048-KB files. This setting is required only when you wish to change this file size.

For details, see *5.4.1 Setting the size of the log file for the common message log*.

(4) Specifying settings for the authentication mode ⟨Options⟩

This setting is required only when you wish to change the authentication mode of Performance Management from PFM authentication mode to JP1 authentication mode.

For details, see the chapter that describes management of user accounts in the *Job Management Partner 1/Performance Management User's Guide*.

(5) Changing the storage locations of event data ⟨Options⟩

The settings below are required when you wish to change the storage destination, backup destination, or export destination of the event data managed by PFM - Manager.

By default, event data is stored in the following locations:

- Data storage folder: *installation-folder*\mgr\store\
- Backup folder: *installation-folder*\mgr\store\backup\
- Export folder: *installation-folder*\mgr\store\dump\

Note:

For the default folders when running Performance Management on a logical host, read *installation-folder* as *environment-directory*\jp1pc.

For details, see *5.4.2 Changing the storage locations of event data*.

(6) Specifying settings for action log output ⟨Options⟩

This setting is required when you wish to output an action log when an alarm is issued. An action log is log information output in conjunction with the alarm function, when an aspect of the system such as the system load exceeds a threshold. For details, see *G. Outputting Action Log Data*.

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(7) Configuring the health check function ⟨ Options ⟩

This setting is required when you wish to check the operating status of monitoring agents and their hosts. For details on setting procedure, see the chapter that describes detecting problems in Performance Management in the *Job Management Partner 1/Performance Management User's Guide*.

(8) Configuring the PFM service automatic restart function ⟨ Options ⟩

This setting is required if you want PFM services to automatically restart if they terminate abnormally. For details on specifying this setting, see the chapter that describes detecting problems in Performance Management in the *Job Management Partner 1/Performance Management User's Guide*.

(9) Configuring the product name display function ⟨ Options ⟩

This setting is required if you want to enable the product name display function when you upgrade from a version earlier than 08-11, or when you perform a new installation. For details on this function, see *4.1.2 Displaying and specifying services*. For details on setting procedure, see *5.4.9 Configuring the product name display function*.

5.1.5 PFM - Web Console setup procedure

This subsection describes how to set up PFM - Web Console installed on a monitoring console server.

⟨ Options ⟩ indicates setup items required according to each environment and optional setup items used to change default settings.

(1) Registering PFM - Agent or PFM - RM ⟨ Options ⟩

You must register PFM - Agent or PFM - RM in PFM - Web Console in order to perform integrated management of PFM - Agent or PFM - RM by using PFM - Manager and PFM - Web Console.

If the version of PFM - Web Console is 09-00 or later, PFM - Agent or PFM - RM is automatically registered, following the instructions described here is unnecessary. However, for PFM - Agent or PFM - RM released after PFM - Web Console, you might need to perform a manual registration. For details on whether you need to manually register PFM - Agent or PFM - RM, see the PFM - Web Console Release Notes.

The following figure shows the process flow for registering PFM - Agent or PFM - RM.

Figure 5-4: Process flow for registering PFM - Agent or PFM - RM
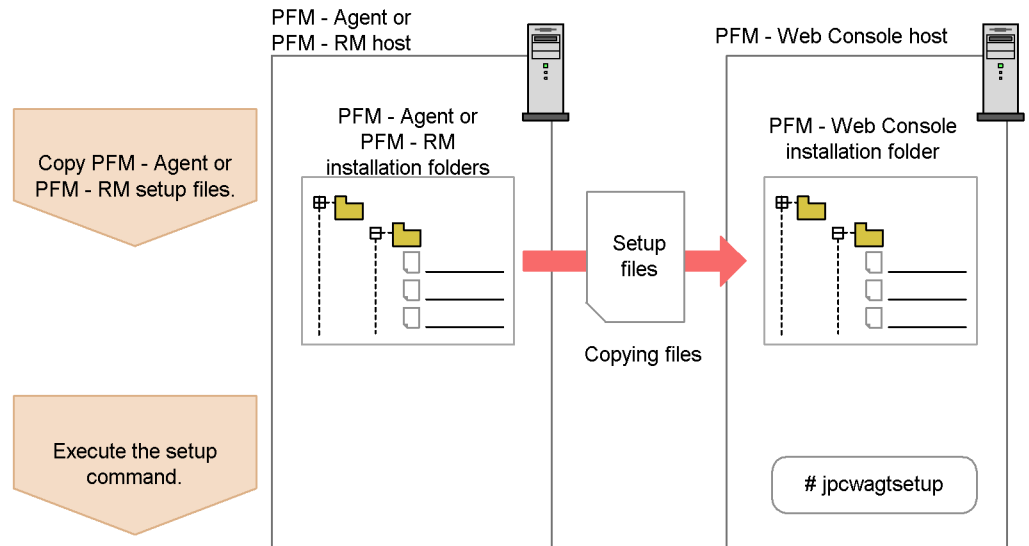
Notes:

- You do not need to register PFM - Agent or PFM - RM when you add the same version of PFM - Agent or PFM - RM with the same product ID to a Performance Management system in which the PFM - Agent or PFM - RM information has been already registered.

- Set up the latest version of PFM - Agent or PFM - RM if you install a different version of PFM - Agent or PFM - RM with the same product ID on a different host.

(a) Copying the PFM - Agent or PFM - RM setup file

Copy the setup file on a host that has PFM - Agent or PFM - RM onto a host that has PFM - Web Console installed.

To copy the PFM - Agent or PFM - RM setup file:

1. Stop PFM - Web Console if it is running.

2. Copy the setup file of PFM - Agent or PFM - RM in binary mode.

   The following table shows the locations where files are stored and the location where files are to be copied.

Table 5-4: Setup files to be copied

Copy from		Copy to	
Host	**File**	**Host**	**File**
PFM - Agent, PFM - RM	• In Windows *installation-folder*\setup\jpc*xxxx*w.EXE • In UNIX /opt/jp1pc/setup/jpc*xxxx*w.EXE	PFM - Web Console	*installation-folder*\setup

Legend:

xxxx indicates the service key of each PFM - Agent or PFM - RM. For details on service keys, see the appropriate PFM - Agent or PFM - RM manual.

(b) Executing the setup command in PFM - Web Console

Execute the following command on PFM - Web Console to set up PFM - Agent or PFM - RM.

```
jpcwagtsetup
```

You can delete the PFM - Agent or PFM - RM setup file on the PFM - Web Console host after this procedure has finished.

Note:

Even though PFM - Web Console is installed on the same host as PFM - Agent or PFM - RM, you must execute the jpcwagtsetup command.

(2) Specifying settings for the network ⟨ Options ⟩

Settings described in this subsection are only required if you change settings according to the network configuration on which Performance Management is used.

You can set the following item in network settings.

■ Setting port numbers

You can set the port numbers used by PFM - Web Console.

For details on setting port numbers, see *5.4.6 Changing PFM - Web Console settings*.

(3) Changing the initial settings ⟨ Options ⟩

Settings required to operate PFM - Web Console are defined in the initialization file (`config.xml`). This setting is only required if you wish to change these initial settings.

In the `config.xml` file, you can set settings related to the PFM - Web Console log files and the maximum value of data displayed in the console windows. For details, see *5.4.6 Changing PFM - Web Console settings*.

(4) Setting PFM - Manager for the connection destination of PFM - Web Console ⟨ Options ⟩

Set PFM - Manager for the connection destination of PFM - Web Console. Use the Windows initialization file (`config.xml`) to set PFM - Manager for the connection destination.

For details, see *5.4.6(1)(b) Setting PFM - Manager for the connection destination*.

(5) Creating an authentication key file for PFM - Web Console ⟨ Options ⟩

If you want to execute the PFM - Web Console commands, you must first execute the `jpcmkkey` command. For details on the `jpcmkkey` command, see the chapter describing the command in the manual *Job Management Partner 1/Performance Management Reference*.

5.1.6 Procedure for setting up the monitoring console browser

You need to configure the browser to use PFM - Web Console:

- Enable JavaScript
- Enable file downloads
- Enable Cookies
- Display images (GIF data)
- Check the page cache
- Set the font size

The following browsers are supported when you are using the monitoring console in a Windows environment:

Table 5-5: Supported browser if the monitoring console runs in Windows

Browser	Version	Supported in PFM - Web Console version:
Firefox	3	09-00 or later

Browser	Version	Supported in PFM - Web Console version:
Firefox	2.0.x	08-11 or later
Internet Explorer	8.0	09-00 or later
Internet Explorer	7.0	08-11 or later
Internet Explorer	6.0	08-00 or later

The following tables list the settings for each browser.

(1) When using Firefox 3

Table 5-6: Firefox 3 settings

Menu	Category	Setting item
Tools - Options	**Privacy - Cookies**	**Accept cookies from sites** (You can use any retention setting.)
	Content	**Load images automatically** **Enable JavaScript**
	Content - Enable Javascript	Click **Advanced**, and then select **Move or resize existing windows**.
	Content - Fonts & Colors	Use the default values.
	Content - Languages	Click **Languages**, and then move "**en**" to the top of the list.
	Security - Passwords	Clear the **Remember passwords for** **sites** check box.

(2) When using Firefox 2.0.x

Table 5-7: Firefox 2.0.x settings

Menu	Category	Setting item
Tools - Options	**Privacy - Cookies**	**Accept cookies from sites** You can use any retention setting.
	Content	**Load images automatically** **Enable JavaScript**
	Content - Enable Javascript	Click **Advanced**, and then select **Move or resize existing windows**.
	Content - Fonts & Colors	Use the default values.
	Security - Passwords	In **Passwords**, clear the **Remember passwords for sites** check box.
	Advanced - Languages	Move "**en**" to the top of the list.

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(3) When using Internet Explorer 8.0 or Internet Explorer 7.0

Table 5-8: Internet Explorer 8.0 or Internet Explorer 7.0 settings

Menu	Tab	Button	Setting item
Tools **- Internet** **Options**	**Security**	**Custom** **Level**	**Security Settings** **- Scripting** **- Active scripting** **- Enable**
			Security Settings **- Downloads** **- File download** **- Enable**
	Advanced	--	**Multimedia** **- Show pictures**
	General	**Browsing** **history** **- Settings**	**Check for newer versions of stored pages** **- Every time I visit the webpage** or **Automatically**
		Languages	When English languages coding such as **English/Australia [en-au]** or **English [en]** exists: In the **Language** list, click the **Move Up** button until the desired English language comes to the top. If there is no English language coding such as **English/Australia [en-au]** or **English [en]**: 1. Click the **Add** button. In the Add Language dialog box, select an English language coding from the **Language** list and then click the **OK** button. 2. In the **Language** list, click the **Move Up** button until the desired English language coding comes to the top.
View - Text **Size**	--	--	**Medium**

Legend:

    --: Not applicable

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(4) When using Internet Explorer 6.0

Table 5-9: Internet Explorer 6.0 settings

Menu	Tab	Button	Setting item
Tools **- Internet Options**	**Security**	**Custom Level**	**Security Settings** **- Scripting** **- Active scripting** **- Enable**
			Security Settings **- Downloads** **- File download** **- Enable**
	Advanced	--	**Multimedia** **- Show pictures**
	General	**Temporary Internet files** **- Settings**	**Check for newer versions of stored pages** **- Every visit to page** or **Automatically**
		Languages	When English languages coding such as **English/Australia [en-au]** or **English [en]** exists: In the **Language** list, click the **Move Up** button until the desired English language comes to the top. If there is no English language coding such as **English/ Australia [en-au]** or **English [en]**: 1. Click the **Add** button. In the Add Language dialog box, select an English language coding from the **Language** list and then click the **OK** button. 2. In the **Language** list, click the **Move Up** button until the desired English language coding comes to the top.
View - Text Size	--	--	**Medium**

Legend:

--: Not applicable

5.2 Uninstallation and unsetup

This section describes the uninstallation and unsetup procedures for the Performance Management programs.

5.2.1 Before uninstallation and unsetup

The following gives cautionary notes on uninstalling and performing unsetup of Performance Management:

(1) Notes on the OS user permission required for uninstallation

When you uninstall Performance Management programs, always use an account that has Administrators permissions.

(2) Notes on the network

Even though Performance Management programs are uninstalled, the port numbers defined in the `services` file are not deleted.

(3) Notes on programs

- Files or folders might remain if you uninstall Performance Management programs while other programs or services, or programs that reference Performance Management files (such as Windows Event Viewer) are running. In such cases, manually delete all of the folders and files in the installation folder.

- A message that prompts you to restart the system might be displayed if you uninstall a program while other Performance Management programs or services, or programs that reference Performance Management files (such as Windows Event Viewer) are running. In such cases, restart the system and complete the uninstallation.

- If a host has PFM - Base and either PFM - Agent or PFM - RM installed, you have to uninstall PFM - Agent or PFM - RM first in order to uninstall PFM - Base. In such cases, uninstall PFM - Agent or PFM - RM, and then uninstall PFM - Base. Additionally, if a host has PFM - Manager and either PFM - Agent or PFM - RM installed, you have to uninstall PFM - Agent or PFM - RM first to uninstall PFM - Manager. In such cases, uninstall PFM - Agent or PFM - RM, and then uninstall PFM - Manager.

(4) Notes on services

- Stop all Performance Management programs and services in the entire Performance Management system before you uninstall PFM - Manager.

- Uninstalling only PFM - Agent or PFM - RM does not delete the service information that can be displayed by using the `jpctool service list` command. In such cases, use the `jpctool service delete` command to

delete the service information. For details on how to delete the service information, see *5.2.3 Deleting the service information*

- If you uninstall PFM - Manager and then re-install it on the same machine, two Trap Generator services might be displayed when the `jpctool service list` command is executed. In such cases, start the PFM - Manager service and use the `jpctool service delete` command to delete the Trap Generator that is `Inactive`.

(5) Notes on PFM - Web Console

- The value of the *%SystemDrive%* environmental variable is referenced as the log output folder during the uninstallation of the program. If the *%SystemDrive%* environment variable has not been defined, the log file is not output.

- The log recorded during the uninstallation is output to *%SystemDrive%*\pfmwebconuninst.log. Also, the end code of the uninstaller is output to *%SystemDrive%*\pfmwebconuninst.rtn. In Windows Server 2008, an uninstallation log is not output.

- If the uninstallation fails, back up the log (*%SystemDrive%*\pfmwebconuninst.log) that was created during the uninstallation, remove the cause of the problem, and then uninstall the program again. If uninstalled programs do not include Performance Management - Web Console, install it and then uninstall it.

- If you uninstall while a list of services is displayed by selecting the Services applet (by choosing **Control Panel**, **Administrative Tools**, and then **Services** or by choosing **Control Panel**, **Administrative Tools**, **Computer Management**, **Services and Applications**, and then **Services**), it is possible that the name of **PFM - Web Service** or **PFM - Web Console** might not be deleted. Close such windows before the uninstallation.

- When you uninstall Performance Management programs from a host that has PFM - Web Console installed, close all browser windows first and then uninstall the programs.

- When the uninstallation of PFM - Web Console has finished, you must restart the system to disable the PFM - Web Console settings.

(6) Other related notes

- If an instance environment is set in PFM - Agent or PFM - RM, perform unsetup of the instance environment before uninstalling PFM - Agent or PFM - RM. For details on the unsetup procedure, see the chapters describing installation and setup in the appropriate PFM - Agent or PFM - RM manual.

- If the OpenView linkage facility is used, perform unsetup of the facility before uninstalling PFM - Manager or PFM - Base. For details on the unsetup procedure, see the chapter that describes the linkage with Network Node Manager (NNM)

for operation monitoring in the *Job Management Partner 1/Performance Management User's Guide*.

5.2.2 Uninstallation procedures

To uninstall Performance Management programs:

1. Log on with Administrators permissions to the host from which you intend to uninstall the Performance Management program.

2. Stop the Performance Management programs and services on the local host.

   Display the service information and make sure the services are not running. Stop all Performance Management programs and services that are running on the local host. All services on the physical host and logical host must be stopped.

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

3. Select a Performance Management program you wish to uninstall.

   In Windows **Control Panel**, select **Add/Remove Programs**[#] to select a Performance Management program that you wish to uninstall.

   To delete PFM - Manager or PFM - Base, you must uninstall all Performance Management programs except PFM - Web Console beforehand.

   #

   Depending on the Windows version, this name might vary.

4. Select **Delete** and click the **OK** button.

   The selected program is uninstalled.

Note on uninstalling in a Windows Server 2008 environment

If the User Account Control function (UAC) is active, the User Account Control dialog box might appear during uninstallation. If this dialog box appears, click the **Continue** button to continue the uninstallation. If you click the **Cancel** button, the uninstallation is canceled.

5.2.3 Deleting the service information

You must delete the service information displayed by the `jpctool service list` command in the following cases:

- When PFM - Agent or PFM - RM is uninstalled.

- When PFM - Manager for the connection destination is changed

- When the host name of PFM - Manager, PFM - Agent, PFM - RM, or PFM - Base was changed after starting the operation

If you have deleted the service information of the Action Handler service, you are no longer able to execute alarm actions using that Action Handler. Therefore, reset the Action Handler service that executes alarm action.

You can delete service information by using the `jpctool service delete` command. If communication is impossible because of physical reasons, such as when the LAN cable is disconnected from the PFM - Agent host, you cannot delete the service information normally. In this case, to forcibly delete service information, specify the -force option.

To delete service information:

1. Log on to the host where PFM - Manager is installed.

2. Execute the `jpctool service delete` command by specifying the service ID of the service you wish to delete.

    For example, to delete the information on the Agent Store service of PFM - Agent for Oracle on the host02, specify as follows:

    `jpctool service delete -id OS* -host host02`

3. Restart PFM - Manager.

4. Restart the PFM - Web Console.

5.3 Changing the Performance Management system configuration

You might need to change the Performance Management system configuration depending on configuration changes in systems being monitored. This section describes the procedures to change the Performance Management system configuration.

5.3.1 Changing the network configuration

This subsection describes the procedure to change the Performance Management settings when the network configuration is changed.

For details on commands, see the chapters that describe commands in the manual *Job Management Partner 1/Performance Management Reference*. For details on settings and notes about communication through a firewall between PFM - Manager and PFM - Web Console or between PFM - Manager and either PFM - Agent or PFM - RM, see the list of port numbers in the appendix of the manual *Job Management Partner 1/ Performance Management Reference*.

(1) Procedure on the PFM - Manager host and either PFM - Agent host or PFM - RM host

This subsection describes the procedure to change network settings on the PFM - Manager host and either PFM - Agent host or PFM - RM host.

(a) Setting IP addresses

You need to set IP addresses if you wish to specify IP addresses to use Performance Management in a network environment connected to multiple LANs.

To set IP addresses, directly edit the content of the jpchosts file.

Note:

> If you have set the jpchosts file, the definitions in the hosts file or DNS are not referenced for a host name defined in the jpchosts file. Therefore, the IP address obtained from a host name must be defined in the jpchosts file.

To set IP addresses:

1. Use a text editor or a similar tool to open the jpchosts file.

   The jpchosts file is stored in the installation folder.

2. Edit the jpchosts file.

   For example, if there is a hostA with the IP address 20.108.41.1 and a hostB with the IP addresses 20.108.41.2 and 20.108.41.3, set the IP addresses of the hosts as follows:

```
hostA 20.108.41.1
hostB 20.108.41.2, 20.108.41.3
```

If you want to provide an alias name *aliasA* to a host whose IP address is 20.108.41.1, specify the name as follows:

```
aliasA 20.108.41.1
```

- If more than one IP address is set for one host, the first specified IP address has priority.
- IP address settings becomes invalid if any of the following conditions are met:

  - When the host name length is 33 bytes or longer

  - When the host name is `localhost`

  - When an IP address in dotted decimal format is used for the host name (example: 172.16.233.12)

  - When the host name starts with a hyphen (`-`)

  - When the host name includes the following characters or space characters:

    `\ / : , ; * ? " > < | . =`
- Specify IP addresses in dotted decimal format (for example: 172.16.233.12).
- You can specify up to 16 IP addresses for one host.

3. Stop Performance Management on the host whose IP address you set, and then copy the `jpchosts` file according to the instructions in note 2 below.

4. Restart Performance Management on the host.

   The information settings for the `jpchosts` file become valid when Performance Management is restarted.

Note 1

In name resolution using the `jpchosts` file, when the IP address that is set first becomes invalid, the system does not simply continue to use the IP address set second. For the next and subsequent communications, an attempt is made to use the first IP address and then the following addresses in order.

Note 2

Determining whether to add settings for a PFM - Manager host to `jpchosts`

1. When the PFM - Manager host uses a single NIC:

`jpchosts` of PFM - Manager: Setting not required.

`jpchosts` of PFM - Agent or PFM - RM that connects to PFM - Manager: Setting not required.

2. When the PFM - Manager host uses two or more NICs:

`jpchosts` of PFM - Manager: Specify the IP address you want to allocate to PFM - Manager.

`jpchosts` of PFM - Agent or PFM - RM connected to PFM - Manager: Specify the IP address you want to allocate to PFM - Manager.

Determining whether to add settings for a PFM - Agent or PFM - RM host to `jpchosts`

Perform the steps below for each PFM - Agent or PFM - RM host in the system.

1. When the PFM - Agent or PFM - RM host uses a single NIC:

`jpchosts` of PFM - Manager: Setting not required.

`jpchosts` of the confirmed instance of PFM - Agent or PFM - RM: Setting not required.

`jpchosts` of other instances of PFM - Agent or PFM - RM: Setting not required.

2. When the PFM - Agent or PFM - RM host uses two or more NICs:

`jpchosts` of PFM - Manager: Specify the IP address that you want to allocate to PFM - Agent or PFM - RM.

`jpchosts` of the confirmed instance of PFM - Agent or PFM - RM: Specify the IP address you want to allocate to the PFM - Agent or PFM - RM.

`jpchosts` of other instances of PFM - Agent or PFM - RM: Setting not required.

Note: If you want the PFM - Agent or PFM - RM to be able to communicate with another PFM - Agent host or PFM - RM host during operations such as using the `jpctool db backup` command, `jpctool db clear` command, `jpctool db dump` command, or `jpctool service list` command, you need to add the setting for the confirmed instance of PFM - Agent or PFM - RM to the `jpchosts` file.

(b) Setting port numbers

Set a fixed port number for each service when you want to operate the Performance Management system with fixed port numbers for reasons such as to allow

communication through a firewall between PFM - Manager and PFM - Web Console, or between PFM - Manager and either PFM - Agent or PFM - RM.

Use the `jpcconf port define` command to set a fixed port number for each service or change port numbers that have been set. Use the Windows initialization file (`config.xml`) to set the port numbers on the PFM - Web Console side.

For procedures on setting port numbers, see the description of firewall routing in the appendixes of the manual *Job Management Partner 1/Performance Management Reference*.

Supplemental information:

To avoid confusion during operations, use the same port numbers and service names throughout the entire Performance Management system.

To set port numbers:

1. Execute the `jpcconf port define` command.

   For example, to set fixed values to the port numbers for all services, specify and execute the command as follows:

   ```
   jpcconf port define -key all
   ```

2. Set a port number for the individual services.

   Executing the `jpcconf port define` command displays the currently set port number or default port number.

   For example, the current port number 22285 for the Name Server service is displayed as follows:

   ```
   Component[Name Server]
   ServiceID[PN1001]
   Port[22285]
        :
   ```

   Actions vary depending on how you set the port number. The following table lists and describes the settings and actions. As long as there is no duplicate port numbers in the system, use the port number displayed by the `jpcconf port define` command as is.

Setting	Action
To use the displayed number as the fixed port number for a service	Press the return key.

Setting	Action
To change the displayed port number to another number	Enter a port number between 1024 - 65535. However, you cannot specify the port numbers currently used by the system.
Port numbers that are not fixed	Enter 0. However, you cannot fix port numbers for the following services: If you enter 0, the default value is set. • Name Server service • View Server service (between PFM - Web Console and View Server service) • NNM Object Manager service • Status Server service

Notes:

- If Performance Management programs and services are running when you set port numbers, stop the services and then execute the `jpcconf port define` command. After completing the port number settings, manually start the services.

- The port number cannot be set correctly if you use the **Ctrl+C** key command to interrupt execution of the `jpcconf port define` command. Execute the `jpcconf port define` command again to set the port number.

3. Execute the `jpcconf port list` command again to check if the port number has been set correctly.

   For example, to display the port numbers used by all services, specify and execute the command as follows:

   ```
   jpcconf port list -key all
   ```

   If `<error>` is displayed in the Service area or Port area, the port numbers have not been set correctly. Set the port numbers again. One of the following could be the cause of the error:

   - The port number is not registered in the `services` file.

   - The same port number is already registered in the `services` file.

(2) Setting procedure on the PFM - Web Console host

Use the Windows initialization file (`config.xml`) to change the network settings on the PFM - Web Console side.

For details on how to change the `config.xml` file, see *5.4.6 Changing PFM - Web Console settings*.

5.3.2 Changing PFM - Manager for the connection destination

This subsection describes how to change PFM - Manager for the connection destination after the Performance Management system is configured.

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

(1) Procedure on the PFM - Agent or PFM - RM host

Use the `jpcconf mgrhost define` command to change PFM - Manager for the connection destination of PFM - Agent or PFM - RM.

If you installed PFM - Agent or PFM - RM on the same host as PFM - Manager, or if you set PFM - Manager for the connection destination during the installation of PFM - Base, this step is unnecessary.

Notes:

- PFM - Agent cannot connect to more than one instance of PFM - Manager. You can set only one instance of PFM - Manager for the connection destination for one monitoring agent. Therefore, if multiple instances of PFM - Agent or PFM - RM are installed on the same monitoring agent, you cannot set a different instance of PFM - Manager as the connection destination for each instance of PFM - Agent or PFM - RM.

- If PFM - Agent or PFM - RM and PFM - Manager are installed on the same host, PFM - Manager for the connection destination is set to PFM - Manager on the local host. In such cases, you cannot change PFM - Manager for the connection destination to PFM - Manager on the remote host.

- Before you attempt to change PFM - Manager for the connection destination, stop all Performance Management programs and services running on the local host.

- If the version of PFM - Base is 09-00 or later and you have installed PFM - Agent or PFM - RM, without setting PFM - Manager for the connection destination, you *must* change PFM - Manager for the connection destination.

To change PFM - Manager for the connection destination:

1. Stop Performance Management programs and services.

   Stop all Performance Management programs and services that are running by using the `jpcspm stop` command.

   ```
   jpcspm stop -key jp1pc
   ```

2. Change PFM - Manager for the connection destination.

   Use the `jpcconf mgrhost define` command to change PFM - Manager for the connection destination. For example, if you wish to change PFM - Manager for the connection destination to PFM - Manager on the host *host02*, specify as follows:

   ```
   jpcconf mgrhost define -host host02
   ```

3. After the change, make sure that PFM - Manager for the new connection destination is running.

4. Restart the Performance Management programs and services on the PFM - Agent host or PFM - RM host.

In addition, in PFM - Manager for the connection destination before the change, delete all service information of the Performance Management programs to which the host name of PFM - Agent or PFM - RM is added. For details on how to delete service information, see *5.2.3 Deleting the service information*.

(2) Procedure on the PFM - Web Console host

Change the information in the Windows initialization file (`config.xml`) to change PFM - Manager for the connection destination. For details, see *5.4.6(1)(b) Setting PFM - Manager for the connection destination*.

5.3.3 Changing the host name in a Performance Management system

This subsection describes how to change the host name in a Performance Management system. A host name that is applied to the Performance Management system is called a *monitoring host name*.

Reference note:

The monitoring host name forms part of the service ID (that is, device name). For example, if you installed PFM - Agent for Platform (Windows) on a host whose monitoring host name is `HostA`, the service ID of Agent Collector is `TA1HostA`. If you use the product name display function, the service ID is `HostA<Windows>`.

By default, the *real host name* is used as the monitoring host name (obtained from OS with the `hostname` command).

For a Performance Management system existing within a physical host environment, you can set an *alias name* (any given host name) as the monitoring host name. This function is called the *function for setting monitoring-host names*.

For example, in a monitoring environment with multiple hosts sharing the same real host name, this allows you to distinguish the hosts by the alias name.

To identify the monitoring host name currently used by the Performance Management system, you must execute the following command. In this command, `hostmode` represents the method used to obtain the monitoring host name, and `hostname` represents the monitoring host name.

```
jpcconf host hostmode -display
```

Example

```
hostmode  : hostname

hostname  : hostA
```

The following table describes the relationship between the monitoring host name and the method used to obtain the name.

Table 5-10: Relationship between the monitoring host name and the method used to obtain the name

Method for acquiring a monitoring host name	Monitoring host name
hostname	Physical host name (displayed by using the `hostname` command)
alias	Alias name

To set an alias name for the monitoring host name, you must execute the `jpcconf host hostmode` command to set alias as the method used to obtain the monitoring host name.

If you execute the `jpcconf host hostmode` command, all existing information, such as definition and performance information, is inherited. For details on the `jpcconf host hostmode` command, see the chapters that describe commands in the manual *Job Management Partner 1/Performance Management Reference*.

Note:

Do not execute any other commands while executing the `jpcconf host` command. If you execute another command, both the `jpcconf host` command and the executed command might fail.

(1) Changing the monitoring host name of the PFM - Manager host

You must perform operations on the following hosts when changing the monitoring host name of the PFM - Manager host:

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- PFM - Manager host
- PFM - Web Console host
- PFM - Agent or PFM - RM host
- Monitoring console

The following figure shows the process flow.

Figure 5-5: Process flow for changing the monitoring host name of the PFM - Manager host

Legend: ⬡ : Step associated with a Performance Management program

[ ] : See the indicated step
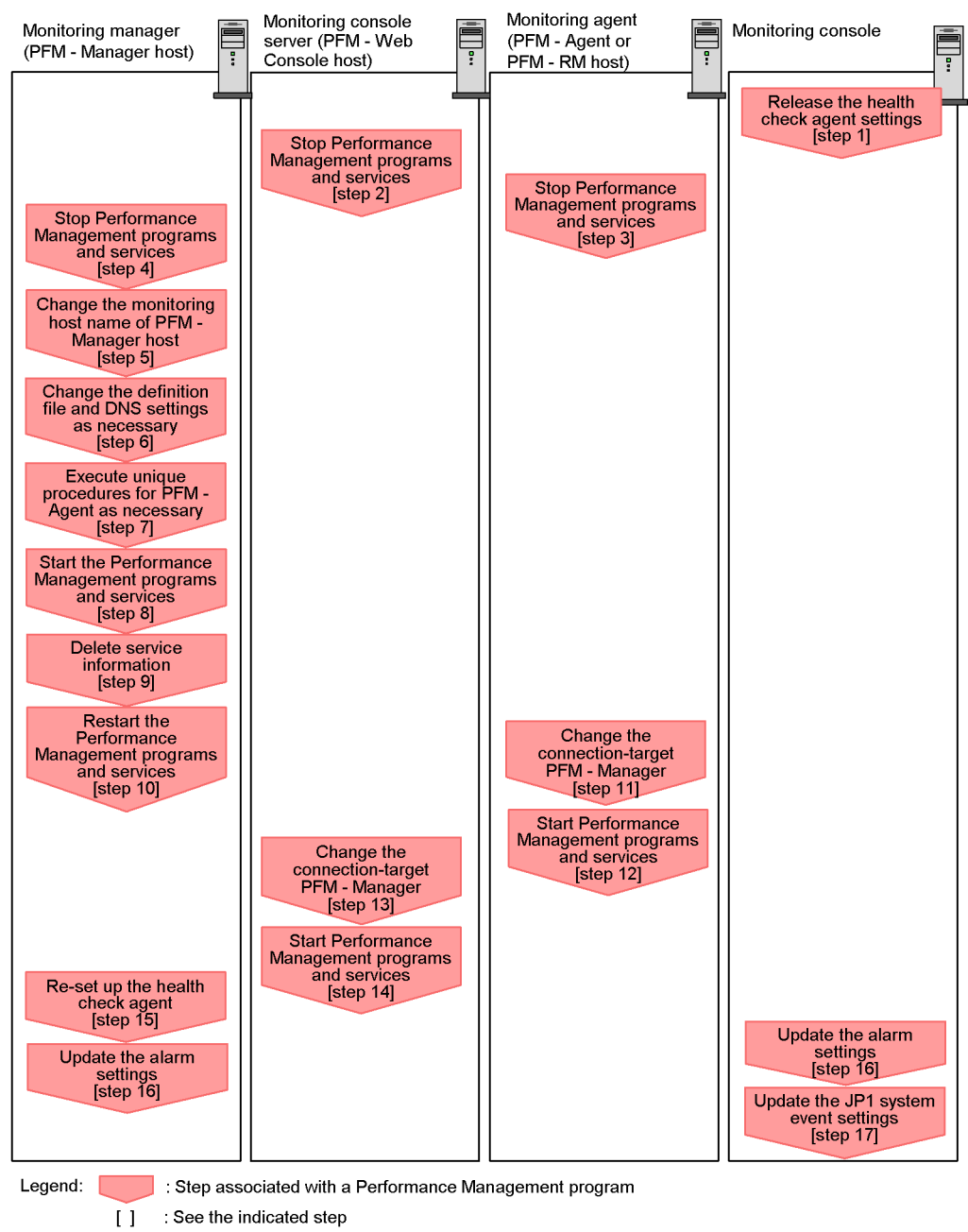
To change the monitoring host name of the PFM - Manager host (each step corresponds to the step number in the above figure):

1. Clear the setting for the health check agent.

   If you have been using the health check function, use the PFM - Web Console browser to delete the definition for the health check agent. (To delete an agent definition, delete the agent definition from a management folder in the Agents tree, and then delete the linkage with an alarm table.) For details on the procedure for changing the agent definition, see the chapter that describes monitoring agents or the operation monitoring with alarms in the *Job Management Partner 1/ Performance Management User's Guide*.

2. Stop the services on the PFM - Web Console host.

   On the PFM - Web Console host connected to PFM - Manager for which you intend to change the host name, stop all Performance Management programs and services. To stop services, use the jpcwstop command.

3. Stop the services on the PFM - Agent or PFM - RM host.

   On the PFM - Agent or PFM - RM host connected to PFM - Manager for which you intend to change the host name, stop all Performance Management programs and services. To stop services, use the `jpcspm stop` command.

4. Stop the services on the PFM - Manager host.

   Stop all Performance Management programs and services on the PFM - Manager host for which you intend to change the host name. To stop services, use the `jpcspm stop` command.

5. Change the monitoring host name of the PFM - Manager host.

   Execute the `jpcconf host hostmode` command to change the method of acquiring a monitoring host name. To use an alias name (`aliasA`) to acquire a monitoring host name:

   ```
   jpcconf host hostmode -mode alias -aliasname aliasA -d
   d:\backup -dbconvert convert
   ```

   For details on the `jpcconf host hostmode` command, see the chapters that describe commands in the manual *Job Management Partner 1/Performance Management Reference*.

Reference note:

>> The folder specified for the `-d` option in the `jpcconf host hostmode` command must have disk space that is equal to or greater than the total size of the PFM - Agent and PFM - RM Store databases on the specified host.

>> For example, if the health check agent, PFM - Agent for Platform, and PFM - Agent for Oracle are on the specified host, empty disk space equal to or greater than the total size of the Store databases of those agents is required. However, you do not need to include the size of Store database for the PMF - Manager Master Store service in the total size.

6. Change the settings of the `jpchosts` file, `hosts` file, and DNS, if necessary.

7. Perform the Agent-specific procedure, if necessary.

   If PFM - Agent has been installed on the PFM - Manager host, the PFM - Agent-specific procedure might be necessary. The following table describes whether the PFM - Agent-specific procedure is necessary.

   Table 5-11: PFM - Necessity of the Agent-specific procedure

Configuration			Necessity and reference
The version of PFM - Agent installed on the PFM - Manager host is 09-00 or later.			Whether the PFM - Agent-specific procedure is necessary depends on PFM - Agent. For details on the PFM - Agent-specific procedure, see the chapters describing the installation and setup in the PFM - Agent manuals.
The version of PFM - Agent installed on the PFM - Manager host is earlier than 09-00.	The following PFM-Agent: • PFM - Agent for Enterprise Applications • PFM - Agent for Microsoft SQL Server		The Agent-specific procedure is necessary. For details on the PFM - Agent-specific procedure, see *(4) Optional Agent-specific steps for host name changes*.
	For all other cases (including the case that PFM - RM is installed on the PFM - Manager)		The Agent-specific procedure is not necessary.

   If the PFM - Agent-specific procedure is necessary, perform the procedure indicated in the table above, and then proceed to the following steps.

8. Start the services on the PFM - Manager host.

   Start the Performance Management programs and services on the PFM - Manager host. To start the services, use the `jpcspm start` command.

9. Delete service information on the PFM - Manager host.

   Even though the PFM - Manager host name is changed, the service information of the Performance Management programs with the old host name remains the same. If you changed the PFM - Manager host name, you need to delete the old PFM - Manager service information. For example, to delete all information on the PFM - Manager host (`hostA`), execute the following command on `hostA`:

   ```
   jpctool service delete -id P* -host hostA
   jpctool service delete -id 0* -host hostA
   ```

   For details on the `jpctool service delete` command, see the chapters that describe commands in the manual *Job Management Partner 1/Performance Management Reference*.

10. Restart the services on the PFM - Manager host.

    To refresh information, start the Performance Management programs and services on the PFM - Manager host. To start the services, use the `jpcspm start` command.

11. Change the settings for PFM - Manager for the connection destination on the PFM - Agent or PFM - RM host.

    Change the settings for PFM - Manager for the connection destination on the PFM - Agent or PFM - RM host connected to PFM - Manager for which you have changed the host name. Use the `jpcconf mgrhost define` command to change the settings for PFM - Manager for the connection destination. For example, if the host name of PFM - Manager for the connection destination is changed to `hostB`, specify and execute the command as follows

    ```
    jpcconf mgrhost define -host hostB
    ```

    For details on the `jpcconf mgrhost define` command, see the chapters that describe commands in the manual *Job Management Partner 1/Performance Management Reference*.

12. Start the services on the PFM - Agent or PFM - RM host.

    Start the Performance Management programs and services on the PFM - Agent or PFM - RM host connected to PFM - Manager for which you have changed the host name. To start services, use the `jpcspm start` command.

13. Change the settings of PFM - Manager for the connection destination on the PFM - Web Console host.

    Change the settings for PFM - Manager for the connection destination on the PFM - Web Console host connected to PFM - Manager for which you have changed the

host name. Change the information in the Windows initialization file (`config.xml`) to change the settings for PFM - Manager for the connection destination. For details, see *5.4.6(1)(b) Setting PFM - Manager for the connection destination*.

14. Start the services on the PFM - Web Console host.

Start the Performance Management programs and services on the PFM - Web Console host connected to PFM - Manager for which you have changed the host name. To start services, use the `jpcwstart` command.

15. Reconfigure the definition for the health check agent.

If you have been using the health check function, reconfigure the definition (that was cleared in step 1) of the health check agent after changing the host name.

16. Update the alarm settings.

In the following cases, you must update the alarm settings by using the `jpctool alarm` command of the PFM - Manager host or the monitoring console:

- The action handler of the PFM - Manager host is specified for the action handler that executes actions.

  Edit the alarm to set `PH1<`*new-pfm-manager-host-name*`>` for the action handler that executes actions.

- JP1 events are issued by actions.

  Set the JP1 event settings in the action again.

For details on how to edit alarms, see the chapter that describes the operation monitoring with alarms in the *Job Management Partner 1/Performance Management User's Guide*.

17. Update the JP1 system event settings.

If one of the following conditions is met, you need to update the JP1 system event settings by using the PFM - Web Console browser:

- The previous host name has been specified as the name of the event server to which JP1/Base connects.

- The previous host name has been specified as the host name of the monitoring console for JP1 system events.

18. Check whether the JP1 system event settings have been properly updated.

Check the following items after changed the settings:

- Collection of performance data

  Make sure that performance data can be collected for a period at least twice as long as the time period specified as the collection interval (**Collection**

Interval).

- Execution of the `jpctool db dump` command

  Make sure that there is no problem in outputting the collected performance data.

- Check of the report definition and alarm definition

  Make sure that there is no problem with the report definition and alarm definition created in the browser.

- Check of the actions

  Make sure that there is no problem in executing the created alarm actions.

(2) Changing the monitoring host name of the PFM - Agent or PFM - RM host

You must perform operations on the following hosts when changing the monitoring host name of the PFM - Manager or PFM - RM host:

- PFM - Manager host
- PFM - Web Console host
- PFM - Agent or PFM - RM host
- Monitoring console

The following figure shows the process flow.

Figure 5-6: Process flow for changing the monitoring host name of the PFM - Agent or PFM - RM host
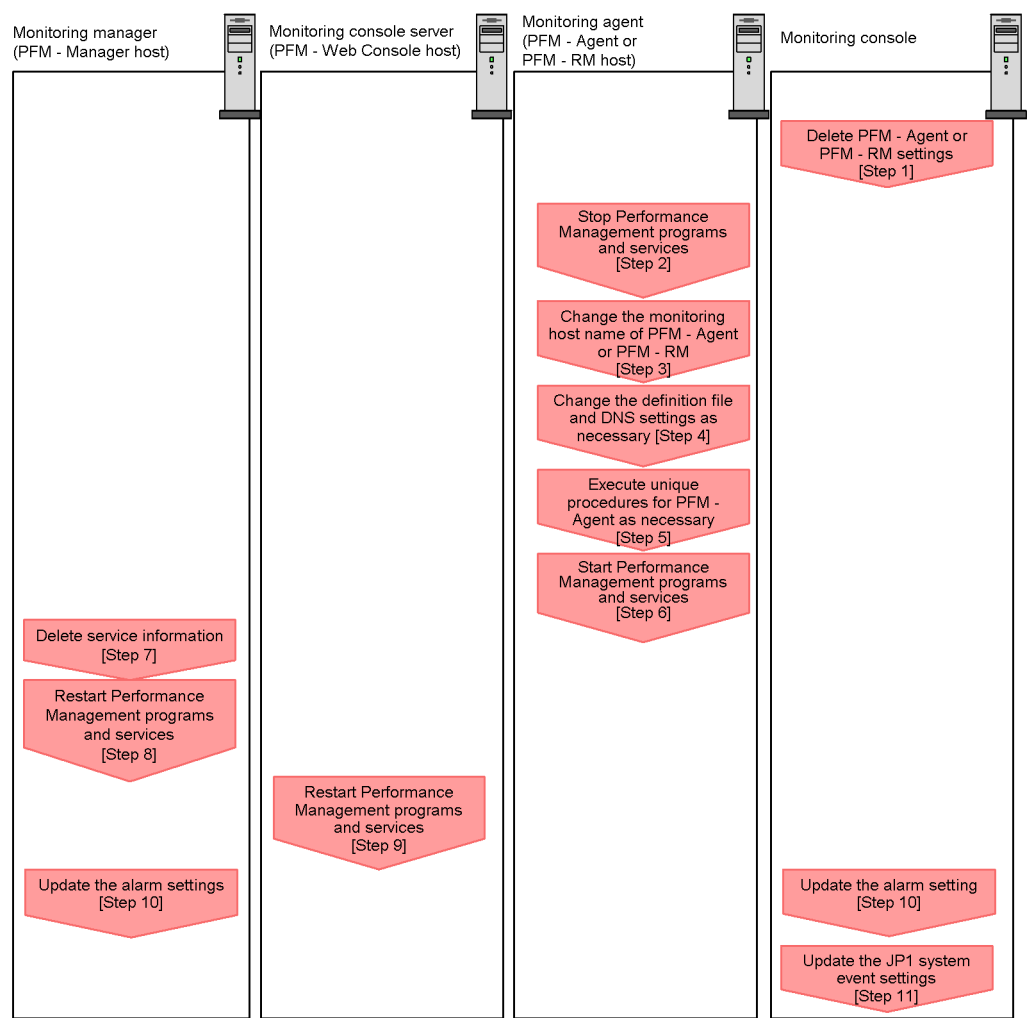
Legend:

: Procedure to configure Performance Management

[   ] : See the indicated step.

To change the monitoring host name of the PFM - Agent or PFM - RM (each step corresponds to the step number in the above figure):

1. Delete the settings for PFM - Agent or PFM - RM.

   Use the PFM - Web Console browser to delete the agent definition for the PFM - Agent or PFM - RM host whose name is to be changed. (To delete an agent definition, delete the agent definition from a management folder in the Agents tree, and then delete the linkage with an alarm table.)

   For details on the procedure for changing the agent definition, see the chapter that describes monitoring agents or the operation monitoring with alarms in the *Job Management Partner 1/Performance Management User's Guide*.

2. Stop the services on the PFM - Agent or PFM - RM host.

   Stop all Performance Management programs and services on the PFM - Agent or PFM - RM host for which you intend to change the host name. To stop the services, use the `jpcspm stop` command.

3. Change the monitoring host name of the PFM - Agent or PFM - RM host.

   Execute the `jpcconf host hostmode` command to change the method of acquiring a monitoring host name. The following shows an example of using an alias name (`aliasA`) to acquire a monitoring host name:

   ```
   jpcconf host hostmode -mode alias -aliasname aliasA -d
   d:\backup -dbconvert convert
   ```

   For details on the `jpcconf host hostmode` command, see the chapters that describe commands in the manual *Job Management Partner 1/Performance Management Reference*.

Reference note:

   The folder specified for the `-d` option in the `jpcconf host hostmode` command must have empty disk space that is equal to or greater than the total size of the Store database of each instance of PFM - Agent and PFM - RM on the specified host.

   For example, if PFM - Agent for Platform and PFM - Agent for Oracle are on the specified host, empty disk space equal to or greater than the total size of the Store databases of those agents is required. However, you do not need to include the size of Store database for the PMF - Manager Master Store service in the total size.

4. Change the settings of the `jpchosts` file, `hosts` file, and DNS, if necessary.

5. Perform the Agent-specific procedure, if necessary.

   The following table describes whether the PFM - Agent-specific procedure is necessary.

Table 5-12: PFM - Necessity of the Agent-specific procedure

Configuration		Necessity and reference
The version of PFM - Agent on which the monitoring host name is changed is 09-00 or later.		Whether the PFM - Agent-specific procedure is necessary depends on PFM - Agent. For details on the PFM - Agent-specific procedure, see the chapters describing the installation and setup in the PFM - Agent manuals.
The version of PFM - Agent on which the monitoring host name is changed is earlier than 09-00.	The following PFM-Agent: • PFM - Agent for Enterprise Applications • PFM - Agent for Microsoft SQL Server	The Agent-specific procedure is necessary. For details on the PFM - Agent-specific procedure, see *(4) Optional Agent-specific steps for host name changes*.
	For all other cases (including the case that the monitoring host name of the PFM - RM host is changed.)	The Agent-specific procedure is not necessary.

If the PFM - Agent-specific procedure is necessary, perform the procedure indicated in the table above, and then proceed to the following steps.

6. Start the services on the PFM - Agent or PFM - RM host.

    Start Performance Management programs and services on the PFM - Agent or PFM - RM host for which you have changed the host name. To start the services, use the jpcspm start command.

7. Delete service information on the PFM - Manager host.

    Even though the PFM - Agent or PFM - RM host name is changed, the service information of Performance Management programs to which the old host name is added remains the same. You need to delete the old PFM - Agent or PFM - RM service information on the PFM - Manager host. For example, to delete the information on the Agent Store service of PFM - Agent for Oracle on the PFM - Agent or PFM - RM host (hostB), execute the following command on the PFM - Manager host:

    ```
    jpctool service delete -id OS* -host hostB
    ```

8. Restart the services on the PFM - Manager host.

    To refresh information, restart the Performance Management programs and services on the PFM - Manager host. To start the services, use the jpcspm start

command.

9. Restart the services on the PFM - Web Console host.

   Start the Performance Management programs and services on the PFM - Web Console host connected to PFM - Manager. To start the services, use the `jpcwstart` command.

10. Update the alarm settings.

    In the following cases, you must update the alarm settings by using the `jpctool alarm` command of the PFM - Manager host or the monitoring console:

    - The action handler of the PFM - Agent or PFM - RM host is specified for the action handler that executes actions.

      Edit the alarm to set PH1<*new-pfm-agent-or-pfm-rm-host-name*> for the action handler that executes actions.

    - JP1 events are issued by actions.

      Set the JP1 event settings in the action again.

    For details on how to edit alarms, see the chapter that describes the operation monitoring with alarms in the *Job Management Partner 1/Performance Management User's Guide*.

11. Update the JP1 system event settings.

    If one of the following conditions is met, you need to update the JP1 system event settings by using the PFM - Web Console browser:

    - The previous host name has been specified as the name of the event server to which JP1/Base connects.

    - The previous host name has been specified as the host name of the monitoring console for JP1 system events.

12. Check whether the JP1 system event settings have been properly updated.

    Check the following items after changed the settings:

    - Collection of performance data

      Make sure that performance data can be collected for a period at least twice as long as the time period specified as the collection interval (**Collection Interval**).

    - Execution of the `jpctool db dump` command

      Make sure that there is no problem in outputting the collected performance data.

    - Check of the report definition and alarm definition

Make sure that there is no problem with the report definition and alarm definition created in the browser.

- Check of the actions

Make sure that there is no problem in executing the created alarm actions.

(3) Notes

Note the following when using the function for setting monitoring-host names:

■ If you use an alias name, the IP address of the host must be resolved through the alias name. If you only want to resolve the IP address for the Performance Management system, use the jpchosts file to define the IP address resolution. For details on how to edit the jpchosts file, see *5.3.1 Changing the network configuration*. To link the Performance Management system with other systems, you must configure the IP address to be resolved by either the hosts file or DNS definition.

■ If you use the function for setting monitoring-host names, depending on the type of PFM - Agent or PFM - RM, the host name output to the common message log might be different from the actual operating host name.

■ Even if you use the function for setting monitoring-host names immediately after installation, you must perform the steps described above in *(1) Changing the monitoring host name of the PFM - Manager host* and *(2) Changing the monitoring host name of the PFM - Agent or PFM - RM host*.

(4) Optional Agent-specific steps for host name changes

This subsection describes the PFM - Agent-specific steps necessary to perform the following operations for each product:

- Changing the monitoring host name of the PFM - Manager host
- Changing the monitoring host name of the PFM - Agent or PFM - RM host

For details on when this procedure is required, see *(1) Changing the monitoring host name of the PFM - Manager host* or *(2) Changing the monitoring host name of the PFM - Agent or PFM - RM host*.

(a) In PFM - Agent for Enterprise Applications

Execute the jpcconf inst setup command for all the created instance environments. For example, if an instance environment o246bci_SD5_00 exists in PFM - Agent for Enterprise Applications, execute the following command:
jpcconf inst setup -key agtm -inst o246bci_SD5_00

The jpcconf inst setup command is an interactive command that returns a command prompt when executed. At the ASHOST prompt, enter the new host name, and press the **Enter** key at the other prompts. If the **Enter** key is pressed at a prompt

without entering a value, the existing value is assumed.

(b) In PFM - Agent for Microsoft SQL Server

Execute the `jpcconf inst setup` command for all the created instance environments. For example, if an instance environment `default` exists in PFM - Agent for Microsoft SQL Server, execute the following command:
`jpcconf inst setup -key agtq -inst default`

The `jpcconf inst setup` command is an interactive command that returns a command prompt when executed. At the `SQL_HOST` prompt, enter a new host name, and press the **Enter** key at the other prompts. If the **Enter** key is pressed at a prompt without entering a value, the existing value is assumed.

5.3.4 Changing the physical host name after the operation starts

This subsection describes the procedures (performed on the Performance Management system) necessary for changing the physical host name of the PFM - Manager host, PFM - Agent host, or PFM - RM host after the Performance Management system is configured.

First, identify the monitoring host name currently used by the Performance Management system. To identify the monitoring host name used by the Performance Management system, execute the command below. In this command, `hostmode` represents the method used to obtain the monitoring host name, and `hostname` represents the monitoring host name.

```
jpcconf host hostmode -display
```

Example

```
hostmode  : hostname

hostname  : hostA
```

The following table describes the relationship between the monitoring host name and the method used to obtain the name.

Table 5-13: Relationship between the monitoring host name and the method used to obtain the name

Method for acquiring a monitoring host name	Monitoring host name
Hostname	Physical host name (displayed by using the `hostname` command)
Alias	Alias name

If the method used to obtain the monitoring host name is set to `alias`, you do not need

to perform the steps described here. This is because the monitoring host name of the Performance Management system is the alias name, even if you change the physical host name of the machine.

If the method used to obtain the monitoring host name is set to `hostname`, you must perform the steps described above in *(1) Changing the PFM - Manager host name* and *(2) Changing the PFM - Agent or PFM - RM host name*.

If you execute the `jpcconf host hostname` command, all existing information, such as definition and performance information, is inherited. For details on the `jpcconf host hostname` command, see the chapters that describe commands in the manual *Job Management Partner 1/Performance Management Reference*.

Note:

> Do not execute any other commands while executing the `jpcconf host` command. If you execute another command, both the jpcconf host command and the executed command might fail.

(1) Changing the PFM - Manager host name

You must perform operations on the following hosts when changing the PFM - Manager host name:

- PFM - Manager host
- PFM - Web Console host
- PFM - Agent or PFM - RM host
- Monitoring console

The following figure shows the process flow.

Figure 5-7: Process flow for changing the PFM - Manager host name

Monitoring manager
(PFM - Manager host)

Monitoring console server
(PFM - Web Console host)

Monitoring agent
(PFM - Agent or PFM - RM host)

Monitoring console

Cancel the health check agent setting
[Step 1]

Stop Performance Management programs and services
[Step 2]

Stop Performance Management programs and services
[Step 3]

Stop Performance Management programs and services
[Step 4]

Change the monitoring host name of the PFM - Manager host
[Step 5]

Change the physical host name of the PFM - Manager host
[Step 6]

Execute the PFM - Agent-specific procedures as required
[Step 7]

Start Performance Management programs and services
[Step 8]

Delete service information on the PFM - Manager host
[Step 9]

Restart Performance Management programs and services
[Step 10]

Change the connection-target PFM - Manager
[Step 11]

Start Performance Management programs and services
[Step 12]

Change the connection-target PFM - Manager
[Step 13]

Start Performance Management programs and services
[Step 14]

Reset the health check agent
[Step 15]

Update the alarm settings
[Step 16]

Update the alarm settings
[Step 16]

To change the PFM - Manager host name (each step corresponds to the step number in the above figure):

1. Clear the setting for the health check agent.

   If you have been using the health check function, use the PFM - Web Console browser to delete the definition for the health check agent. (To delete an agent definition, delete the agent definition from a management folder in the Agents tree, and then delete the linkage with an alarm table.) For details on the procedure for changing the agent definition, see the chapter that describes monitoring agents or the operation monitoring with alarms in the *Job Management Partner 1/ Performance Management User's Guide*.

2. Stop the services on the PFM - Web Console host.

   On the PFM - Web Console host connected to PFM - Manager for which you intend to change the host name, stop all Performance Management programs and services. To stop the services, use the jpcwstop command.

3. Stop the services on the PFM - Agent or PFM - RM host.

   On the PFM - Agent or PFM - RM host connected to PFM - Manager for which you intend to change the host name, stop all Performance Management programs and services. To stop the services, use the `jpcspm stop` command.

4. Stop the services on the PFM - Manager host.

   Stop all Performance Management programs and services on the PFM - Manager host for which you intend to change the host name. To stop the services, use the `jpcspm stop` command.

5. Change the monitoring host name of the PFM - Manager host.

   Execute the `jpcconf host hostname` command to change the monitoring host name.

   To change a physical host name to `hostB`:

   ```
   jpcconf host hostname -newhost hostB -d d:\backup -dbconvert
   convert
   ```

   For details on the `jpcconf host hostname` command, see the chapters that describe commands in the manual *Job Management Partner 1/Performance Management Reference*.

Reference note:

> The folder specified for the -d option in the `jpcconf host hostmode` command must have disk space that is equal to or greater than the total size of the PFM - Agent and PFM - RM Store databases on the specified host.
>
> For example, if the health check agent, PFM - Agent for Platform, and PFM - Agent for Oracle are on the specified host, empty disk space equal to or greater than the total size of the Store databases of those agents is required. However, you do not need to include the size of Store database for the PMF - Manager Master Store service in the total size.

6. Change the physical host name of the PFM - Manager host.

Change the physical host name of the PFM - Manager host. Change the settings of the `jpchosts` file, `hosts` file, and DNS, if necessary. When the machine requires restarting, change the settings so that the Performance Management programs and services will not automatically start after the machine is restarted. After the PFM - Manager host operation has finished, return the settings so that the Performance Management programs and services start automatically.

7. Perform the Agent-specific procedure, if necessary.

If PFM - Agent has been installed on the PFM - Manager host, the PFM - Agent-specific procedure might be necessary. The following table describes whether the PFM - Agent-specific procedure is necessary.

Table 5-14: PFM - Necessity of the Agent-specific procedure

Configuration		Necessity and reference
The version of PFM - Agent installed on the PFM - Manager host is 09-00 or later.		Whether the PFM - Agent-specific procedure is necessary depends on PFM - Agent. For details on the PFM - Agent-specific procedure, see the chapters describing the installation and setup in the PFM - Agent manuals.
The version of PFM - Agent installed on the PFM - Manager host is earlier than 09-00.	The following PFM-Agent: • PFM - Agent for Enterprise Applications • PFM - Agent for Microsoft SQL Server	The Agent-specific procedure is necessary. For details on the PFM - Agent-specific procedure, see *(5) Optional Agent-specific steps for host name changes*.
	For all other cases (including the case that PFM - RM is installed on the PFM - Manager)	Agent-specific procedure is not necessary.

If the PFM - Agent-specific procedure is necessary, perform the procedure indicated in the table above, and then proceed to the following steps.

8. Start the services on the PFM - Manager host.

Start the Performance Management programs and services on the PFM - Manager host. To start the services, use the `jpcspm start` command.

9. Delete service information on the PFM - Manager host.

Even though the PFM - Manager host name is changed, the service information of the Performance Management programs with the old host name remains the same. If you changed the PFM - Manager host name, you need to delete the old PFM - Manager service information. For example, to delete all information on the PFM - Manager host (`hostA`), execute the following command on `hostA`:

```
jpctool service delete -id P* -host hostA
jpctool service delete -id 0* -host hostA
```

For details on the `jpctool service delete` command, see the chapters that describe commands in the manual *Job Management Partner 1/Performance Management Reference*.

10. Restart the services on the PFM - Manager host.

To refresh information, restart the Performance Management programs and services on the PFM - Manager host. To start the services, use the `jpcspm start` command.

11. Change the settings for PFM - Manager for the connection destination on the PFM - Agent or PFM - RM host.

Change the settings for PFM - Manager for the connection destination on the PFM - Agent or PFM - RM host connected to PFM - Manager for which you have changed the host name. Use the `jpcconf mgrhost define` command to change the settings for PFM - Manager for the connection destination. For example, if the host name of PFM - Manager for the connection destination is changed to `hostB`, specify and execute the command as follows:

```
jpcconf mgrhost define -host hostB
```

For details on the `jpcconf mgrhost define` command, see the chapters that describe commands in the manual *Job Management Partner 1/Performance Management Reference*.

12. Start the services on the PFM - Agent or PFM - RM host.

Start the Performance Management programs and services on the PFM - Agent or PFM - RM host connected to PFM - Manager for which you have changed the host name. To start services, use the `jpcspm start` command.

13. Change the settings of PFM - Manager for the connection destination on the PFM - Web Console host.

Change the settings for PFM - Manager for the connection destination on the PFM - Web Console host connected to PFM - Manager for which you have changed the host name. Change the information in the Windows initialization file (`config.xml`) to change the settings for PFM - Manager for the connection destination. For details, see *5.4.6(1)(b) Setting PFM - Manager for the connection destination*.

14. Start the services on the PFM - Web Console host.

Start the Performance Management programs and services on the PFM - Web Console host connected to PFM - Manager for which you have changed the host name. To start the services, use the `jpcwstart` command.

15. Reconfigure the definition for the health check agent.

If you have been using the health check function, reconfigure the definition (that has been cleared at step 1) of the health check agent after changing the host name.

16. Update the alarm settings.

In the following cases, you must update the alarm settings by using the `jpctool alarm` command of the PFM - Manager host or the monitoring console:

- The action handler of the PFM - Manager host is specified for the action handler that executes actions.

  Edit the alarm to set `PH1`<*new-pfm-manager-host-name*> for the action handler that executes actions.

- JP1 events are issued by actions.

  Set the JP1 event settings in the action again.

For details on how to edit alarms, see the chapter that describes the operation monitoring with alarms in the *Job Management Partner 1/Performance Management User's Guide*.

17. Update the JP1 system event settings.

If one of the following conditions is met, you need to update the JP1 system event settings by using the PFM - Web Console browser:

- The previous host name has been specified as the name of the event server to which JP1/Base connects.

- The previous host name has been specified as the host name of the

monitoring console for JP1 system events.

18. Check whether the JP1 system event settings have been properly updated.

Check the following items after changed the settings:

- Collection of performance data

  Make sure that performance data can be collected for a period at least twice as long as the time period specified as the collection interval (**Collection Interval**).

- Execution of the `jpctool db dump` command

  Make sure that there is no problem in outputting the collected performance data.

- Check of the report definition and alarm definition

  Make sure that there is no problem with the report definition and alarm definition created in the browser.

- Check of the actions

  Make sure that there is no problem in executing the created actions.

19. Log on to NNM again, if now linking with Network Node Manager (NNM) for operation monitoring.

(2) Changing the PFM - Agent or PFM - RM host name

You must work on the following hosts when changing the PFM - Agent or PFM - RM host name:

- PFM - Manager host
- PFM - Web Console host
- PFM - Agent or PFM - RM host
- Monitoring console

The following figure shows the process flow.

Figure 5-8: Process flow for changing the monitoring host name of the PFM - Agent or PFM - RM host
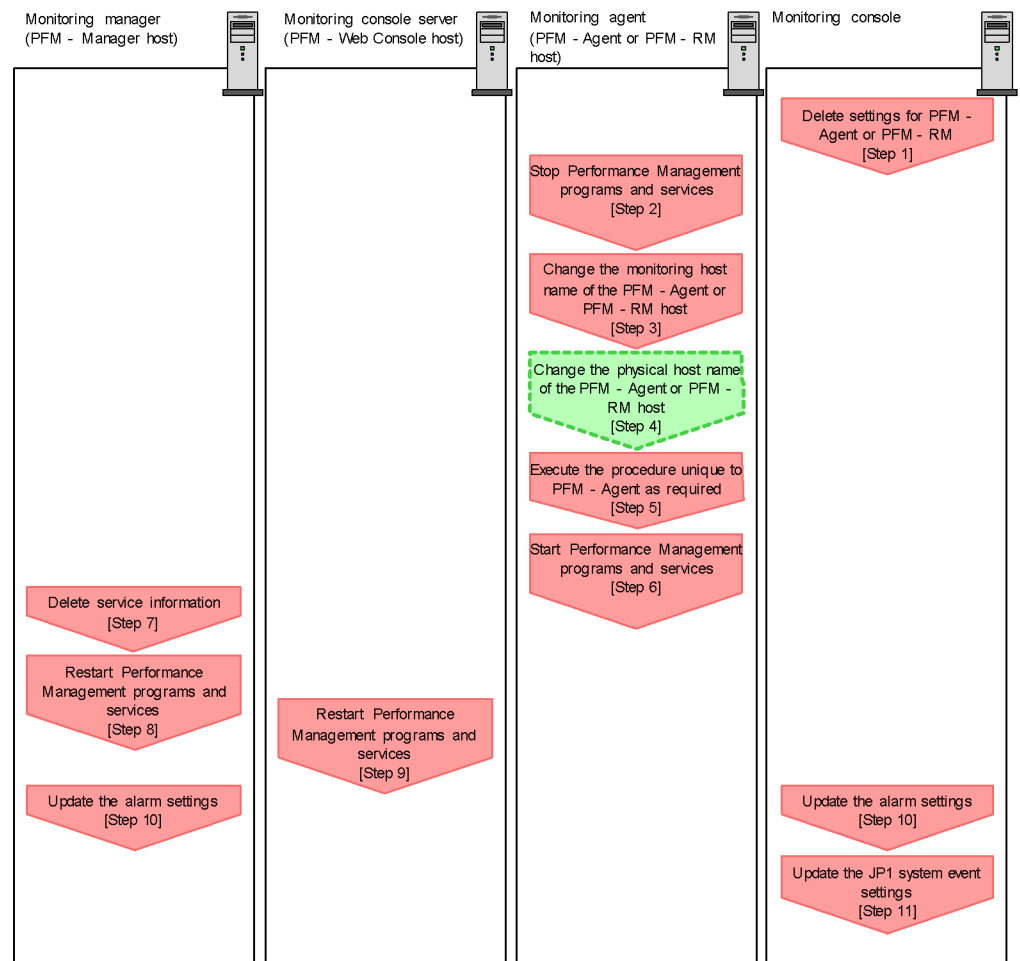
To change the PFM - Agent or PFM - RM host name (each step corresponds to the step number in the figure above):

1. Delete the PFM - Agent or PFM - RM setting.

   Use the PFM - Web Console browser to delete the agent definition for the PFM -

Agent or PFM - RM host whose name is to be changed. (To delete an agent definition, delete the agent definition from a management folder in the Agents tree, and delete the linkage with an alarm table.)

For details on the procedure for changing the agent definition, see the chapter that describes monitoring agents or the operation monitoring with alarms in the *Job Management Partner 1/Performance Management User's Guide*.

2. Stop the services on the PFM - Agent or PFM - RM host.

Stop all Performance Management programs and services on the PFM - Agent or PFM - RM host for which you intend to change the host name. To stop the services, use the `jpcspm stop` command.

3. Change the monitoring host name of the PFM - Agent or PFM - RM host.

Execute the `jpcconf host hostname` command to change the monitoring host name.

To change a physical host name to `hostB`:

```
jpcconf host hostname -newhost hostB -d d:\backup -dbconvert
convert
```

For details on the `jpcconf host hostname` command, see the chapters that describe commands in the manual *Job Management Partner 1/Performance Management Reference*.

Reference note:

The folder specified for the `-d` option in the `jpcconf host hostmode` command must have disk space that is equal to or greater than the total size of the PFM - Agent and PFM - RM Store databases on the specified host.

For example, if the health check agent, PFM - Agent for Platform, and PFM - Agent for Oracle are on the specified host, empty disk space equal to or greater than the total size of the Store databases of those agents is required. However, you do not need to include the size of Store database for the PMF - Manager Master Store service in the total size.

4. Change the physical host name of the PFM - Agent or PFM - RM host.

Change the physical host name of the PFM - Manager host. Change the settings of the `jpchosts` file, `hosts` file, and DNS, if necessary. When the machine requires restarting, change the settings so that the Performance Management programs and services will not automatically start after the machine is restarted. After the PFM - Manager host operation has finished, return the settings so that the Performance Management programs and services start automatically.

5. Perform the Agent-specific procedure, if necessary.

The following table describes whether the PFM - Agent-specific procedure is necessary.

Table 5-15: PFM - Necessity of the Agent-specific procedure

Configuration		Necessity and reference
The version of PFM - Agent on which the monitoring host name is changed is 09-00 or later.		Whether the PFM - Agent-specific procedure is necessary depends on PFM - Agent. For details on the PFM - Agent-specific procedure, see the chapters describing the installation and setup in the PFM - Agent manuals.
The version of PFM - Agent on which the monitoring host name is changed is earlier than 09-00.	The following PFM-Agent: • PFM - Agent for Enterprise Applications • PFM - Agent for Microsoft SQL Server	The Agent-specific procedure is necessary. For details on the PFM - Agent-specific procedure, see *(5) Optional Agent-specific steps for host name changes*.
	For all other cases (including the case that the monitoring host name of the PFM - RM host is changed.)	The Agent-specific procedure is not necessary.

If the PFM - Agent-specific procedure is necessary, perform the procedure indicated in the table above, and then proceed to the following steps.

6. Start the services on the PFM - Agent or PFM - RM host.

Start Performance Management programs and services on the PFM - Agent or PFM - RM host for which you have changed the host name. To start the services, use the jpcspm start command.

7. Delete service information on the PFM - Manager host.

Even though the PFM - Agent or PFM - RM host name is changed, the service information of Performance Management programs to which the old host name is added remains the same. You need to delete the old PFM - Agent or PFM - RM service information on the PFM - Manager host. For example, to delete the information on the Agent Store service of PFM - Agent for Oracle on the PFM - Agent or PFM - RM host (lhostB), execute the following command on the PFM - Manager host:

```
jpctool service delete -id OS* -host hostB
```

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8. Restart the services on the PFM - Manager host.

   Start the Performance Management programs and services on the PFM - Manager host. To start the services, use the `jpcspm start` command.

9. Restart the services on the PFM - Web Console host.

   Start the Performance Management programs and services on the PFM - Web Console host connected to PFM - Manager. To start the services, use the `jpcwstart` command.

10. Update the alarm settings.

    In the following cases, you must update the alarm settings by using the `jpctool alarm` command of the PFM - Manager host or the monitoring console:

    - The action handler of the PFM - Agent or PFM - RM host is specified for the action handler that executes actions.

      Edit the alarm to set `PH1<`*new-pfm-agent-or-pfm-rm-host-name*`>` for the action handler that executes actions.

    - JP1 events are issued by actions.

      Set the JP1 event settings in the action again.

    For details on how to edit alarms, see the chapter that describes the operation monitoring with alarms in the *Job Management Partner 1/Performance Management User's Guide*.

11. Update the JP1 system event settings.

    If one of the following conditions is met, you need to update the JP1 system event settings by using the PFM - Web Console browser:

    - The previous host name has been specified as the name of the event server to which JP1/Base connects.

    - The previous host name has been specified as the host name of the monitoring console for JP1 system events.

12. Check whether the JP1 system event settings have been properly updated.

    Check the following items after the settings have changed:

    - Collection of performance data

      Make sure that performance data can be collected for a period at least twice as long as the time period specified as the collection interval (**Collection Interval**).

    - Execution of the `jpctool db dump` command

      Make sure that there is no problem in outputting the collected performance

data.

- Check of the report definition and alarm definition

  Make sure that there is no problem with the report definition and alarm definition created in the browser.

- Check of the actions

  Make sure that there is no problem in executing the created actions.

(3) Changing the monitored host name of PFM - RM

This subsection describes the procedure for changing the monitored host name.

(a) If you do not change the monitored host name

You must change the monitored host name of the remote agent that corresponds to the monitoring target. Assuming that you change the monitored host name of the remote agent (instance name: `inst1`) from `hostA` to `hostB`, commands are executed as follows:

To change the monitored host name of the remote agent that corresponds to the monitoring target:

1. Execute the `jpcconf target setup -key RMPlatform -inst inst1 -target hostA` command.

2. Enter `Target Host:hostB`.

   Follow the instructions to enter the setting items for the monitored host. When you are finished, press the **Enter** key to confirm the setting.

The following figure shows an example of changing the monitored host name of PFM - RM.

Figure 5-9: Example of changing the monitored host name for PFM - RM (if you do not change the monitored host name)

(b) If you change the monitored host name

You must re-create the remote agent that corresponds to the monitoring target.

To re-create the remote agent:

1. Execute the `jpcconf target unsetup` command to delete the remote agent that corresponds to the monitoring target.

2. Execute the `jpcconf target setup` command to add the remote agent with a new monitored host name.

Note that the performance data for the monitoring target cannot be inherited.

The following figure shows an example of changing the monitored host name of PFM - RM.

Figure 5-10: Example of changing the monitored host name for PFM - RM (if you change the monitored host name)

For details on the `jpcconf target setup` and `jpcconf target unsetup` commands, see the chapter explaining the commands in the manual *Job Management Partner 1/Performance Management Reference*.

(4) Changing the PFM - Web Console host name

To change the PFM - Web Console host name:

1. Stop the services on the PFM - Web Console host.

   On the PFM - Web Console host connected to PFM - Manager for which you intend to change the host name, stop all Performance Management programs and services. To stop the services, use the jpcwstop command.

2. If you have changed the host name for communications, change the host name of the PFM - Web Console. You need to perform this step if the IP address used by the PFM - Web Console host cannot communicate with the PFM - Manager host, and if the host name of PFM - Web Console has been specified in the initialization file (`config.xml`).

   For details on how to change host names, see the sections that describe settings of host names used for communications between PFM - Manager and PFM - Web Console in the appendix of the manual *Job Management Partner 1/Performance Management Reference*.

3. If the integrated management product (JP1/IM) is linked for operation

monitoring, change the host name.

Depending on the configured event, change the applicable section of the host name to the new host name.

- If a JP1 user event is used

  Change the host name in the definition files for the tool launcher and for opening monitor windows.

- If a JP1 system event is used

  Change the **Monitoring Console Host** property setting of **JP1 Event Send Host** to the new host name.

For details on an integrated management product (JP1/IM), see the chapter that describes the linkage with the integrated management product JP1/IM for operation monitoring in the *Job Management Partner 1/Performance Management User's Guide*.

4. If the network management product (NNM) is linked for operation monitoring, change the host name.

   Change the host name of the PFM - Web Console in `jpcnnm.ini` file to the new host name.

   For details on a network management product (NNM), see the chapter that describes the linkage with Network Node Manager (NNM) for operation monitoring in the *Job Management Partner 1/Performance Management User's Guide*.

5. Change the PFM - Web Console physical host name.

   Change the PFM - Web Console physical host name. When the machine requires restarting, change the settings so that the Performance Management programs and services will not automatically start after the machine is restarted. After the PFM - Web Console host operation has finished, return the settings so that the Performance Management programs and services start automatically.

6. Start the services on the PFM - Web Console host.

   Start the Performance Management programs and services on the PFM - Web Console host connected to PFM - Manager for which you have changed the host name. To start the services, use the `jpcwstart` command.

7. Restart the integrated management product (JP1/IM), if linking with JP1/IM.

(5) Optional Agent-specific steps for host name changes

This subsection describes the PFM - Agent-specific steps necessary to perform the following operations for each product:

- Changing the PFM - Manager host name

- Changing the PFM - Agent or PFM - RM host name

For details, see *(1) Changing the PFM - Manager host name* or *(2) Changing the PFM - Agent or PFM - RM host name*.

(a) In PFM - Agent for Enterprise Applications

Execute the `jpcconf inst setup` command for all the created instance environments. For example, if an instance environment `o246bci_SD5_00` exists in PFM - Agent for Enterprise Applications, execute the following command:
`jpcconf inst setup -key agtm -inst o246bci_SD5_00`

The interactive `jpcconf inst setup` command returns a prompt that requests you to enter a value. In this case, enter a new host name in `ASHOST`, leave other items blank, and press the **Enter** key. If you do not enter a value and press the **Enter** key, the setting prior to executing the command is used.

(b) In PFM - Agent for Microsoft SQL Server

Execute the `jpcconf inst setup` command for all the created instance environments. For example, if an instance environment `default` exists in PFM - Agent for Microsoft SQL Server, execute the following command:
`jpcconf inst setup -key agtq -inst default`

The interactive `jpcconf inst setup` command returns a prompt that requests you to enter a value. In this case, enter a new host name in `SQL_HOST`, leave other items blank, and press the **Enter** key. If you do not enter a value and press the **Enter** key, the setting prior to executing the command is used.

5.4 Changing the Performance Management operation method

You might need to change the operation method for the Performance Management system due to changes in the system administrator of the operation monitoring system, or changes to the operational procedure for the collected operation monitoring data. This section describes the procedure to change the Performance Management operation method.

5.4.1 Setting the size of the log file for the common message log

Common message logs are output in PFM - Manager, PFM - Base, PFM - Agent, and PFM - RM. The common message log file uses by default two 2,048-KB files. This setting is required only when you wish to change the common message log file size.

Directly edit the content of the jpccomm.ini file to change the file size. The jpccomm.ini file is stored in the following locations:

On physical hosts:

In Windows:

installation-folder

In UNIX:

/opt/jp1pc/

On logical hosts:

In Windows:

environment-directory\jp1pc

In UNIX:

environment-directory/jp1pc

The following table lists and describes the label name to be edited and the range of values that can be set in the jpccomm.ini file.

Table 5-16: Settings for the file size of the common message log ("Common Section" section in jpccomm.ini)

Setting item	Label name	Available value	Default value
Size of the file that stores the common message log (Kilobytes)	Common Msglog Size	4 - 4,096	2,048

To change the size of the common message log file:

1. Stop Performance Management programs and services.

   Stop all Performance Management programs and services that are running.

2. Use a text editor or a similar tool to open the jpccomm.ini file.

3. Change the size of the common message log file.

   Correct the shaded parts indicated below:

   ```
               :
   [Common Section]

   Common Msglog Size=2048

               :
   ```

   Notes:

   - Do not enter spaces at the beginning of the coding, or before and after the equals sign (=).

   - The jpccomm.ini file contains the definition information besides the common message log file size. Change values only for Common Msglog Size in the Common Section section. Performance Management might not operate correctly if you change values other than the required items.

4. Save and then close the jpccomm.ini file.

Notes:

   - You need to make the settings the same for the common message log file in all Performance Management programs running on the same host.

   - To return the settings of the jpccomm.ini file to the default status at installation, copy the jpccomm.ini.model file located in the installation folder of the jpccomm.ini file into the jpccomm.ini file.

5.4.2 Changing the storage locations of event data

The event data that occurs in PFM - Agent or PFM - RM is managed by the Store database of the Master Store service that PFM - Manager provides.

To change the following storage folders for the event data managed by the Store database, directly edit the contents of the jpcsto.ini file:

- Installation folder

- Backup folder

- Export folder

The jpcsto.ini file is stored in the following locations:

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On physical hosts:

In Windows:

installation-folder\mgr\store\jpcsto.ini

In UNIX:

/opt/jp1pc/mgr/store/jpcsto.ini

On logical hosts:

In Windows:

environment-directory\jp1pc\mgr\store\jpcsto.ini

In UNIX:

environment-directory/jp1pc/mgr/store/jpcsto.ini

(1) Items to set in the jpcsto.ini file

The following table lists and describes the label names to be edited and the ranges of values that can be set in the jpccomm.ini file.

Table 5-17: Settings for the storage location of the event data (Data Section section in jpcsto.ini)

Setting item	Label name	Available value[#1]	Default value
Folder in which the event data is created	Store Dir[#2]	Absolute path name 1 - 127 bytes in length	On physical hosts: • In Windows: *installation-folder*\mgr\store • In UNIX: /opt/jp1pc/mgr/store On logical hosts: • In Windows: *environment-directory*\jp1pc\mgr/store • In UNIX: *environment-directory*/jp1pc/mgr/store

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Setting item	Label name	Available value[#1]	Default value
Backup folder for the event data	`Backup Dir`[#2]	Absolute path name 1 - 127 bytes in length	On physical hosts: • In Windows: *installation-folder*`\mgr\store\backup` • In UNIX: `/opt/jp1pc/mgr/store/backup` On logical hosts: • In Windows: *environment-directory*`\jp1pc\mgr\store\backup` • In UNIX: *environment-directory*`/jp1pc/mgr/store/backup`
Maximum number of generations of event data to back up	`Backup Save`	1 - 9	5
Export folder for the event data	`Dump Dir`[#2]	Absolute path name 1 - 127 bytes in length	On physical hosts: • In Windows: *installation-folder*`\mgr\store\dump` • In UNIX: `/opt/jp1pc/mgr/store/dump` On logical hosts: • In Windows: *environment-directory*`\jp1pc\mgr\store\dump` • In UNIX: *environment-directory*`/jp1pc/mgr/store/dump`

#1

- Specify absolute path names for all folder names.
- You can use alphanumeric characters, symbols, and spaces except for the

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following:

```
; , * ? ' " < > |
```

- When invalid values are specified, the Master Store service cannot be started.

#2

You cannot specify a duplicated folder for Store Dir, Backup Dir, and Dump Dir.

(2) Procedure to edit the jpcsto.ini file

To edit the jpcsto.ini file:

1. Stop the Master Store service of PFM - Manager.

2. Use a text editor or a similar tool to open the jpcsto.ini file.

3. Change the storage locations and other information related to event data.

   As needed, correct the part indicated by shading in the following figure.

```
              :
[Data Section]
```

Store Dir=.
Backup Dir=.\backup
Backup Save=5
Dump Dir=.\dump

```
              :
```

Notes:

- Do not enter spaces at the beginning of the coding and also before and after an equals sign (=).

- A period (.) in the value of each label represents the default storage folder of the Store database of the Master Store service. The default storage folders are as follows:

On physical hosts:

In Windows:

installation-folder\mgr\store

In UNIX:

/opt/jp1pc/mgr/store

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On logical hosts:

In Windows:

  environment-directory\jp1pc\mgr\store

In UNIX:

  environment-directory/jp1pc/mgr/store

To store the Store database in a different location, specify the relative path from the default folder, or the absolute path to the location.

- Create a folder to be specified beforehand to change the installation location of the Store database.

- The jpcsto.ini file contains the definition information in addition to the information on the database installation folder. Change values only in the Data Section section. Performance Management might not operate correctly if you change values other than the required items.

4. Save and then close the jpcsto.ini file.

5. Start Performance Management programs and services.

5.4.3 Setting for disconnecting communication lines

Performance Management does not disconnect the communications line until 70 seconds after communication with the connection destination ends. Therefore, keep this setting in mind when you use Performance Management in an environment that charges by connection time.

To edit the jpccomm.ini file in order to disconnect the line immediately after the communication ends:

1. Stop Performance Management programs and services.

   Stop all Performance Management programs and services that are running.

2. Use a text editor or a similar tool to open the jpccomm.ini file.

3. Change the connection mode of the communication line.

   Change the following label value in all sections in the jpccomm.ini file.

   NS Keepalive Mode=0

4. Save and then close the jpccomm.ini file.

5. Start Performance Management programs and services.

Note:

The line is always connected between PFM - Web Console and PFM - Manager in order to periodically communicate with each other. For that reason, Hitachi

does not recommend that you use networks such as a WAN environment for communications between hosts because environment usage fees are based on the communication time or the volume.

5.4.4 Configuring the functionality for binding multiple alarm tables

You must be using version 09-00 or later of PFM - Manager and PFM - Web Console to use the functionality for binding multiple alarm tables. While the functionality for binding multiple alarm tables is enabled, you cannot connect from PFM - Web Console whose version is earlier than 09-00.

The following table describes the configuration of the monitoring agents that can bind multiple alarm tables. In order to use a monitoring agent to bind multiple alarm tables, the configuration in the table must be marked as Y. Even if a monitoring agent with an N marked configuration exists in the system, you can still use the functionality for binding multiple alarm tables. However, you cannot use the function to bind multiple alarm tables with the applicable monitoring agent. If you use a monitoring agent with an N marked configuration to bind multiple alarm tables, evaluation results cannot be guaranteed for the alarm of the applicable monitoring agent.

PFM - Agent version	PFM - Manager or PFM - Base version on a same host		
	09-00 or later	**Before 09-00**	**None**
08-00 or later	Y	N	--
Before 08-00	N	N	N

Legend:

Y: Multiple alarm tables can be bound.

N: Multiple alarm tables cannot be bound.

--: Unavailable

To enable or disable the functionality for binding multiple alarm tables, directly edit the contents of the jpccomm.ini file on the PFM - Manager host. The jpccomm.ini file is stored in the following locations:

On physical hosts:

In Windows:

Installation-folder

In UNIX:

/opt/jp1pc/

On logical hosts:

In Windows:

environment-directory\jp1pc

In UNIX:

environment-directory/jp1pc

(1) Enabling the functionality for binding multiple alarm tables

To enable the functionality for binding multiple alarm tables:

1. Stop Performance Management programs and services.

   Stop all Performance Management programs and services that are running by using the jpcspm stop command. If the programs are running on a cluster system, stop them from the cluster software.

2. Use a text editor or a similar tool to open the jpccomm.ini file.

3. Enable the functionality for binding multiple alarm tables.

   Change the following label value in the [Common Section] section in the jpccomm.ini file.

   ```
   Multiple Alarm Table Bind=1
   ```

4. Save and then close the jpccomm.ini file.

5. Start Performance Management programs and services by using the jpcspm start command.

   If the programs are running on a cluster system, start them from the cluster software.

6. Restart the PFM - Web Console.

(2) Disabling the functionality for binding multiple alarm tables

To disable the functionality for binding multiple alarm tables:

1. Stop Performance Management programs and services.

   Stop all Performance Management programs and services that are running by using the jpcspm stop command. If the programs are running on a cluster system, stop them from the cluster software.

2. Use a text editor or a similar tool to open the jpccomm.ini file.

3. Disable the functionality for binding multiple alarm tables.

   Change the following label value in the [Common Section] section in the jpccomm.ini file.

```
Multiple Alarm Table Bind=0
```

4. Save and then close the `jpccomm.ini` file.

5. Start Performance Management programs and services by using the `jpcspm start` command.

   If the programs are running on a cluster system, start them from the cluster software.

6. Restart the PFM - Web Console.

Note

If you disable the functionality for binding multiple alarm tables when multiple alarm tables are bound with PFM - Agent or PFM - RM, the message `KAVE00317-W` is output the next time you start the Master Manager service. In addition, all the alarm tables bound with the applicable PFM - Agent or PFM - RM are unbound. As a result, it might take a long time to start Master Manager after the function is disabled. For the operating PFM - Agent or PFM - RM, the multiple alarm tables stay bound until the applicable PFM - Agent or PFM - RM is restarted. If you disabled the functionality for binding multiple alarm tables, in order for the binding status update to take effect, you must restart the PFM - Agent or PFM - RM that outputs the `KAVE00317-W` message.

5.4.5 Changing IP address settings

This subsection describes the procedures to change IP addresses during Performance Management operation.

(1) Changing the IP address of the PFM - Manager host

To change the IP address of the PFM - Manager host:

1. Log out from PFM - Web Console.

   Log out from all PFM - Web Console hosts that connect to the PFM - Manager host for which you intend to change the IP address.

2. Stop all Performance Management services on the PFM - Manager host.

   Stop all Performance Management programs and services on the PFM - Manager host for which you intend to change the IP address. To stop the services, use the `jpcspm stop` command. If the programs are running on a cluster system, stop them from the cluster software.

3. Change the IP address of the PFM - Manager host.

   Change the IP address of the monitoring manager host where PFM - Manager is installed.

4. Configure the network.

   Configure the network to allow TCP communication by all PFM - Agent, PFM - RM, PFM - Base, PFM - Web Console and PFM - Manager hosts to the host whose IP address you changed.

5. Restart the Performance Management services on the PFM - Manager host.

   Start the Performance Management programs and services on the PFM - Manager host. If the programs are running on a cluster system, stop them from the cluster software.

6. Log on to PFM - Web Console.

   Log on to PFM - Web Console.

(2) Changing the IP address of the PFM - Web Console host

To change the IP address of the PFM - Web Console host:

1. Stop all Performance Management services on the PFM - Web Console host.

   Stop all Performance Management programs and services on the PFM - Web Console host for which you intend to change the IP address by using the jpcwstop command. If running the programs on a cluster system, stop them from the cluster software.

2. Change the IP address of the PFM - Web Console host.

   Change the IP address of the monitoring console host where PFM - Web Console is installed.

3. Configure the network.

   Configure the network to allow TCP communication from the connection-target PFM - Manager to the host whose IP address you changed, and to allow HTTP communication from the monitoring console to the host whose IP address you changed.

4. Restart the Performance Management services on the PFM - Web Console host.

   Start the Performance Management programs and services on the PFM - Web Console host. If the programs are running on a cluster system, stop them from the cluster software.

5. Log on to PFM - Web Console

   Connect to PFM - Web Console from the monitoring console, using the new IP address (or host name) in the URL.

(3) Changing the IP address of the PFM - Base host

To change the IP address of the PFM - Base host:

1. Stop all Performance Management services on the PFM - Base host.

   Stop all Performance Management programs and services on the PFM - Base host for which you intend to change the IP address. To stop services, use the `jpcspm stop` command. If the programs are running on a cluster system, stop them from the cluster software.

2. Change the IP address of the PFM - Base host.

   Change the IP address of the host where PFM - Base is installed.

3. Configure the network.

   Configure the network to allow TCP communication by all PFM - Agent, PFM - RM, PFM - Base, PFM - Web Console, and PFM - Manager hosts to the host whose IP address you changed.

4. Restart the Performance Management services on the PFM - Base host.

   Start the Performance Management programs and services on the host where PFM - Base is installed. If the programs are running on a cluster system, stop them from the cluster software.

(4) Changing the IP address of the PFM - Agent or PFM - RM host

To change the IP address of the PFM - Agent or PFM - RM host:

1. Stop all Performance Management services on the PFM - Agent or PFM - RM host.

   Stop all Performance Management programs and services on the PFM - Agent or PFM - RM host for which you intend to change the IP address. To stop services, use the `jpcspm stop` command. If the programs are running on a cluster system, stop them from the cluster software.

2. Change the IP address of the PFM - Agent or PFM - RM host.

   Change the IP address of the host where PFM - Agent or PFM - RM is installed.

3. Configure the network.

   Configure the network to allow TCP communication by all PFM - Agent, PFM - RM, PFM - Base, PFM - Web Console and PFM - Manager hosts to the host whose IP address you changed.

4. Restart the Performance Management services on the PFM - Agent or PFM - RM host.

   Start the Performance Management programs and services on the host where PFM - Agent or PFM - RM is installed. If the programs are running on a cluster system, stop them from the cluster software.

5.4.6 Changing PFM - Web Console settings

Use the Windows initialization file (`config.xml`) to set the environment necessary to operate PFM - Web Console.

The Windows initialization file (`config.xml`) is stored in *installation-folder*`\conf\`.

Note:

> The Windows initialization file (`config.xml`) is loaded when a PFM - Web Console service starts. Restart the PFM - Web Console service to enable the settings you changed in the Windows initialization file. Change only the required information. PFM - Web Console might not operate correctly if you change locations that are not specified.

Items to set in the Windows initialization file are described below.

(1) Items to set in Windows initialization file (`config.xml`)

Items set in the `config.xml` file are as follows:

(a) File output settings

The following table lists and describes the `config.xml` file items used to change the settings related to output of the PFM - Web Console file.

Table 5-18: File output settings

Content	Item	Available value	Default value
Output directory for log files	logDir	Directory to which PFM - Web Console outputs log files	*installation-folder*`\log`
Number of log files output by PFM - Web Console	logFileNumber	1 - 16	10[#]
Size of each log file	logFileSize	1 - 100	4[#]
Number of days to keep log files	logFileRetention	1 - 30	30[#]
Line terminal code for output in files	lineSeparator	• CRLF: Linefeed code used in Windows • LF: Linefeed code used in UNIX	CRLF[#]

Content	Item	Available value	Default value
Character code for output in files	characterCode	• US-ASCII • Windows-1252 • ISO-8859-1 • UTF-8 • UTF-16 • UTF-16BE • UTF-16LE	US-ASCII[#]
File name to output	csvFileName	• Numbers from 0 - 9 • . (Period) • _ (Underscore) • Space • Alphabet letters A - Z, a - z You can specify up to 100 characters although you cannot specify a name that consists only of spaces and periods.	Export.csv[#]

\#

The default value is set if you specify an invalid value.

(b) Setting PFM - Manager for the connection destination

The following table lists and describes the config.xml file items used to change settings for PFM - Manager for the connection destination of PFM - Web Console.

Table 5-19: Settings for PFM - Manager for the connection destination

Content	Item	Available value	Default value
Host name or IP address of PFM - Manager for the connection destination	host	For host name: - Numbers from 0 - 9 - . (Period) - - (Hyphen) - Alphabet letters A - Z, a - z You can use 1 - 32 characters. For IP address: - From 0.0.0.0 to 255.255.255.255	localhost[#]

Content	Item	Available value	Default value
Port number for the View Server service by PFM - Manager for the connection destination	port	1024 - 65535	22286[#]

\#

    The default value is set if you specify an invalid value or omit a required value.

Note:

    Do not specify the following port numbers in order to avoid duplication of port numbers used by other processes.

- Port numbers assigned by the OS (port numbers called dynamic port or ephemeral port)

(c) Data acquisition and display settings

The following table lists and describes the config.xml file setting items used to change settings related to data acquisition and display for PFM - Web Console.

Table 5-20: Data acquisition and display settings

Content	Item	Available value	Default value
Maximum number of records obtained from PFM - Manager	maxFetchCount (under the `<vsa>` tag)	1 - 2,147,483,647 (Integer)	1,440
Number of records displayed per one page of the report window table	displayCountPerPage	1 - 2,147,483,647(Integer)	20
Maximum number of records saved in the cache for one real time report.	maxRealtimeCache	1 - 360 (Integer)	30
Interval for automatic update	updateInterval	10 - 3,600	60
Specifiable range for conditional expression definitions that use ulong data types	condExpValueUlongExtension	• Specified value: Specifiable range of ulong data type • true: 0 - 4,294,967,295 • false: 0 - 2,147,483,648	false

Content	Item	Available value	Default value
Maximum number of characters displayable as a label on a report graph[1]	maxSeriesLabelLength	1 - 1,024	30
Whether block transfer mode is enabled	blockTransferMode	true (enabled) false (disabled)	true
Maximum number of reports displayable by tiling	maxTileReports	1 - 256	50
Interval time limit for an automatic update request of a real-time report[2]	realtimeCacheInterval[3]	60,000 - 3,600,000 (Milliseconds)	600,000
Installation location of the repository[3] for saving the definition information of the bookmark function	bookmarkRepository[3]	Use an absolute pathname. Maximum path length: 150 characters A new folder is created when a Web Console service starts if the specified folder does not exist.	*installation-folder*\\ bookmarks
Availability of operation for defining reports, or for creating, editing, deleting, importing, or exporting bookmarks by ordinary users	editReportByOrdinaryUser	on (available) off (unavailable)	on
Maximum number of server operation statuses to be displayed in the summary format (when using the User Agents display format)	maxDisplayServer (under the \<user-agents\> tag)	1 - 100	5

Content	Item	Available value	Default value
Maximum number of server operation statuses to be displayed in the summary format (when using the `Products` display format)	maxDisplayServer (under the `<products>` tag)	1 - 100	5
Maximum number of agent operation statuses to be displayed in the summary and **User tree view** display format (when using the `User Agents` display format)	maxDisplayAgents User (under the `<user-agents>` tag)	1 - 100	5
Maximum number of agent operation statuses to be displayed in the summary and **Product type view** display format (when using the `User Agents` display format)	maxDisplayAgents Products (under the `<user-agents>` tag)	1 - 100	5
Maximum number of agent operation statuses to be displayed in the summary format (when using the `Products` display format)	maxDisplayAgents Products (under the `<products>` tag)	1 - 100	5
Maximum number of agent alarm statuses to be displayed in the summary format (when using the `User Agents` display format)	maxDisplayAlarm (under the `<user-agents>` tag)	1 - 100	5

Content	Item	Available value	Default value
Maximum number of agent alarm statuses to be displayed in the summary format (when using the `Products` display format)	maxDisplayAlarm (under the `<products>` tag)	1 - 100	5
Maximum number of events to be displayed in the summary format	maxEvents	1 - 999	256
Maximum number of searchable fields	searchLimit	1 - 100	50
Maximum number of output records obtained from View Server by using the `jpcrpt` command	maxFetchCount (under the `<command>` tag)	1 - 2,147,483,647 (Specified by integer)	maxFetchCount value under the `<vsa>` tag

#1

> You must specify this item in bytes. However, if the last byte is used by a multi-byte character, the whole multi-byte character is displayed.

#2

> When the interval between automatic update requests exceeds the period limit, then the server and agent determine that the report has ended without a notification and processing is terminated. However, whether the request interval exceeds the time period limit is determined every 10 seconds.

> For example, when the time period limit is set to 61,000 milliseconds, the time period ranges from 61,000 to 70,000 milliseconds.

#3

> The default `config.xml` file does not contain settings for realtimeCacheInterval and bookmarkRepository.

> To add these settings, see the description of the initialization file (`config.xml`) in the appendixes of the *Job Management Partner 1/Performance Management Reference*, and add the items to the `config.xml` file located at *installation-folder*\`conf`\.

(d) Settings for communication with View Server service

The following table lists and describes the `config.xml` file setting items used to

change settings related to communication between PFM - Web Console and the View Server service.

Table 5-21: Settings for communication between PFM - Web Console and View Server

Content	Item	Available value	Default value
Port number used by PFM - Web Console (Web server) to communicate with the View Server service	ownPort [1, 2]	1,024 - 65,535	Any available port
Port number used by PFM - Web Console (commands) to communicate with the View Server service	ownCmdPort[1, 2]	1,024 - 65,535	Any available port
Host name or IP address used as the callback destination for the View Server Service during communication with PFM - Web Console	ownHost[1]	• Numerals 0-9 • Periods (.) • Underscores (_) • Spaces • Alphabetic characters A-Z, a-z The string must begin with an alphanumeric character.	None

[1]

The default `config.xml` file does not contain settings for ownPort, ownCmdPort, and ownHost.

To add these settings, see the description of the initialization file (`config.xml`) in the appendixes of the *Job Management Partner 1/Performance Management Reference*, and add the items to the `config.xml` file located at *installation-folder*\`conf`\.

[2]

This setting is required if you use Performance Management in a firewall environment. For details, see the description of firewall routing in the appendixes of the *Job Management Partner 1/Performance Management Reference*.

(e) Automatic logout settings

The following table lists and describes the `config.xml` file items that determine the length of time before users are automatically logged out from PFM - Web Console.

Table 5-22: Automatic logout settings

Content	Item	Available value	Default value
Length of time before automatic logout from PFM - Web Console (seconds)	sessionTimeout	0 - 86,400	4,000

(2) Procedure to return a changed Windows initialization file (config.xml) to the default

It is possible that the configuration of the `config.xml` file is changed when the version upgrade is performed. After the version upgrade, use the following procedure to reflect the edited content of the `config.xml` file in the new `config.xml` file.

To return a changed Windows initialization file to the default:

1. Check the content of *installation-folder*\`conf\config.xml` and take note of the edited content.

2. Backup *installation-folder*\`conf\config.xml`.

3. Overwrite *installation-folder*\`sample\conf\config.xml` on the *installation-folder*\`conf\config.xml`.

4. Apply the edited content you checked in step 1 in *new-installation-folder*\`conf\config.xml`.

Restart PFM - Web Console when you change the Windows initialization file since the Windows initialization file is updated when PFM - Web Console starts.

Note:

When you wish to return the data of the `config.xml` file to the previous status, copy the `config.xml` file in *installation-folder*\`sample\conf\` and overwrite on the above folder.

5.4.7 Setup and unsetup of Store 2.0

(1) Setup procedure

Store 2.0 can be used with version 08-11 or later of PFM - Manager or PFM - Base combined with the monitoring agent that is version 08-00 or later of PFM - Agent or PFM - RM. Store 2.0 is activated by default when you perform a new installation of PFM - Agent version 08-11 or PFM - RM.

Note:

Store 2.0 can only be used with the Store database of the Agent Store or Remote Monitor Store service. You cannot use Store 2.0 with the Store database of the Master Store service, which only supports Store 1.0. Store 1.0 cannot be used with the Remote Monitor Store service.

The setup procedure for Store 2.0 depends on the version of PFM - Agent and the method of installation. If you install version 08-11 or later of a Performance Management product into an environment that uses Store 1.0, the environment will continue to use Store 1.0. To migrate to Store 2.0, you need to execute the setup command for the Store database.

The following table lists the availability of Store 2.0 for each version of PFM - Agent, and how to implement it.

Table 5-23: For a single instance of PFM - Agent

PFM - Agent		Can Store 2.0 be used	Procedure for implementing Store 2.0
Version	Installation method		
07-00 or earlier	N/A	No	--
08-00	N/A	Yes but setup required	Execute setup command
08-11 or later	New installation	Yes	None required
	Upgrade installation	Yes	Execute setup command

(Legend) --: Not applicable.

Table 5-24: For multiple instances of PFM - Agent

PFM - Agent		Can Store 2.0 be used	Procedure for implementing Store 2.0
Version	Timing of instance creation		
07-00 or earlier	N/A	No	--
08-00 or later	Before installing PFM - Base or PFM - Manager 08-11	Yes but setup required	Execute setup command
	After installing PFM - Base or PFM - Manager 08-11	Yes	Select the Store version when using the `jpcconf inst setup` command to create an instance

(Legend) --: Not applicable.

For details on the procedure for setting up PFM - Agent to use Store 2.0, see the PFM - Agent manuals.

Note:

The data retention conditions for PD and PL-type records are set differently for

each version of the Store database. When you migrate from Store 1.0 to Store 2.0, data that does not meet the data retention conditions of Store 2.0 is deleted. The default retention period in Store 2.0 differs depending on the PFM - Agent or PFM - RM.

For example, in PFM - Agent that the default retention period has been set to 10 days, suppose that Store 1.0 stores 10,000 PD records for the 365 days from January 1st 2006 to December 31st 2006. When you migrate to Store 2.0, the default retention period of 10 days will result in 355 days of data being deleted.

For this reason, before migrating to Store 2.0, use the `jpctool db dump` command to output the data from Store 1.0.

PI record data remains the same after migration.

(2) Unsetup procedure

Use the `jpcconf db vrset -ver 1.0` command to perform an unsetup of Store 2.0. This process initializes the data in the Store database and reverts the Store database to Store 1.0.

Note:

Performing an unsetup of Store 2.0 initializes the data in the Store database. For this reason, use the `jpctool db dump` command to output the data in the database before reverting to Store 1.0.

5.4.8 Enhancing file permissions

When using Performance Management in a Windows environment, you can modify user file permissions to enhance security.

You enhance file permissions by modifying folder permissions. When you set permissions on a parent folder, subfolders in the folder inherit these permissions.

Create a PFM users group, and assign the permissions from Modify downwards to the group. After these permissions are assigned, only users who belong to the PFM users group will be able to execute PFM commands that could previously be executed by anyone. Modify the permissions for the folder *installation-folder*\jp1pc as shown in the following table.

Table 5-25: Folder permissions

Permission	Access permissions			
	Administrators	SYSTEM	Backup Operators	PFM Users (specific users)
Full control	Y	Y	N	N
Modify	Y	Y	Y	Y

Permission	Access permissions			
	Administrators	**SYSTEM**	**Backup Operators**	**PFM Users (specific users)**
Read & execute	Y	Y	Y	Y
List folder contents	Y	Y	Y	Y
Read	Y	Y	Y	Y
Write	Y	Y	Y	Y

Legend:

Y: Assign permission

N: Do not assign permission

When using Performance Management in a logical host environment, Hitachi recommends that you configure the PFM users group as a domain group account. For users in a non-domain environment, assign the permissions in the above table to the PFM users group created on each of those users' machines.

5.4.9 Configuring the product name display function

You can change the format of keys and service IDs used for Performance Management to product names by enabling the product name display function. For details on the product name display function, see *4.1.2 Displaying and specifying services*.

Use the `jpcconf prodname` command to configure the product name display function. For details on the `jpcconf prodname` command, see the chapters that describe commands in the manual *Job Management Partner 1/Performance Management Reference*.

(1) Checking the current settings of the product name display function

To check the settings of the product name display function:

1. Log on to the host for which you want to check the current settings of the product name display function.

2. Execute the `jpcconf prodname display` command.

   The current settings of the product name display function appear.

   An example of executing this command is as follows (while the product name display function is enabled):

   ```
   C:\Program Files\Hitachi\jp1pc\tools>jpcconf prodname
   display
   Available
   ```

For the logical host operations, specify a logical host name that you want to check the current settings in the `-lhost` option.

(2) Enabling the product name display function

To enable the product name display function:

1. Log on to the host where you want to enable the product name display function.

2. Stop all Performance Management services on the host.

   For details on 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*. For the logical host operations, use the cluster software to stop the logical host on which Performance Management has been registered.

3. Execute the `jpcconf prodname enable` command.

   The product name display function is enabled.

   For the logical host operations, specify a logical host name that you want to enable the product name display function in the `-lhost` option.

4. Start all Performance Management services on the host.

   For details on starting services, see the chapter that describes starting and stopping Performance Management in the *Job Management Partner 1/ Performance Management User's Guide*. For the logical host operations, use the cluster software to start the logical host on which Performance Management has been registered.

(3) Disabling the product name display function

To disable the product name display function:

1. Log on to the host where you want to disable the product name display function.

2. Stop all Performance Management services on the host.

   For details on 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*. For the logical host operations, use the cluster software to stop the logical host on which Performance Management has been registered.

3. Execute the `jpcconf prodname disable` command.

   The product name display function is disabled.

   For the logical host operations, specify a logical host name that you want to

enable the product name display function in the `-lhost` option.

4. Start all Performance Management services on the host.

    For details on starting the services, see the chapter that describes starting and stopping Performance Management in the *Job Management Partner 1/ Performance Management User's Guide*. For the logical host operations, use the cluster software to start the logical host on which Performance Management has been registered.

5.5 Settings required to read manuals with a Web browser

In Performance Management, you can use a Web browser to read manuals. To read a manual with a Web browser, copy the manual from the manual CD-ROM (included with the program product) to the host where PFM - Web Console is installed. If PFM - Web Console is running on a cluster system, copy the manual to both the executing physical host and standby physical host.

5.5.1 Setting procedure

(1) To read manuals from the PFM - Web Console Help

To read manuals from the PFM - Web Console Help:

1. To register PFM - Agent or PFM - RM to PFM - Web Console (or perform an additional setup for PFM - Agent or PFM - RM), follow the PFM - Web Console setup procedures.

2. In the host where PFM - Web Console is installed, create a folder for the manual to be copied.

   - For *Job Management Partner 1/Performance Management Planning and Configuration Guide*

     PFM-Web-Console-installation-folder\doc\en\pcsy

   - For *Job Management Partner 1/Performance Management User's Guide*

     PFM-Web-Console-installation-folder\doc\en\pcop

   - For *Job Management Partner 1/Performance Management Reference*

     PFM-Web-Console-installation-folder\doc\en\pcre

   - For the PFM - Agent or PFM - RM manual of JP1/Performance Management

     PFM-Web-Console-installation-folder\doc\en*XXXX*

     XXXX indicates a help-ID of PFM - Agent or PFM - RM. For details on help IDs, see the ID list in an appendix of each PFM - Agent or PFM - RM manual.

3. Copy the following files and folders from the manual CD-ROM to the folder you created in step 2 above.

   For HTML manuals:

   All HTM files and the FIGURE folder under
   CD-ROM-drive\MAN\3020*manual-number* (e.g. 03004A0D)

   For PDF manuals:

PDF files under *CD-ROM-drive*`\MAN\3020\`*manual-number* (e.g. `03004A0D`)

When you copy the manuals, make sure that the `index.htm` file (for a HTML manual) or the actual PDF file (for a PDF manual) is located directly under the folder you created. For details on how to copy the manual files, see the `readme.txt` file stored in the manual CD-ROM.

4. Restart the PFM - Web Console.

(2) To read manuals from your computer hard disk

Use `setup.exe` in the CD-ROM to install the manual, or directly copy the HTM, PDF, and GIF files to a desired folder. For HTML manuals, make sure that the files are located in the following folder configuration:

```
html (HTM files are stored here)
 |- FIGURE (GIF files are stored here)
```

5.5.2 Reading manuals

To refer to the manual:

1. Click the **Help** menu from the menu bar frame in the Main window of PFM - Web Console. This displays the Help window.

2. Click the name of the manual or **PDF** that follows the manual name.

   If you click the manual name, the manual is displayed in the HTML format. Click the **PDF** icon to display the manual in the PDF format.

Note on displaying on a Web browser

If you use Windows OS, when you open the online manual from **Start** menu, the HTML manual might replace a Web page already opened in the Web browser.

Chapter

6. Installation and Setup (in UNIX)

This chapter describes the procedures for installation and setup for Performance Management in UNIX.

6.1 Installation and setup
6.2 Uninstallation and unsetup
6.3 Changing the Performance Management system configuration
6.4 Changing the Performance Management operation method
6.5 Settings required to read manuals with a Web browser

6.1 Installation and setup

This section describes installation and setup procedures for the Performance Management programs.

6.1.1 Before installation and setup

This subsection describes what you need to confirm before installing and setting up Performance Management.

(1) Supported OSs

The following table lists supported OSs for the Performance Management programs.

Table 6-1: Supported OSs (in UNIX)

OS name	PFM - Manager	PFM - Web Console	PFM - Base
HP-UX	N	N	Y
Solaris 9 (SPARC) and Solaris 10 (SPARC)	Y	N	Y
Solaris 10 (x64) and Solaris 10 (x86)	N	N	Y
AIX	Y	N	Y
Linux (x64) and Linux (x86)	Y	Y	Y
Linux (IPF)	N	N	Y

Legend:

Y: Supported

N: Not supported

The supported OSs are different between PFM - Agent and PFM - RM. For details, see the appropriate PFM - Agent or PFM - RM manual.

(2) Determining the system configuration

Determine the number of instances of PFM - Agent or PFM - RM that connect to PFM - Manager. For details on how to estimate the number of instances, see *A.1 System configuration*.

(3) Network environment settings

This subsection describes the network environment required to run Performance Management.

(a) IP address settings

Specify an environment in which the IP addresses can be resolved by host names for all hosts in the Performance Management systems.

Performance Management cannot be installed if the environment does not provide the ability to resolve IP addresses.

You can use the real host name or the alias name as the monitoring host name (the host name for the Performance Management system).

- When using the real host name as the monitoring host name

    Configure the environment so that the IP address can be resolved with the host name that has been obtained by executing either the `hostname` command (Windows system) or `uname -n` command (UNIX system).

    For a UNIX system, you can also use the host name obtained with the `hostname` command. For details, see *6.3.3 Changing the host name in a Performance Management system*.

- When using the alias name as the monitoring host name

    Configure the environment so that the IP address can be resolved with the specified alias name.

For details on how to set a monitoring host name, see *6.3.3 Changing the host name in a Performance Management system*.

Use one of the following methods to specify host names and IP addresses:

- `hosts` file

- Domain Name System (DNS)

- Host information configuration file for Performance Management

- `jpchosts` file (for PFM - Manager, PFM - Agent, PFM - RM, and PFM - Base)

Notes:

- Performance Management can be used in a DNS environment but does not support a host name in the FQDN (Fully Qualified Domain Name) format. Therefore, you must exclude the domain name when you specify the monitoring host name.

- Use the `jpchosts` file to set IP addresses if you run the system in multiple LAN environments. For details, see *6.3.1 Changing the network configuration*.

- Performance Management cannot be used in a DHCP environment on hosts to which IP addresses are allocated dynamically. You must allocate fixed IP addresses to all hosts where Performance Management is installed.

(b) Port number settings

The port numbers listed in the following table are assigned to the Performance Management program services by default. For other services or programs, a port number that is not used by the system at that time is automatically assigned each time a service is started up. Use fixed port numbers if you use Performance Management in a firewall environment. For details on the procedure to fix port numbers, see *6.3.1(1)(b) Setting port numbers*.

Table 6-2: Default port numbers and Performance Management program services (in UNIX)

Service	Service name	Parameter	Port number	Note
Service configuration information management function	Name Server	`jp1pcnsvr`	22285	The port number used by the PFM - Manager Name Server service. This port number is set for all hosts for Performance Management.
OpenView linkage facility	NNM Object Manager	`jp1pcovsvr`	22292	The port number used for communications between a map manager and object manager in the OpenView linkage facility of PFM - Manager and PFM - Base. This port number is set on a host where PFM - Manager or PFM - Base has been installed.
Service status management function	Status Server	`jp1pcstatsvr`	22350	The port number used by the Status Server service of PFM - Manager and PFM - Base. This port number is set on a host where PFM - Manager or PFM - Base has been installed.
Monitoring console communication function	View Server	`jp1pcvsvr`	22286	The port number used by the View Server service of PFM - Manager. This is set on PFM - Manager hosts.

Set the network settings so that Performance Management can communicate through these port numbers.

(4) OS user permission required for installation

Make sure that you are the root user when installing the Performance Management programs.

(5) Required programs

This subsection describes required programs to install Performance Management. The following figure describes the configuration of the required programs.

Figure 6-1: Program configuration
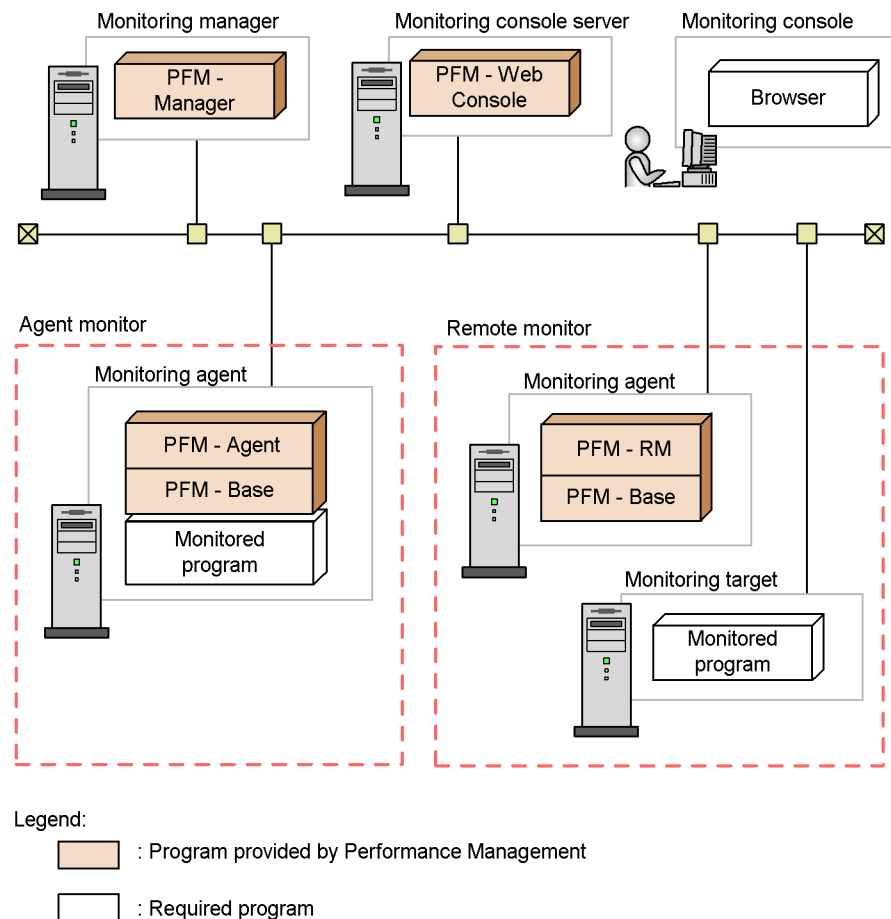
Notes:

- An SMTP server is required to send emails when alarm events are reported to the system administrator via emails. For details, see the chapter that

describes the operation monitoring with alarms in the *Job Management Partner 1/Performance Management User's Guide*.

- For details on the linkage facility, see the chapter that describes the linkage with the integrated management product JP1/IM for operation monitoring, and the chapter that describes the linkage with Network Node Manager (NNM) for operation monitoring in the *Job Management Partner 1/ Performance Management User's Guide*.

(a) Programs required for the monitoring manager

PFM - Manager is required for the monitoring manager. Also, JP1/Base is required for JP1 users to perform integrated authentication. For details, see the chapter that describes user account management in the appropriate JP1/Base manual, and the *Job Management Partner 1/Performance Management User's Guide*.

(b) Programs required for the monitoring console server

PFM - Web Console is required for the monitoring console server.

(c) Programs required for the monitoring agent

Install PFM - Base and either PFM - Agent or PFM - RM for the monitoring agent. Since the PFM - Base program is required for PFM - Agent or PFM - RM, install PFM - Base first and then install PFM - Agent or PFM - RM.

However, PFM - Base is not required if you install PFM - Manager and either PFM - Agent or PFM - RM on the same host. In such cases, since PFM - Manager is the required program for PFM - Agent or PFM - RM, install PFM - Manager first and then install PFM - Agent or PFM - RM.

The programs to be monitored differ per the PFM - Agent or PFM - RM. For details on the programs monitored by PFM - Agent or PFM - RM, see the appropriate PFM - Agent or PFM - RM manual.

(d) Programs required for the monitoring console

A browser is required for the monitoring console in order to check the operation monitoring data collected by Performance Management or to change Performance Management settings.

The following browser is required for Performance Management when you are using the monitoring console in a UNIX environment:

- Firefox2.0.x or Firefox 3

The supported browsers differ depending on the OS or version of PFM - Web Console. For details, see *6.1.6 Procedure for setting up the monitoring console browser*.

(6) Installation and setup for a cluster system

For installation and setup in a cluster system, the required network environment and

program configuration differ from the setup in usual configurations. Also, you need to perform procedures on the executing and standby nodes. For details, see the chapter that describes the cluster system configuration and operation in the *Job Management Partner 1/Performance Management User's Guide*.

(7) Notes

This subsection gives cautionary notes on installing and setting up Performance Management.

(a) Notes on environment variables

Do not manually set JPC_HOSTNAME as an environment variable, because it is used for Performance Management as an environment variable. If this setting is made, Performance Management will not run correctly.

(b) Notes on installation and setup of multiple Performance Management programs on a single host

You can also install the following Performance Management programs on the same host:

- PFM - Manager
- PFM - Web Console
- PFM - Agent or PFM - RM

Supplemental information:

We recommend that you operate PFM - Manager, PFM - Web Console, PFM - Agent, and PFM - RM on separate hosts in order to improve the system performance and reliability.

- PFM - Base is not required if you install PFM - Manager and either PFM - Agent or PFM - RM on the same host. In such cases, because PFM - Manager is required for PFM - Agent or PFM - RM, install PFM - Manager first and then install PFM - Agent or PFM - RM.

- You cannot install PFM - Base and PFM - Manager on the same host. To install PFM - Manager on a host that has PFM - Base and PFM - Agent or PFM - RM installed, uninstall all Performance Management programs, and then install PFM - Manager and either PFM - Agent or PFM - RM, in that order. To install PFM - Base on a host on which PFM - Manager and either PFM - Agent or PFM - RM is installed, first, uninstall all Performance Management programs and then install PFM - Base and either PFM - Agent or PFM - RM, in that order.

- If you install PFM - Agent or PFM - RM on a host that has PFM - Manager installed, PFM - Manager for the connection destination of PFM - Agent or PFM - RM is set to PFM - Manager on the local host. In such cases, you cannot change

PFM - Manager for the connection destination of PFM - Agent or PFM - RM to PFM - Manager on the remote host. If you want to connect to PFM - Manager on the remote host, make sure that PFM - Manager is not installed on a host on which PFM - Agent or PFM - RM is to be installed.

- If you use the function for setting monitoring-host names, you cannot install PFM - Agent 07-00 or earlier on the same host. If you want to install PFM - Agent 07-00 or earlier, you must reset the setting so that the function for setting monitoring-host names is not used (set 0 for the Get Host Mode label). If you do not reset the setting, the installation of PFM - Agent 07-00 or earlier might fail. For details on how to set a monitoring host name, see *6.3.3 Changing the host name in a Performance Management system*.

(c) Notes on version upgrade

The following gives cautionary notes on upgrading older versions of Performance Management programs:

For details on upgrading from version 07-00 or later, see *E. Migration Steps and Notes on Migration*.

- When you install a new Performance Management program, stop all of the Performance Management programs and services at the local host. All services on the physical host and logical host must be stopped. For details on 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*.

- You cannot install PFM - Base and PFM - Manager on the same host. To install PFM - Manager on a host that has PFM - Base and PFM - Agent or PFM - RM installed, uninstall all Performance Management programs and then install PFM - Manager and either PFM - Agent or PFM - RM, in that order. To install PFM - Base on a host on which PFM - Manager and either PFM - Agent or PFM - RM is installed, first, uninstall all Performance Management programs and then install PFM - Base and either PFM - Agent or PFM - RM, in that order.

- Note that the location of the Store service program files (jpcsto and stpqlpr) has been changed in versions 08-00 and later of the Performance Management programs. When you upgrade PFM - Manager and PFM - Agent to version 08-00 or later, the program files for the Store service will be deleted from their former location.

- For an upgrade installation, the destination disk temporarily requires twice as much free space as the Store database. Securing this free space enables the existing Store database to be automatically upgraded. Confirm that there is sufficient free disk space in the destination disk before conducting the upgrade installation.

(d) Notes on PFM - Web Console installation

- If you perform a new installation of PFM - Web Console in an environment that does not have a Performance management program installed, make sure that there are no files or folders in the installation directory.

- If the installation fails with the message `Installation failed` in the status bar, collect the `/etc/.hitachi/.hitachi.log` and `/etc/.hitachi/.install.log` files. Because the log files are overwritten with each installation of PFM - Web Console, make backups as necessary. Remove the cause of the problem, and then uninstall and reinstall PFM - Web Console.

- The install log is output to `/etc/.hitachi/.install.log` and `/etc/.hitachi/.install.log`.

- The initialization file (`config.xml`) stored in `/opt/jp1pcwebcon/conf` is not updated if you perform an overwrite installation of PFM - Web Console. However, the `config.xml` file stored in `/etc/jp1pcwebcon/sample/conf` is updated.

(e) Notes on linking with other systems

- When you install the program in an environment that is linked with Network Node Manager, stop the OpenView linkage facility and ovw, and then install the program. For details on the OpenView linkage facility, see the chapter that describes the linkage with Network Node Manager (NNM) for operation monitoring in the *Job Management Partner 1/Performance Management User's Guide*. For the Network Node Manager environment variables and commands, see the HP NNM documentation.

(f) Other related notes

- If you install a new Performance Management program into an environment that does not have a Performance Management program installed, make sure that there are no files or folders in the installation directory.

- If the installation fails with the message `Installation failed` in the status bar, collect the `/etc/.hitachi/.hitachi.log` and `/etc/.hitachi/.install.log` files. Note that the log file is overwritten during installation; therefore, make backups as necessary.

- If a link is made to the installation directory of the Performance Management programs, some files and directories might remain in the linked directory even after uninstalling all the Performance Management programs. Manually delete the programs. Also, note that when installing the Performance Management programs to a linked directory, files and directories with the same name are overwritten.

- If there are setup files of PFM - Agent or PFM - RM in the `/opt/jp1pc/setup` directory, additional setup is performed for a new PFM - Agent or PFM - RM.

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When the additional setup of PFM - Agent or PFM - RM is successful, the execution results are logged as `KAVE05908-I New agent setup` (*pfm-agent-service-key*) `ended successfully. (version=`*version*`)` to the common message log. View the log to see if it was successful.

- When you install the Performance Management programs, make sure that the following security-related programs have not been installed. If they have been installed, follow the instructions below:

  - Security-monitoring program

    Stop security-monitoring programs, or change the settings so that the programs do not interfere with the installation of the Performance Management programs.

  - Virus detection program

    Before installing the Performance Management programs, we recommend that first you stop virus detection programs.

    If a virus detection program is running, the installation might be slower, the installation might be aborted, or the programs might not be installed correctly.

  - Process-monitoring program

    Stop process-monitoring programs, or change the settings so that the programs do not monitor the services and processes of Performance Management or shared components.

    If these services or processes are started or terminated by a process-monitoring program while installing the Performance Management programs, the installation might fail.

- When you install version 08-00 or later of a Performance Management program, the setting for the status management function is as follows:

  - After a new installation of version 08-00 or later of PFM - Manager or PFM - Base on a host that does not already have a Performance Management program installed

    Status management function setting: Enabled

  - Other cases[#]

    Status management function setting: Remains the same

  # The following are under the other cases category:

  - Upgrading version 06-70 to 07-10 of PFM - Manager to version 08-00 or later

- Performing a new installation of version 08-00 or later of PFM - Manager or PFM - Base in an environment where version 06-70 to 07-00 of PFM - Agent is installed

Because 06-70 to 07-10 versions of Performance Management do not have the status management function, the setting status in this case becomes *disabled*.

For the procedure to change the settings of the status management functions, see the chapter that describes detecting problems in Performance Management in the *Job Management Partner 1/Performance Management User's Guide*.

- You can use the health check function with PFM - Manager version 08-11 or later. Depending on the PFM - Manager version and your installation environment, the settings of the health check function are as follows.

  - After a new installation of version 09-00 or later of PFM - Manager on an environment that does not already have a Performance Management program installed

    Health check function setting: Enabled

  - After a new installation of version 09-00 or later of PFM - Manager on an environment that already has a Performance Management program installed

    Health check function setting: Disabled

  - After a new installation of version 08-11 to 08-50 of PFM - Manager

    Health check function setting: Disabled

  - Upgrading version 06-70 to 08-00 of PFM - Manager to version 08-11 or later

    Health check function setting: Disabled

  - Upgrading version 08-11 or later of PFM - Manager

    Health check function setting: Setting prior to upgrading is used.

Because 06-70 to 08-00 versions of PFM - Manager do not have the health check function, the setting status in this case becomes *disabled*. For details on configuring the health check function, see the chapter that describes detecting problems in Performance Management in the *Job Management Partner 1/ Performance Management User's Guide*.

6.1.2 Process flow for installation and setup

The following figure shows the process flow for Performance Management installation and setup.

Figure 6-2: Process flow for installation and setup
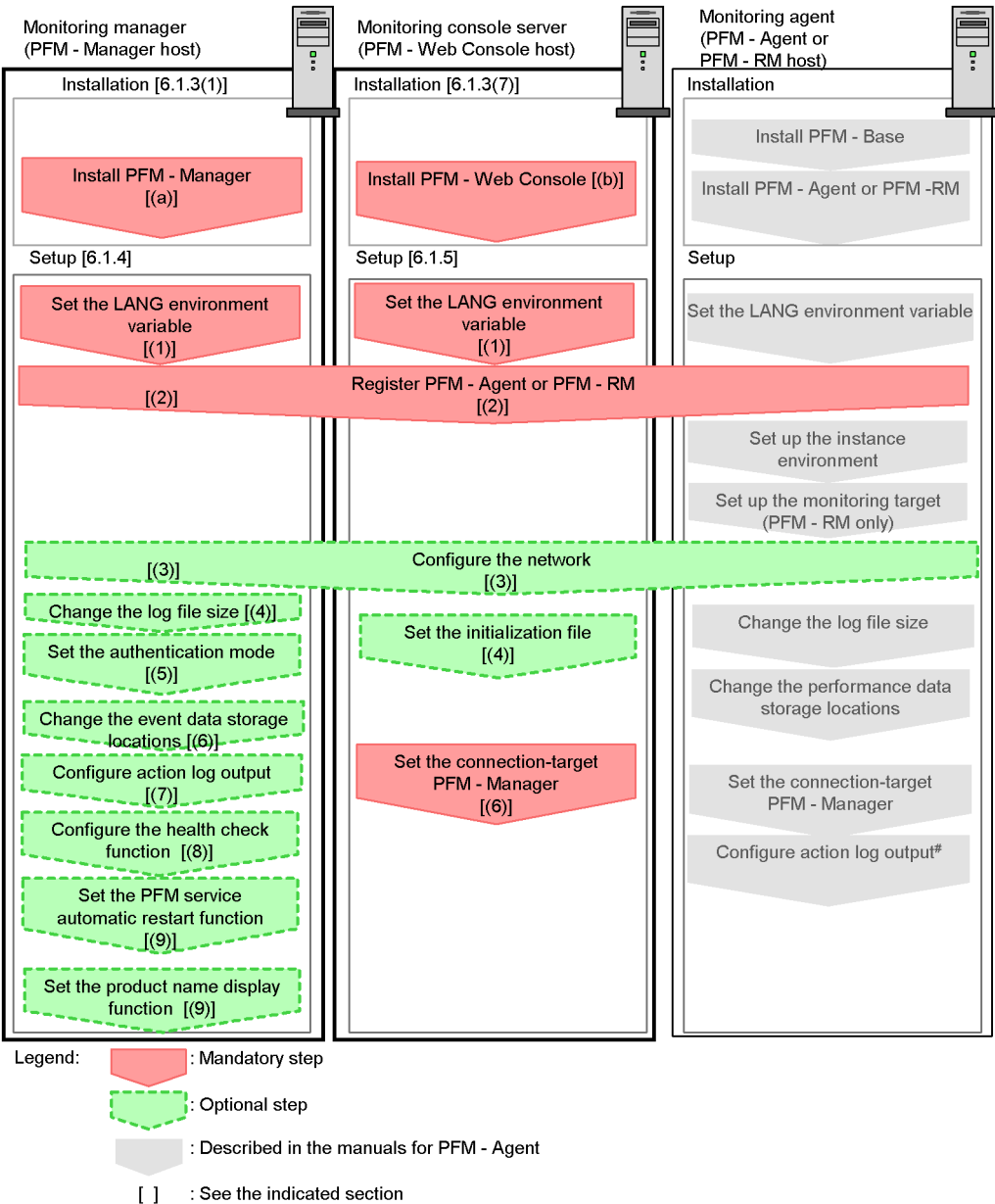
This subsection describes the procedures to install and set up PFM - Manager. For

details of the procedures to install PFM - Web Console, see *6.1.3(8) Installing the PFM - Web Console program*. For details of the procedures to set up PFM - Web Console, see *6.1.5 PFM - Web Console setup procedure*. The procedures to install and set up PFM - Agent or PFM - RM differ depending on the product. For details, see the appropriate PFM - Agent or PFM - RM manual.

6.1.3 Installation procedures

This subsection describes the procedure to install Performance Management programs, and the procedure to install programs provided on the CD-ROM. It also describes the procedure to install the PFM - Web Console program.

(1) Program installation steps

This subsection describes the steps to install Performance Management programs.

Note:

For Performance Management programs, you can install monitoring manager, monitoring console server, and monitoring agent in any order.

(a) Steps to install the monitoring manager

Install PFM - Manager on the monitoring manager.

1. Install PFM-Manager.

(b) Steps to install the monitoring console server

Install PFM - Web Console on the monitoring console server.

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1. Install PFM - Web Console.

(c) Steps to install the monitoring agent

First Install PFM - Base and then install PFM - Agent or PFM - RM. You cannot install PFM - Agent or PFM - RM on a host that does not have PFM - Base installed.

If you install PFM - Agent or PFM - RM and PFM - Manager on the same host, install PFM - Manager first, and then PFM - Agent or PFM - RM.

1. Install PFM- Base.   2. Install PFM - Agent or PFM - RM.

For details on the installation procedure, see the appropriate PFM - Agent or PFM - RM manual.

(2) Installing Performance Management programs

There are two ways to install Performance Management programs. One method uses the CD-ROM, and the other uses JP1/Software Distribution to perform remote installation. For details on how to use JP1/Software Distribution, see the following manuals:

- *Job Management Partner 1/Software Distribution Manager Description and Administrator's Guide*

- *Job Management Partner 1/Software Distribution SubManager Description and Administrator's Guide*

- *Job Management Partner 1/Software Distribution Client Description and User's Guide*

Note:

> If Performance Management programs and services are running on the host on which you intend to install the programs, stop all running programs and services. All services on the physical host and logical host must be stopped. For details on 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*.

The procedures to install programs by using CD-ROM for respective OSs are as follows:

(3) In HP-UX

To install the Performance Management programs by using the CD-ROM:

1. Log on as the root user to the host where you want to install the Performance Management programs, or use the `su` command to assume root user privileges.

2. Stop all the Performance Management programs and services on the local host.

3. Insert the CD-ROM media containing the Performance Management programs.

4. Execute the `mount` command to mount the CD-ROM device.

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

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

   Note that the command to execute varies depending on the environment.

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

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

   Hitachi Program Product Installer starts and the initial window appears.

6. From the initial window, enter `I`.

   A list of programs that can be installed is displayed.

7. Select a Performance Management program you wish to install.

   To select a program, move the cursor, and then select the target program with the

space bar.

8. Enter I.

For a new installation of PFM - Base, the setting window of PFM - Manager for the connection destination is displayed. For an overwrite installation, first the existing information on PFM - Manager for the connection destination is inherited, and then the program is installed.

9. If the setting window of PFM - Manager for the connection destination is displayed, enter the host name of the PFM - Manager to be connected.

You do not have to set PFM - Manager for the connection destination during installation. You can set it later. If you do not set PFM - Manager for the connection destination during installation, the physical host name of the agent host is used. After the installation, change PFM - Manager for the connection destination. For details on changing PFM - Manager for the connection destination, see *6.3.2 Changing PFM - Manager for the connection destination*.

10. Upon a successful installation, enter Q.

This returns to the initial window of Hitachi Program Product Installer.

(4) In Solaris 9 (SPARC) or Solaris 10 (SPARC)

To install the Performance Management programs by using the CD-ROM:

1. Log on as the root user to the host where you want to install the Performance Management programs, or use the su command to assume root user privileges.

2. Stop all the Performance Management programs and services on the local host.

3. Insert the CD-ROM media containing the Performance Management programs.

4. Execute the following command to start Hitachi Program Product Installer[#]:

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

Hitachi Program Product Installer starts and the initial window appears.

Note that the command to execute varies depending on the environment.

5. From the initial window, enter I.

A list of programs that can be installed is displayed.

6. Select a Performance Management program you wish to install.

To select a program, move the cursor, and then select the target program with the space bar.

7. Enter I.

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For a new installation of PFM - Base, the setting window of PFM - Manager for the connection destination appears. The setting window appears only when performing a new installation of PFM - Base on a host that does not already have version 08-00 or earlier of PFM - Agent installed. If you install PFM - Base on a host that has version 08-00 or earlier of PFM - Agent installed, or if you perform an overwrite installation of PFM - Base, the existing settings of PFM - Manager for the connection destination are inherited.

Also, if you select a program other than PFM - Base, the selected program is installed.

8. If the setting window of PFM - Manager for the connection destination appears, enter a host name of PFM - Manager for the connection destination.

You do not have to set PFM - Manager for the connection destination during installation. You can set it later. If you do not set PFM - Manager for the connection destination during installation, the physical host name of the agent host is used. After the installation, change PFM - Manager for the connection destination. For details on changing PFM - Manager for the connection destination, see *6.3.2 Changing PFM - Manager for the connection destination*.

9. Upon a successful installation, enter Q.

This returns to the initial window of Hitachi Program Product Installer.

\#

In an environment where the automount function is disabled, use the `/usr/sbin/mount` command in the following manner to mount the CD-ROM device prior to starting Hitachi Program Product Installer.

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

Note that the command to execute varies depending on the environment.

(5) In Solaris 10 (x86) or Solaris 10 (x64)

To install the Performance Management programs by using the CD-ROM:

1. To install the Performance Management programs by using the CD-ROM: Log on as the root user to the host where you want to install the Performance Management programs, or use the `su` command to assume root user privileges.

2. Stop all the Performance Management programs and services on the local host.

3. Insert the CD-ROM media containing the Performance Management programs.

4. Execute the following command to start Hitachi Program Product Installer:[#]

`/cdrom/cdrom/X86SOL/SETUP /cdrom/cdrom`

Hitachi Program Product Installer starts and the initial window appears.

Note that the command to execute varies depending on the environment.

5. From the initial window, enter I.

   A list of programs that can be installed is displayed.

6. Select a Performance Management program you wish to install.

   To select a program, move the cursor, and then select the target program with the space bar.

7. Enter I.

   For a new installation of PFM - Base, the setting window of PFM - Manager for the connection destination appears. The setting window appears only when performing a new installation of PFM - Base on a host that does not already have version 08-00 or earlier of PFM - Agent installed. If you install PFM - Base on a host that has version 08-00 or earlier of PFM - Agent installed, or if you perform an overwrite installation of PFM - Base, the existing settings of PFM - Manager for the connection destination are inherited.

   Also, if you select a program other than PFM - Base, the selected program is installed.

8. If the setting window of PFM - Manager for the connection destination appears, enter a host name of PFM - Manager for the connection destination.

   You do not have to set PFM - Manager for the connection destination during installation. You can set it later. If you do not set PFM - Manager for the connection destination during installation, the physical host name of the agent host is used. After the installation, change PFM - Manager for the connection destination. For details on changing PFM - Manager for the connection destination, see *6.3.2 Changing PFM - Manager for the connection destination*.

9. Upon a successful installation, enter Q.

   This returns to the initial window of Hitachi Program Product Installer.

\#

   In an environment where the automount function is disabled, use the `/usr/sbin/mount` command in the following manner to mount the CD-ROM device prior to starting Hitachi Program Product Installer.

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

   Note that the command to execute varies depending on the environment.

(6) In AIX

To install the Performance Management programs by using the CD-ROM:

1. Log on as the root user to the host where you want to install the Performance Management programs, or use the `su` command to assume root user privileges.

2. Stop the Performance Management programs and services on the local host.

3. Insert the CD-ROM media containing the Performance Management programs.

4. Execute the `mount` command to mount the CD-ROM device.

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

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

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

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

    Hitachi Program Product Installer starts and the initial window appears.

6. From the initial window, enter `I`.

    A list of programs that can be installed is displayed.

7. Select a Performance Management program you wish to install.

    To select a program, move the cursor, and then select the target program with the space bar.

8. Enter `I`.

    For a new installation of PFM - Base, the setting window of PFM - Manager for the connection destination appears.

    For an overwrite installation of PFM - Base, the existing settings of PFM - Manager for the connection destination are inherited and the PFM - Base programs are installed.

    Also, if you select a program other than PFM - Base, the selected program is installed.

9. If the setting window of PFM - Manager for the connection destination appears, enter a host name of PFM - Manager for the connection destination.

    You do not have to set PFM - Manager for the connection destination during installation. You can set it later. If you do not set PFM - Manager for the connection destination during installation, the physical host name of the agent host is used. After the installation, change PFM - Manager for the connection destination. For details on changing PFM - Manager for the connection destination, see *6.3.2 Changing PFM - Manager for the connection destination*.

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10. Upon a successful installation, enter Q.

    This returns to the initial window of Hitachi Program Product Installer.

(7) In Linux

1. Log on as the root user to the host where you want to install the Performance Management programs, or use the su command to assume root user privileges.

2. Stop the Performance Management programs and services on the local host.

3. Insert the CD-ROM media containing the Performance Management programs.

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

   /mnt/cdrom/linux/setup /mnt/cdrom

   Note:

   In the underlined portion above, specify the mount directory of the CD-ROM.

   Hitachi Program Product Installer starts and the initial window appears.

   Note that the command to execute varies depending on the environment.

5. From the initial window, enter I.

   A list of programs that can be installed is displayed.

6. Select a Performance Management program you wish to install.

   To select a program, move the cursor, and then select the target program with the space bar.

7. Enter I.

   For a new installation of PFM - Base, the setting window of PFM - Manager for the connection destination appears.

   For an overwrite installation of PFM - Base, the existing settings of PFM - Manager for the connection destination are inherited and the PFM - Base programs are installed.

   Also, if you select a program other than PFM - Base, the selected program is installed.

8. If the setting window of PFM - Manager for the connection destination appears, enter a host name of PFM - Manager for the connection destination.

   You do not have to set PFM - Manager for the connection destination during installation. You can set it later. If you do not set PFM - Manager for the connection destination during installation, the physical host name of the agent

host is used. After the installation, change PFM - Manager for the connection destination. For details on changing PFM - Manager for the connection destination, see *6.3.2 Changing PFM - Manager for the connection destination.*

9. Upon a successful installation, enter Q.

This returns to the initial window of Hitachi Program Product Installer.

Note:

If the installation directory points to a symbolic link, the symbolic link will be broken. Before installation, make sure that the following installation directory is a real directory:

```
/opt/jp1pc/*
```

(8) Installing the PFM - Web Console program

To install the PFM - Web Console program, use the Hitachi Program Product Installer supplied on the CD-ROM media.

(a) Log in

Only the root user can install PFM - Web Console from the Hitachi Program Product Installer. Log in as the root user to the host where you want to install the program.

(b) Start the Hitachi Program Product Installer

The Hitachi Program Product Installer is supplied on the CD-ROM media. Note the following when running the Hitachi Program Product Installer:

- The device special file name and the CD-ROM mount directory differ depending on the OS, hardware configuration, and system environment. Review the relevant manuals and your operating environment prior to starting Hitachi Program Product Installer.

- Make sure that the language type used by the Hitachi Program Product Installer matches that of the terminal where it is being run.

- Hitachi Program Product Installer uses the ncurses package (32 bit). Use the following command to confirm whether the ncurses package is installed:

```
#rpm -q --qf '%{NAME}-%{ARCH}\n' ncurses
```

If the ncurses package is installed, ncurses-i386 is displayed. Otherwise, package ncurses is not installed is displayed. In the latter case, install ncurses and related packages prior to starting Hitachi Program Product Installer.

Install the 32-bit version of ncurses, even when you intend to install products on a 64-bit machine.

(c) Mount the CD-ROM file system

Execute the following command to mount the CD-ROM file system:

```
mount -r -o mode=0544 /dev/cdrom /mnt/cdrom
```

Note:

Note that the device special file name and CD-ROM file system mount directory underlined above differ depending on your environment.

(d) Start the CD-ROM setup program

When you enter the following command, the CD-ROM setup program installs Hitachi Program Product Installer and the autostart program for the resident process onto the hard disk. Hitachi Program Product Installer then starts automatically.

```
/mnt/cdrom/LINUX/setup /mnt/cdrom
```

Note:

In the underlined portion above, specify the mount directory of the CD-ROM.

The names of files and directories on the CD-ROM might appear differently depending on such factors as your hardware environment. Use the `ls` command to confirm the proper file and directory names, and enter them as they appear in the command output.

(e) Install programs

Specify the distribution media and start Hitachi Program Product Installer or the CD-ROM setup program. Place the distribution media for PFM - Web Console in the appropriate device drive.

Choose `I` from the main menu to display the following program installation window:

```
        PP-NO.          VR                 PP-NAME
<@>001  PP-type         version-number     JP1/PFM - Web Console
        :
        :
F) Forward B) Backward J) Down K) Up Space) Select/Unselect I) Install Q) Quit
```

Move the cursor to the program you want to install, and then select the program or multiple programs with the space bar. The characters `<@>` appear to the left of the program you selected. Once you have selected the programs you want to install, enter `I` again to proceed. The following message appears at the bottom of the screen:

```
Install PP? (y: install,  n: cancel)==>
```

Enter `y` or `Y` to begin installation. If you enter any other character, the installation process is canceled and control is returned to the program installation window. You can

also enter Q to return to the main menu.

(f) Display a list of programs

Choose L from the main menu to display the following window that lists the programs installed on the host.

```
       PP-NO.    VR              Install date         PP-NAME
001 PP-type      version-number  YYYY/MM/DD hh:mm     JP1/PFM - Web Console
        :
        :
F) Forward B) Backward Q) Quit P) Print to /tmp/hitachi_PPLIST ==>
```

Note:

The Install date underlined above shows the time when the program was installed.

Choose P to output a list of installed programs to /tmp/hitachi_PPLIST. Choose Q to return to the main menu.

(g) Notes on installing programs using Hitachi Program Product Installer

Note the following when installing programs using Hitachi Program Product Installer:

- The disk space required for installation is equivalent to twice the capacity of the product disk. This is to allow for data to be copied from a temporary work directory to the product directory.

- The PFM - Web Console installation directory (/opt/jp1pcwebcon) is fixed and cannot be changed.

- The PFM - Manager or PFM - Base installation directory (/opt/jp1pc) is fixed and cannot be changed.

- Before performing an overwrite installation of PFM - Web Console, stop all PFM - Web Console services.

- Before performing an overwrite installation of PFM - Manager or PFM - Base, stop all Performance Management services on the host.

- If the installation fails with the message Installation failed in the status bar, collect the /etc/.hitachi/.hitachi.log and /etc/.hitachi/.install.log file and then contact the system administrator.

  Because the log file will be overwritten the next time you start Hitachi Program Product Installer, make backups as necessary.

- When installing PFM - Web Console to a linked directory, files and directories with the same name at the link destination are overwritten.

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6.1.4 PFM - Manager setup procedure

This subsection describes how to set up PFM - Manager installed on the monitoring managers.
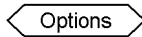
⟨ Options ⟩ indicates setup items required according to each environment and optional setup items used to change default settings.

(1) Setting the LANG environment variables

The following table lists the possible values that can be set to the LANG environment variables in Performance Management:

Before setting the LANG environment variables, verify that the language environment to set is properly installed and configured. If the language is not installed and configured properly, text might be garbled and definition data might be overwritten erroneously.

Note:

The LANG environment variables set at the time of service startup or command execution determines the language of the common message log. Therefore, the log might contain a mixture of text with different language codes.

Table 6-3: LANG environment variables available in Performance Management

OS	Language	LANG environment variable value
Linux	English	C
Solaris[#]	English	C
AIX	English	C

#

If you link with Network Node Manager (NNM), you can only use the following LANG environment variables in the setup script.

Table 6-4: LANG environment variables available in the setup script when linking with NNM

OS	Language	LANG environment variable value
Solaris	English	C

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(2) Registering PFM - Agent or PFM - RM ⟨ Options ⟩

You must register PFM - Agent or PFM - RM in PFM - Manager in order to perform integrated management of PFM - Agent or PFM - RM by using PFM - Manager and PFM - Web Console.

If the version of PFM - Manager is 09-00 or later, the registration is performed automatically, making the instructions described here unnecessary.

However, for PFM - Agent or PFM - RM released after PFM - Manager, you might need to perform a manual registration. For details, see the PFM - Manager Release Notes.

Reference note:

The information on the automatically registered PFM - Agent or PFM - RM is displayed in PFM - Web Console at the following timing:

If the version of PFM - Web Console is 09-00 or later:

The information is displayed when you log into PFM - Web Console again after starting the registered PFM - Agent or PFM - RM.

If the version of PFM - Web Console is 08-11 or earlier:

The information is displayed when you restart PFM - Web Console after starting the registered PFM - Agent or PFM - RM.

If you want to register PFM - Agent or PFM - RM before starting the console, execute the `jpcconf agent setup` command with the `-register` option specified. For details on the `jpcconf agent setup` command, see the chapters that describe commands in the manual *Job Management Partner 1/ Performance Management Reference*.

The following figure shows the process flow for PFM - Agent or PFM - RM registration.

Figure 6-3: Process flow for PFM - Agent or PFM - RM registration

Note

- Register PFM - Agent or PFM - RM before setting the instance environment of PFM - Agent or PFM - RM.

- You do not need to register PFM - Agent or PFM - RM when you add the same version of PFM - Agent or PFM - RM with the same product ID to a Performance Management system in which the PFM - Agent or PFM - RM information has been already registered.

- If you install a different version of PFM - Agent or PFM - RM with the same product ID on a different host, first set up the older version of PFM - Agent or PFM - RM, and then set up the newer version of PFM - Agent or PFM - RM.

- If you install PFM - Agent or PFM - RM on the same host that has PFM - Manager installed, the `jpcconf agent setup` command is executed automatically. In PFM - Agent or PFM - RM, the execution results are logged as `KAVE05908-I New agent setup (`*pfm-agent-service-key*`) ended successfully. (version=`*version*`)` to the common message log. Check the results. If the command has not been executed correctly, execute the command again. For details on how to execute the commands, see the chapters that describe commands in the *Job Management Partner 1/ Performance Management Reference*.

(a) Copying the PFM - Agent or PFM - RM setup file

Copy the setup file on a host that has PFM - Agent or PFM - RM onto a host that has PFM - Manager installed.

To copy the PFM - Agent setup file:

1. Copy the setup file of PFM - Agent or PFM - RM in binary mode.

   The following table gives the locations where files are stored, and the location where files are to be copied.

   Table 6-5: Setup files to be copied

Copy from		Copy to	
Host	**File**	**Host**	**File**
PFM - Agent, PFM - RM	• In Windows: *installation-folder*\setup\jpc*xxxx*u.Z • In UNIX: /opt/jp1pc/setup/ jpc*xxxx*u.Z	PFM - Manager	/opt/jp1pc/ setup

   Legend:

   > *xxxx* indicates the service key of each PFM - Agent or PFM - RM. For details on service keys, see the appropriate PFM - Agent or PFM - RM manual.

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

Execute the following command on the PFM - Manager host to set up PFM - Agent or PFM - RM.

```
jpcconf agent setup -key xxxx
```

xxxx indicates the service key of each PFM - Agent or PFM - RM.

For example, execute the following command to set up PFM - Agent for Oracle:

```
jpcconf agent setup -key Oracle
```

Note:

> An error might occur if you execute the `jpcconf agent setup` command when Performance Management programs and services have not completely stopped on the local host where you want to execute the command. In such cases, make sure that the Performance Management programs and services have completely

stopped and then execute the `jpcconf agent setup` command again.

You can delete the setup file of PFM - Agent or PFM - RM after this procedure has finished.

(3) Specifying settings for the network ⟨ Options ⟩

Settings described in this subsection are only required if you change settings according to the network configuration on which Performance Management is used.

You can set the following two items for network settings:

■ Setting IP addresses

Set this item when Performance Management is used in a network with multiple LANs connected. To set multiple IP addresses, define the host name and IP address in the `jpchosts` file. Confirm that the settings in `jpchosts` files are the same throughout the entire Performance Management system.

For details, see *6.3.1 Changing the network configuration*.

■ Setting port numbers

You can set the port numbers used by Performance Management. Use the same port numbers and service names for the entire Performance Management system to avoid confusion during operation.

For procedures on setting port numbers, see *6.3.1(1)(b) Setting port numbers*.

(4) Changing the log file size ⟨ Options ⟩

The operating status of Performance Management is output to a Performance Management-specific log file. This log file is called the *common message log*. The common message log uses by default two 2,048-KB files. This setting is required only when you wish to change this file size.

For details, see *6.4.1 Setting the size of the log file for the common message log*.

(5) Specifying settings for the authentication mode ⟨ Options ⟩

This setting is required only when you wish to change the authentication mode of Performance Management from PFM authentication mode to JP1 authentication mode.

For details, see the chapter that describes management of user accounts in the *Job Management Partner 1/Performance Management User's Guide*.

(6) Changing the storage locations of event data ⟨ Options ⟩

The settings below are required when you wish to change the storage destination, backup destination, or export destination of the event data managed by PFM - Manager.

By default, event data is stored in the following locations:

- Data storage directory: `/opt/jp1pc/mgr/store`

- Backup directory: `/opt/jp1pc/mgr/store/backup`

- Export directory: `/opt/jp1pc/mgr/store/dump`

Note:

For the default folders when running Performance Management on a logical host, read `/opt/jp1pc` as *environment-directory*`\jp1pc`.

For details on changing the settings, see *6.4.2 Changing the storage location of event data*.

(7) Specifying settings for action log output ⟨ Options ⟩

This setting is required when you wish to output action log data when an alarm is issued. Action log data is output in cooperation with the alarm function, when an aspect of the system such as the system load exceeds a threshold. For details, see *G. Outputting Action Log Data*.

(8) Configuring the health check function ⟨ Options ⟩

This setting is required when you wish to check the operation status of monitoring agents and their hosts. For details on setting procedure, see the chapter that describes detecting problems in the *Job Management Partner 1/Performance Management User's Guide*.

(9) Configuring the PFM service automatic restart function ⟨ Options ⟩

This setting is required if you want PFM services to automatically restart if they terminate abnormally. For details on specifying this setting, see the chapter that describes detecting problems in Performance Management in the *Job Management Partner 1/Performance Management User's Guide*.

(10) Configuring the product name display function ⟨ Options ⟩
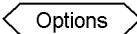
This setting is required if you want to enable the product name display function when you upgrade from version 08-11 or earlier, or when you perform a new installation. For details on this function, see *4.1.2 Displaying and specifying services*. For details

specifying this setting, see *6.4.8 Configuring the product name display function*.

6.1.5 PFM - Web Console setup procedure

This subsection describes how to set up PFM - Web Console installed on a monitoring console server.

⟨ Options ⟩ indicates setup items required according to each environment and optional setup items used to change default settings.

(1) Setting the LANG environment variable

The following table lists the possible values that can be assigned to the LANG environment variables in PFM - Web Console.

Before assigning a value to the LANG environment variable, make sure that the language environment you specify is installed and configured correctly. If the language is not installed and configured correctly, you might encounter issues such as characters appearing garbled or definition data being overwritten erroneously.

Note:

The LANG environment variables set at the time of service startup or command execution determines the language of the operation status log. Therefore, the log might contain a mixture of text with different language codes.

Table 6-6: LANG environment variables available in PFM - Web Console

OS	Language	LANG environment variable
Linux	English	C

(2) Registering PFM - Agent or PFM - RM ⟨ Options ⟩

You must register PFM - Agent or PFM - RM in PFM - Web Console in order to perform integrated management of PFM - Agent or PFM - RM by using PFM - Manager and PFM - Web Console.

If the version of PFM - Web Console is 08-11 or later, PFM - Agent or PFM - RM is automatically registered, following the instructions described here are unnecessary. However, for PFM - Agent or PFM - RM released after PFM - Web Console, you might need to perform manual registration. For details on whether you need to manually register PFM - Agent or PFM - RM, see the PFM -Web Console Release Notes.

The following figure shows the process flow for registering PFM - Agent or PFM - RM.

Figure 6-4: Process flow for registering PFM - Agent or PFM - RM

Notes:

- You do not need to register PFM - Agent or PFM - RM when you add the same version of PFM - Agent or PFM - RM with the same product ID to a Performance Management system in which the PFM - Agent or PFM - RM information has been already registered.

- Set up the latest version of PFM - Agent or PFM - RM if you install a different version of PFM - Agent or PFM - RM with the same product ID on a different host.

(a) Copying the PFM - Agent or PFM - RM setup file

Copy the setup file on a host that has PFM - Agent or PFM - RM onto a host that has PFM - Web Console installed.

To copy the PFM - Agent setup file:

1. Stop PFM - Web Console if it is running.

2. Copy the setup file of PFM - Agent or PFM - RM in binary mode.

   The following table gives the locations where the files are stored, and the location where the files are to be copied.

Table 6-7: Setup files to be copied

Copy from		Copy to	
Host	**File**	**Host**	**File**
PFM - Agent, PFM - RM	• In Windows: *installation-folder*\setup \jpc*xxxx*u.Z • In UNIX: /opt/jp1pc/setup/ jpc*xxxx*u.Z	PFM - Web Console	/opt/ jp1pcwebcon/ setup

Legend:

xxxx indicates the service key of each PFM - Agent or PFM - RM. For details on service keys, see the appropriate PFM - Agent or PFM - RM documentation.

(b) Executing the setup command on the PFM - Web Console host

Execute the following command on PFM - Web Console to set up PFM - Agent or PFM - RM.

```
jpcwagtsetup
```

You can delete the PFM - Agent or PFM - RM setup file on the PFM - Web Console host after this procedure has finished.

Note:

Even though PFM - Web Console is installed on the same host as PFM - Agent or PFM - RM, you must execute the jpcwagtsetup command.

(3) Specifying settings for the network ⟨ Options ⟩

The setting described in this subsection is only required when adjusting the network configuration of PFM - Agent to match that used by Performance Management.

You can set the following item for network settings:

- Setting port numbers

  Set port numbers to be used by PFM - Web Console.

  For details on setting port numbers, see *6.4.6 Changing PFM - Web Console settings*.

(4) Specifying settings in the initialization file (config.xml) ⟨ Options ⟩

The settings required for operating PFM - Web Console are defined in the initialization file (`config.xml`). The settings described in this subsection are only required when you want to change the initial settings in the file.

The `config.xml` file contains settings related to the log files for PFM - Web Console and the amount of data that can be displayed in the console window. For details, refer to *6.4.6 Changing PFM - Web Console settings*.

(5) Creating an authentication key file for PFM - Web Console ⟨ Options ⟩

If you want to execute the PFM - Web Console commands, you must first execute the `jpcmkkey` command. For details on the `jpcmkkey` command, see the chapter describing the command in the manual *Job Management Partner 1/Performance Management Reference*.

(6) Setting the connection-target PFM - Manager for PFM - Web Console ⟨ Options ⟩

Set the PFM - Manager that connects to PFM - Web Console. To set the connection-target PFM - Manager, edit the initialization file (`config.xml`).

For details, see *6.4.6(1)(b) Setting PFM - Manager for the connection destination*.

(7) Setting the starting user and group for PFM - Web Console ⟨ Options ⟩

By default, the PFM - Web Console services are started with `nobody/root` permissions. If you fail to start PFM - Web Console with this user and group, the message `KAVJT0003-E` is output.

In this case, change the **User** and **Group** setting in the `/opt/jp1pcwebcon/CPSB/httpsd/conf/httpsd.conf` file to a system user (other than `root`) and the group to which that user belongs, respectively. In the following example, the boldface indicates the points to be changed:

```
        :
ServerName www.example.com
Port 80
User nobody
Group root
ServerRoot "/opt/jp1pcwebcon/CPSB/httpsd"
        :
```

6.1.6 Procedure for setting up the monitoring console browser

You need to configure the browser to use PFM - Web Console:

- Enable JavaScript

- Enable file downloads

- Enable Cookies

- Display images (GIF data)

- Check the page cache

- Set the font size

The following browsers are supported when using the monitoring console in a UNIX environment:

Table 6-8: Supported browser if the monitoring console runs in UNIX

Browser	Version	OS	Supported in PFM - Web Console version:
Firefox	3	Linux	09-00 or later
	2.0.x	Linux	08-11 or later

The following tables list the settings for each browser.

(1) When using Firefox 3

Table 6-9: Firefox 3 settings

Menu	Category	Setting item
Edit **- Preferences**	**Privacy - Cookie**	**Accept cookies from sites** You can use any retention setting.
	Content	**Load images automatically** **Enable JavaScript**
	Content - Enable Javascript	Click **Advanced**, and then select **Move or resize existing windows**.
	Contents - Fonts & Colors	Use the default values.
	Content - Languages	Click **Languages**, and then move "**en**" to the top of the list.
	Security - Passwords	Clear the **Remember passwords for sites** check box.

(2) When using Firefox 2.0.*x*

Table 6-10: Firefox 2.0.*x* settings

Menu	Category	Setting item
Edit **- Preferences**	**Privacy - Cookies**	**Accept cookies from sites** You can choose to retain cookies.
	Content	**Load images automatically** **Enable JavaScript**
	Content - Enable Javascript	Click **Advanced**, and then select **Move or resize existing windows**.
	Content - Fonts & Colors	Use the default values.
	Security - Passwords	In **Passwords**, clear the **Remember passwords for sites** check box.
	Details - Languages	Move "**en**" to the top of the list.

6.2 Uninstallation and unsetup

This section describes the uninstallation and unsetup procedures for the Performance Management programs.

6.2.1 Before uninstallation and unsetup

The following gives cautionary notes on uninstalling and performing unsetup of Performance Management:

(1) Notes on the OS user permission required for uninstallation

Make sure you are the root user when uninstalling Performance Management programs.

(2) Notes on the network

Even though Performance Management programs are uninstalled, the port numbers defined in the `services` file are not deleted.

(3) Notes on programs

- Files or directories might remain if you uninstall Performance Management programs while other programs or services, or programs that reference Performance Management files are running. In such cases, manually delete all of the directories and files under the installation folder.

- If a host has PFM - Base and either PFM - Agent or PFM - RM installed, you have to uninstall PFM - Agent or PFM - RM first in order to uninstall PFM - Base. In such cases, uninstall PFM - Agent or PFM - RM, and then uninstall PFM - Base. Additionally, if a host has PFM - Manager and either PFM - Agent or PFM - RM installed, you have to uninstall PFM - Agent or PFM - RM first to uninstall PFM - Manager. In such cases, uninstall PFM - Agent or PFM - RM, and then uninstall PFM - Manager.

(4) Notes on services

- Stop all Performance Management programs and services in the entire Performance Management system before you uninstall PFM - Manager.

- Uninstalling only PFM - Agent or PFM - RM does not delete service information that can be displayed by using the `jpctool service list` command. In such cases, use the `jpctool service delete` command to delete the service information. For details on how to delete service information, see *6.2.3 Deleting the service information*.

- If you uninstall PFM - Manager and then re-install it on the same machine, two Trap Generator services might be displayed when the `jpctool service list` command is executed. In such cases, start the PFM - Manager service and use the

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`jpctool service delete` command to delete the Trap Generator that is `Inactive`.

(5) Notes on PFM - Web Console

- The uninstall log is output to `/etc/.hitachi/.uninstall.log`.

- If uninstallation fails, back up the log (`/etc/.hitachi/.uninstall.log`) output during the uninstallation process, remove the cause of the problem, and then try again. If JP1/PFM - Web Console does not appear in the list of programs you can uninstall, then install it again, and then repeat the uninstallation process.

- When you uninstall Performance Management programs from a host that has PFM - Web Console installed, close all browser windows before uninstalling the programs.

(6) Other related notes

- If an instance environment is set in PFM - Agent or PFM - RM, perform unsetup of the instance environment before uninstalling PFM - Agent or PFM - RM. For details on the unsetup procedure, see the chapters describing installation and setup in the appropriate PFM - Agent or PFM - RM documentation.

- If the OpenView linkage facility is used, perform unsetup of the facility before uninstalling PFM - Manager or PFM - Base. For details on the unsetup procedure, see the chapter that describes the linkage with Network Node Manager (NNM) for operation monitoring in the *Job Management Partner 1/Performance Management User's Guide*.

6.2.2 Uninstallation procedures

(1) Uninstallation procedure for Performance Management programs

To uninstall the Performance Management programs:

1. Log on to the host from which you want to uninstall the Performance Management programs as the root user, or use the `su` command to assume root user privileges.

2. Stop the Performance Management programs and services on the local host.

   Display the service information and make sure that the services are not running. Stop all Performance Management programs and services that are running on the local host. All services on the physical host and logical host must be stopped.

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

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

   `/etc/hitachi_setup`

Hitachi Program Product Installer starts and the initial window appears.

4. From the initial window, enter D.

   A list of programs that can be uninstalled is displayed.

5. Select the Performance Management program to uninstall, and then enter D.

   The selected program is uninstalled. To select a program, move the cursor, then select the target program with the space bar.

   To delete PFM - Manager or PFM - Base, you must uninstall all other Performance Management programs beforehand.

6. Upon a successful uninstallation, enter Q.

   This returns to the initial window of Hitachi Program Product Installer.

(2) Uninstallation procedure for the PFM - Web Console program

Enter the following command to uninstall the PFM - Web Console program:

```
/etc/hitachi_setup
```

Choose D from the main menu to display the following window, from which you can delete programs.

```
         PP-NO.          VR                  PP-NAME
<@>001  PP-type         version-number      JP1/PFM - Web Console
        :
        :
F) Forward B) Backward J) Down K) Up Space) Select/Unselect D) Delete Q) Quit
```

Move the cursor to the program you want to uninstall, and then select the program with the space bar. The characters <@> appear to the left of the program you selected. You can also select multiple programs.

When you have selected the programs you want to uninstall, type D. The following message appears at the bottom of the screen:

```
Delete PP? (y: delete,  n: cancel)==>
```

Enter y or Y to begin uninstallation. If you enter n or N, the installation process is canceled and control is returned to the program deletion window. You can also enter Q to return to the main menu.

(a) Notes on uninstalling the PFM - Web Console program

Note the following when uninstalling the PFM - Web Console program:

- If you uninstall the PFM - Web Console program while any of the following conditions apply, some files or directories might remain in the system. Manually delete the `/opt/jp1pcwebcon` directory and any files and directories remaining in the directory.

    - The service is running

    - The current directory is `/opt/jp1pcwebcon` or a subordinate directory when `/etc/hitachi_setup` is executed

    - A link was made to `/opt/jp1pcwebcon` when installing PFM - Web Console

    - Attempts to delete the logical host environment fail

6.2.3 Deleting the service information

You must delete the service information displayed by the `jpctool service list` command in the following cases:

- When PFM - Agent or PFM - RM is uninstalled.

- When PFM - Manager for the connection destination is changed

- When one of the following host names are changed after the operation starts.

    - PFM - Manager

    - PFM - Agent or PFM - RM

    - PFM - Base

You can delete service information by using the `jpctool service delete` command. If communication is impossible because of physical reasons, such as when the LAN cable is disconnected from the PFM - Agent host, you cannot delete the service information normally. In this case, to forcibly delete service information, specify the `-force` option.

To delete the service information:

1. Log on to the host where PFM - Manager is installed.

2. Execute the `jpctool service delete` command by specifying the service ID of the service you wish to delete.

    For example, to delete the information on the Agent Store service of PFM - Agent for Oracle on the host02, specify as follows:

    ```
    jpctool service delete -id "OS*" -host host02
    ```

3. Restart PFM - Manager.

4. Restart the PFM - Web Console.

6.3 Changing the Performance Management system configuration

You might need to change the Performance Management system configuration depending on configuration changes in systems being monitored. This section describes the procedures to change the Performance Management system configuration.

6.3.1 Changing the network configuration

This subsection describes the procedure to change the Performance Management settings when the network configuration is changed.

For details on commands, see the chapters that describe commands in the manual *Job Management Partner 1/Performance Management Reference*. For details on settings and notes about communication through a firewall between PFM - Manager and PFM - Web Console or between PFM - Manager and either PFM - Agent or PFM - RM, see the list of port numbers in the appendix of the manual *Job Management Partner 1/ Performance Management Reference*.

(1) Procedure on the PFM - Manager host and either PFM - Agent host or PFM - RM host

This subsection describes the procedure to change network settings on the PFM - Manager host and either PFM - Agent host or PFM - RM host.

(a) Setting IP addresses

You need to set IP addresses if you wish to specify IP addresses to use Performance Management in a network environment connected to multiple LANs.

To set the IP address, directly edit the content of the jpchosts file.

Note:

If you have set the jpchosts file, the definitions in the hosts file or DNS are not referenced for a host name defined in the jpchosts file. Therefore, the IP address obtained from a host name must be defined in the jpchosts file.

To set IP addresses:

1. Use a text editor or a similar tool to open the jpchosts file.

   The jpchosts file is stored in the /opt/jp1pc directory.

2. Edit the jpchosts file.

   For example, if there is a hostA with the IP address 20.108.41.1 and a hostB with the IP addresses 20.108.41.2 and 20.108.41.3, set the IP addresses of the hosts as follows:

```
hostA 20.108.41.1
hostB 20.108.41.2, 20.108.41.3
```

If you want to provide an alias name `aliasA` to a host whose IP address is 20.108.41.1, specify the name as follows:

```
aliasA 20.108.41.1
```

- If more than one IP address is set for one host, then the first specified IP address is given priority.
- IP address settings becomes invalid if any of the following conditions are met:

    - When the host name length is 33 bytes or longer

    - When the host name is `localhost`

    - When an IP address in dotted decimal format is used for the host name (example: `172.16.233.12`)

    - When the host name starts with a hyphen (`-`)

    - When the host name includes the following characters or space characters:

      `\ / : , ; * ? " > < | . =`

- Specify IP addresses in dotted decimal format (for example: `172.16.233.12`).
- You can specify up to 16 IP addresses for one host.

3. Stop Performance Management on the host whose IP address you set, and then copy the `jpchosts` file according to the instructions in note 2 below.

4. Restart Performance Management on the host.

    The information settings for the `jpchosts` file become valid when Performance Management is restarted.

Note 1

    In name resolution using the `jpchosts` file, if the IP address that was set first becomes invalid, the system does not simply continue and use the IP address that was set second. For the next and subsequent communications, an attempt is made to use the first IP address and then the following addresses in order.

Note 2

    Determining whether to add settings for a PFM - Manager host to `jpchosts`

1. When the PFM - Manager host uses a single NIC:

   `jpchosts` of PFM - Manager: Setting not required.

   `jpchosts` of PFM - Agent or PFM - RM connected to PFM - Manager: Setting not required.

2. When the PFM - Manager host uses two or more NICs:

   `jpchosts` of PFM - Manager: Specify the IP address you want to allocate to PFM - Manager.

   `jpchosts` of PFM - Agent or PFM - RM connected to PFM - Manager: Specify the IP address you want to allocate to PFM - Manager.

Determining whether to add settings for a PFM - Agent or PFM - RM host to `jpchosts`

Perform the steps below for each PFM - Agent or PFM - RM host in the system.

1. When the PFM - Agent or PFM - RM host uses a single NIC:

   `jpchosts` of PFM - Manager: Setting not required.

   `jpchosts` of the confirmed instance of PFM - Agent or PFM - RM: Setting not required.

   `jpchosts` of other instances of PFM - Agent or PFM - RM: Setting not required.

2. When the PFM - Agent or PFM - RM host uses two or more NICs:

   `jpchosts` of PFM - Manager: Specify the IP address you want to allocate to the PFM - Agent or PFM - RM.

   `jpchosts` of the confirmed instance of PFM - Agent or PFM - RM: Specify the IP address you want to allocate to the PFM - Agent or PFM - RM.

   `jpchosts` of other instances of PFM - Agent or PFM - RM: Setting not required.

   Note: If you want the PFM - Agent or PFM - RM to be able to communicate with another PFM - Agent host or PFM - RM host during operations such as using the `jpctool db backup` command, `jpctool db clear` command, `jpctool db dump` command, or `jpctool service list` command, you need to add the setting for the confirmed instance of PFM - Agent or PFM - RM to the `jpchosts` file.

(b) Setting port numbers

Set a fixed port number for each service when you want to operate the Performance Management system with fixed port numbers for reasons such as to allow communication through a firewall between PFM - Manager and PFM - Web Console, or between PFM - Manager and either PFM - Agent or PFM - RM.

Use the `jpcconf port define` command to set a fixed port number for each service or change port numbers that have been set. Use the Windows initialization file (`config.xml`) to set the port numbers on the PFM - Web Console side. For details on how to change the `config.xml` file on the PFM - Web Console host, see *6.4.6 Changing PFM - Web Console settings*.

For procedures on setting port numbers, see the description of firewall routing in the appendixes of the manual *Job Management Partner 1/Performance Management Reference*.

Supplemental information:

To avoid confusion during operations, use the same port numbers and service names throughout the entire Performance Management system.

To set port numbers:

1. Execute the `jpcconf port define` command.

   For example, to set fixed values to the port numbers for all services, specify and execute the command as follows:

   ```
   jpcconf port define -key all
   ```

2. Set a port number for the individual services.

   Executing the `jpcconf port define` command displays the currently set port number or default port number.

   For example, the current port number 22285 for the Name Server service is displayed as follows:

   ```
   Component[Name Server]
   ServiceID[PN1001]
   Port[22285]
        :
   ```

   Actions vary depending on how you set the port number. The following table lists and describes the settings and actions. As long as there is no duplicate port numbers in the system, use the port number displayed by the `jpcconf port define` command as is.

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Settings	Action
To use the displayed number as the fixed port number for a service	Press the return key.
To change the displayed port number to another number	Enter a port number between 1024 - 65535. However, you cannot specify the port numbers currently used by the system.
Port numbers that are not fixed	Enter `0`. However, you cannot fix port numbers for the following services: If you enter `0`, the default value is set. • Name Server service • View Server service (between PFM - Web Console and View Server service) • NNM Object Manager service • Status Server service

Notes:

- If Performance Management programs and services are running when you set port numbers, stop the services and then execute the `jpcconf port define` command. After completing the port number settings, manually start the services.

- The port number cannot be set correctly if you use the **Ctrl+C** key command to interrupt execution of the `port define` command. Execute the `jpcconf port define` command again to set the port number.

3. Execute the `jpcconf port list` command again to check if the port number has been set correctly.

   For example, to display the port numbers used by all services, specify and execute the command as follows:

   ```
   jpcconf port list -key all
   ```

   If `<error>` is displayed in the Service area or Port area, the port numbers have not been set correctly. Set the port numbers again. One of the following could be the cause of the error:

   - The port number is not registered in the `services` file.

   - The same port number is already registered in the `services` file.

6.3.2 Changing PFM - Manager for the connection destination

This subsection describes how to change PFM - Manager for the connection

destination after the Performance Management system is configured.

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

(1) Setting procedure on the PFM - Agent or PFM - RM ⟨ Options ⟩

Use the `jpcconf mgrhost define` command to change PFM - Manager for the connection destination of PFM - Agent or PFM - RM.

If you installed PFM - Agent or PFM - RM on the same host as PFM - Manager, or if you set PFM - Manager for the connection destination during the installation of PFM - Base, this step is unnecessary.

Notes:

- PFM - Agent cannot connect to more than one instance of PFM - Manager. You can set only one instance of PFM - Manager for the connection destination for one monitoring agent. Therefore, if multiple instance of PFM - Agent or PFM - RM are installed on the same monitoring agent, you cannot set a different instance of PFM - Manager as the connection destination for each instance of PFM - Agent or PFM - RM.

- If PFM - Agent or PFM - RM and PFM - Manager are installed on the same host, PFM - Manager for the connection destination is set to PFM - Manager on the local host. In such cases, you cannot change PFM - Manager for the connection destination to that of one on the remote host.

- Before you attempt to change PFM - Manager for the connection destination, stop all Performance Management programs and services running on the local host.

- If the version of PFM - Base is 08-11 or later and you have installed PFM - Agent or PFM - RM, without setting PFM - Manager for the connection destination, you must change PFM - Manager for the connection destination.

To change the PFM - Manager for the connection destination of PFM - Agent:

1. Stop Performance Management programs and services.

   Stop all Performance Management programs and services that are running. Use the `jpcspm stop` command to stop services.

   ```
   jpcspm stop -key jp1pc
   ```

2. Change PFM - Manager for the connection destination.

   Use the `jpcconf mgrhost define` command to change PFM - Manager for

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the connection destination. For example, if you wish to change PFM - Manager for the connection destination to PFM - Manager on the host *host02*, specify as follows:

```
jpcconf mgrhost define -host host02
```

3. After the change, make sure that PFM - Manager for the new connection destination is running.

4. Restart the Performance Management programs and services on the PFM - Agent host or PFM - RM host.

In addition, in PFM - Manager for the connection destination before the change, delete all service information of the Performance Management programs to which the host name of PFM - Agent or PFM - RM is added. For details on how to delete service information, see *6.2.3 Deleting the service information*.

(2) Procedure on the PFM - Web Console host

Change the information in the Windows initialization file (`config.xml`) to change PFM - Manager for the connection destination. For details, see *6.4.6(1)(b) Setting PFM - Manager for the connection destination*.

6.3.3 Changing the host name in a Performance Management system

This subsection describes how to change the host name in a Performance Management system. A host name that is applied to the Performance Management system is called a *monitoring host name*.

Reference note:

The monitoring host name forms part of the service ID (that is, device name). For example, if you installed PFM - Agent for Platform (UNIX) on a host whose monitoring host name is `HostA`, the service ID of Agent Collector is `UA1HostA`. If you use the product name display function, the service ID is `HostA<UNIX>`.

By default, the *real host name* is used as the monitoring host name (obtained from OS with the `uname -n` command).

For a Performance Management system existing within in a physical host environment, you can set a host name or an *alias name* obtained from the OS with `hostname` command (any given host name) as the monitoring host name. This function is called the *function for setting monitoring-host names*.

For example, in an environment with multiple hosts sharing the same real host name, this allows you to distinguish the hosts by alias name.

To identify the monitoring host name currently used by the Performance Management system, you must execute the following command. In this command, `hostmode` represents the method used to obtain the monitoring host name and `hostname` represents the monitoring host name.

```
jpcconf host hostmode -display
```

Example

```
hostmode  : uname

hostname  : hostA
```

The following table describes the relationship between the monitoring host name and the method used to obtain the name.

Table 6-11: Relationship between the monitoring host name and the method used to obtain the name

Method for acquiring a monitoring host name	Monitoring host name
Uname	Physical host name (displayed by using the `uname -n` command)
Hostname	Physical host name (displayed by using the `hostname` command)
Alias	Alias name

To set an alias name for the monitoring host name, you must execute the `jpcconf host hostmode` command to set `hostname` or `alias` as the method used to obtain the monitoring host name.

If you execute the `jpcconf host hostmode` command, all existing information, such as definition and performance information, is inherited. For details on the `jpcconf host hostmode` command, see the chapters that describe commands in the manual *Job Management Partner 1/Performance Management Reference*.

Note:

Do not execute any other commands while executing the `jpcconf host` command. If you execute another command, both the `jpcconf host` command and the executed command might fail.

(1) Changing the monitoring host name of the PFM - Manager host

You must perform operations on the following hosts when changing the monitoring host name of the PFM - Manager host:

• PFM - Manager host

- PFM - Web Console host
- PFM - Agent or PFM - RM host
- Monitoring console

The following figure shows the process flow.

Figure 6-5: Process flow for changing the monitoring host name of the PFM - Manager host

Monitoring manager (PFM - Manager host)

Monitoring console server (PFM - Web Console host)

Monitoring agent (PFM - Agent or PFM - RM host)

Monitoring console

Release the health check agent settings [step 1]

Stop Performance Management programs and services [step 2]

Stop Performance Management programs and services [step 3]

Stop Performance Management programs and services [step 4]

Change the monitoring host name of PFM - Manager host [step 5]

Change the definition file and DNS settings as necessary [step 6]

Execute unique procedures for PFM - Agent as necessary [step 7]

Start the Performance Management programs and services [step 8]

Delete service information [step 9]

Restart the Performance Management programs and services [step 10]

Change the connection-target PFM - Manager [step 11]

Start Performance Management programs and services [step 12]

Change the connection-target PFM - Manager [step 13]

Start Performance Management programs and services [step 14]

Re-set up the health check agent [step 15]

Update the alarm settings [step 16]

Update the alarm settings [step 16]

Update the JP1 system event settings [step 17]

Legend: ⬡ : Step associated with a Performance Management program

[ ] : See the indicated step

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To set the display conditions (each step corresponds to the number in the above figure):

1. Clear the setting for the health check agent.

   If you have been using the health check function, use the PFM - Web Console browser to delete the definition for the health check agent. (To delete an agent definition, delete the agent definition from a management folder in the Agents tree, and then delete the linkage with an alarm table.) For details on the procedure for changing the agent definition, see the chapter that describes monitoring agents or the operation monitoring with alarms in the *Job Management Partner 1/ Performance Management User's Guide*.

2. Stop the services on the PFM - Web Console host.

   On the PFM - Web Console host connected to PFM - Manager for which you intend to change the host name, stop all Performance Management programs and services. To stop the services, use the jpcwstop command.

3. Stop the services on the PFM - Agent or PFM - RM host.

   On the PFM - Agent or PFM - RM host connected to PFM - Manager for which you intend to change the host name, stop all Performance Management programs and services. To stop the services, use the `jpcspm stop` command.

4. Stop the services on the PFM - Manager host.

   Stop all Performance Management programs and services on the PFM - Manager host for which you intend to change the host name. To stop the services, use the `jpcspm stop` command.

5. Change the monitoring host name of the PFM - Manager host.

   Execute the `jpcconf host hostmode` command to change the method of acquiring a monitoring host name. The following shows examples of executing this command:

   Changing the method for acquiring a monitoring host name to `hostname`

   ```
   jpcconf host hostmode -mode hostname -d d:\backup -dbconvert
   convert
   ```

   Changing the method for acquiring a monitoring host name to an alias name (`aliasA`)

   ```
   jpcconf host hostmode -mode alias -aliasname aliasA -d
   d:\backup -dbconvert convert
   ```

   For details on the `jpcconf host hostmode` command, see the chapters that describe commands in the manual *Job Management Partner 1/Performance Management Reference*.

Reference note:

> The directory specified for the -d option in the `jpcconf host hostmode` command must have empty disk space that is equal to or greater than the total size of the PFM - Agent and PFM - RM Store databases on the specified host.
>
> For example, if the health check agent, PFM - Agent for Platform, and PFM - Agent for Oracle are on the specified host, empty disk space equal to or greater than the total size of the Store databases of those agents is required. However, you do not need to include the size of Store database for the PMF - Manager Master Store service in the total size.

6. Change the settings of the `jpchosts` file, `hosts` file, and DNS, if necessary.

7. Perform the PFM - Agent-specific procedure, if necessary.

   If PFM - Agent has been installed on the PFM - Manager host, the PFM - Agent-specific procedure might be necessary. The following table describes whether the PFM - Agent-specific procedure is necessary.

Table 6-12: PFM - Necessity of the Agent-specific procedure

Configuration		Necessity and reference
The version of PFM - Agent installed on the PFM - Manager host is 09-00 or later.		Whether the PFM - Agent-specific procedure is necessary depends on PFM - Agent. For details on the PFM - Agent-specific procedure, see the chapters describing the installation and setup in the PFM - Agent manuals.
The version of PFM - Agent installed on the PFM - Manager host is earlier than 09-00.	When the following PFM-Agent has been installed: • PFM - Agent for Enterprise Applications • PFM - Agent for Microsoft SQL Server	The Agent-specific procedure is necessary. For details on the Agent-specific procedure, see *(4) Optional Agent-specific steps for host name changes*.
	For all other cases (including the case that PFM - RM is installed on the PFM - Manager host)	The Agent-specific procedure is not necessary.

   If the PFM - Agent-specific procedure is necessary, perform the procedure indicated in the table above, and then proceed to the following steps.

8. Start the services on the PFM - Manager host.

   Start the Performance Management programs and services on the PFM - Manager host. To start the services, use the `jpcspm start` command.

9. Delete service information on the PFM - Manager host.

   Even though the PFM - Manager host name is changed, the service information of the Performance Management programs with the old host name remains the same. If you changed the PFM - Manager host name, you need to delete the old PFM - Manager service information. For example, if the original PFM - Manager host name is hostA, execute the following command on the PFM - Manager host to delete all the PFM - Manager service information from hostA.

   ```
   jpctool service delete -id "P*" -host hostA
   jpctool service delete -id "0*" -host hostA
   ```

   For details on the jpctool service delete command, see the chapters that describe commands in the manual *Job Management Partner 1/Performance Management Reference*.

10. Restart the services on the PFM - Manager host.

    To refresh information, start the Performance Management programs and services on the PFM - Manager host. To start services, use the jpcspm start command.

11. Change the settings for PFM - Manager for the connection destination on the PFM - Agent or PFM - RM host.

    Change the settings for PFM - Manager for the connection destination on the PFM - Agent or PFM - RM host connected to PFM - Manager for which you have changed the host name. Use the jpcconf mgrhost define command to change the settings for PFM - Manager for the connection destination. For example, if the host name of PFM - Manager for the connection destination is changed to *hostB*, specify and execute the command as follows:

    ```
    jpcconf mgrhost define -host hostB
    ```

    For details on the jpcconf mgrhost define command, see the chapters that describe commands in the manual *Job Management Partner 1/Performance Management Reference*.

12. Start the services on the PFM - Agent or PFM - RM host.

    Start the Performance Management programs and services on the PFM - Agent or PFM - RM host connected to PFM - Manager for which you have changed the host name. To start the services, use the jpcspm start command.

13. Change the settings of PFM - Manager for the connection destination on the PFM - Web Console host.

    Change the settings for PFM - Manager for the connection destination on the PFM

- Web Console host connected to PFM - Manager for which you have changed the host name. Change the information in the Windows initialization file (`config.xml`) to change the settings for PFM - Manager for the connection destination. For details, see *6.4.6(1)(b) Setting PFM - Manager for the connection destination*.

14. Start the services on the PFM - Web Console host.

    Start the Performance Management programs and services on the PFM - Web Console host connected to PFM - Manager for which you have changed the host name. To start the services, use the `jpcwstart` command.

15. Reconfigure the definition for the health check agent.

    If you have been using the health check function, reconfigure the definition (that was cleared in step 1) of the health check agent after changing the host name.

16. Update the alarm settings.

    In the following cases, you must update the alarm settings by using the `jpctool alarm` command of the PFM - Manager host or the monitoring console:

    - The action handler of the PFM - Manager host is specified for the action handler that executes actions.

      Edit the alarm to set `PH1`<*new-pfm-manager-host-name*> for the action handler that executes actions.

    - JP1 events are issued by actions.

      Set the JP1 event settings in the action again.

    For details on how to edit alarms, see the chapter that describes the operation monitoring with alarms in the *Job Management Partner 1/Performance Management User's Guide*.

17. Update the JP1 system event settings.

    If one of the following conditions is met, you need to update the JP1 system event settings by using the PFM - Web Console browser:

    - The previous host name has been specified as the name of the event server to which JP1/Base connects.

    - The previous host name has been specified as the host name of the monitoring console for JP1 system events.

18. Check whether the JP1 system event settings have been properly updated.

    Check the following items after the settings are changed:

    - Collection of performance data

      Make sure that performance data can be collected for a period at least twice

as long as the time period specified as the collection interval (**Collection Interval**).

- Execution of the `jpctool db dump` command

  Make sure that there is no problem in outputting the collected performance data.

- Check of the report definition and alarm definition

  Make sure that there is no problem with the report definition and alarm definition created in the browser.

- Check of the actions

  Make sure that there is no problem in executing the created alarm actions.

(2) Changing the monitoring host name of the PFM - Agent or PFM - RM host

You must perform operations on the following hosts when changing the monitoring host name of the PFM - Manager or PFM - RM host:

- PFM - Manager host
- PFM - Web Console host
- PFM - Agent or PFM - RM host
- Monitoring console

The following figure shows the process flow.

Figure 6-6: Process flow for changing the monitoring host name of the PFM - Agent or PFM - RM host

Legend:

[shape] : Procedure to configure Performance Management

[   ]   : See the indicated step.

To set the display conditions (each step corresponds to the step number in the above figure):

1. Delete the settings for PFM - Agent or PFM - RM.

   Use the PFM - Web Console browser to delete the agent definition for the PFM - Agent or PFM - RM host whose name is to be changed. (To delete an agent definition, delete the agent definition from a management folder in the Agents tree, and then delete the linkage with an alarm table.)

   For details on the procedure for changing the agent definition, see the chapter that describes monitoring agents or the operation monitoring with alarms in the *Job Management Partner 1/Performance Management User's Guide*.

2. Stop the services on the PFM - Agent or PFM - RM host.

   Stop all Performance Management programs and services on the PFM - Agent or PFM - RM host for which you intend to change the host name. To stop the services, use the `jpcspm stop` command.

3. Change the monitoring host name of the PFM - Agent or PFM - RM host.

   Execute the `jpcconf host hostmode` command to change the method of acquiring a monitoring host name. The following shows examples of executing this command:

   Changing the method for acquiring a monitoring host name to `hostname`

   ```
   jpcconf host hostmode -mode hostname -d d:\backup
   -dbconvert convert
   ```

   Changing the method for acquiring a monitoring host name to an alias name (`aliasA`)

   ```
   jpcconf host hostmode -mode alias -aliasname aliasA -d
   d:\backup -dbconvert convert
   ```

   For details on the `jpcconf host hostmode` command, see the chapters that describe commands in the manual *Job Management Partner 1/Performance Management Reference*.

   Reference note:

   The directory specified for the `-d` option in the `jpcconf host hostmode` command must have empty disk space that is equal to or greater than the total size of the PFM - Agent and PFM - RM Store databases on the specified host.

   For example, if PFM - Agent for Platform and PFM - Agent for Oracle are on the specified host, empty disk space equal to or greater than the total size of the Store databases of those agents is required. However, you do not need to include the size of Store database for the PMF - Manager Master Store service in the total size.

4. Change the settings of the `jpchosts` file, `hosts` file, and DNS, if necessary.

5. Perform the PFM - Agent-specific procedure, if necessary.

The following table describes whether the PFM - Agent-specific procedure is necessary.

Table 6-13: PFM - Necessity of the Agent-specific procedure

Configuration		Necessity and reference
The version of PFM - Agent installed on the PFM - Manager host is 09-00 or later.		Whether the PFM - Agent-specific procedure is necessary depends on PFM - Agent. For details on the PFM - Agent-specific procedure, see the chapters describing the installation and setup in the PFM - Agent manuals.
The version of PFM - Agent installed on the PFM - Manager host is earlier than 09-00.	When the following PFM-Agent has been installed: • PFM - Agent for Enterprise Applications • PFM - Agent for Microsoft SQL Server	The Agent-specific procedure is necessary. For details on the Agent-specific procedure, see *(4) Optional Agent-specific steps for host name changes*.
	For all other cases (including the case that PFM - RM is installed on the PFM - Manager host)	The Agent-specific procedure is not necessary.

If the PFM - Agent-specific procedure is necessary, perform the procedure indicated in the table above, and then proceed to the following steps.

6. Start the services on the PFM - Agent or PFM - RM host.

Start Performance Management programs and services on the PFM - Agent or PFM - RM host for which you have changed the host name. To start the services, use the `jpcspm start` command.

7. Delete service information on the PFM - Manager host.

Even though the PFM - Agent or PFM - RM host name is changed, the service information of Performance Management programs to which the old host name is added remains the same. You need to delete the old PFM - Agent or PFM - RM service information on the PFM - Manager host. For example, to delete the information on the Agent Store service of PFM - Agent for Oracle on the PFM - Agent or PFM - RM host (`hostB`), execute the following command on the PFM - Manager host:

```
jpctool service delete -id "OS*" -host hostB
```

8. Restart the services on the PFM - Manager host.

   To refresh information, restart the Performance Management programs and services on the PFM - Manager host. To start the services, use the `jpcspm start` command.

9. Restart the services on the PFM - Web Console host.

   Start the Performance Management programs and services on the PFM - Web Console host connected to PFM - Manager. To start the services, use the `jpcwstart` command.

10. Update the alarm settings.

    In the following cases, you must update the alarm settings by using the `jpctool alarm` command of the PFM - Manager host or the monitoring console:

    - The action handler of the PFM - Agent or PFM - RM host is specified for the action handler that executes actions.

      Edit the alarm to set PH1<*new-pfm-agent-or-pfm-rm-host-name*> for the action handler that executes actions.

    - JP1 events are issued by actions.

      Set the JP1 event settings in the action again.

    For details on how to edit alarms, see the chapter that describes the operation monitoring with alarms in the *Job Management Partner 1/Performance Management User's Guide*.

11. Update the JP1 system event settings.

    If one of the following conditions is met, you need to update the JP1 system event settings by using the PFM - Web Console browser:

    - The previous host name has been specified as the name of the event server to which JP1/Base connects.

    - The previous host name has been specified as the host name of the monitoring console for JP1 system events.

12. Check whether the JP1 system event settings have been properly updated.

    Check the following items after the settings are changed:

    - Collection of performance data

      Make sure that performance data can be collected for a period at least twice as long as the time period specified as the collection interval (**Collection Interval**).

    - Execution of the `jpctool db dump` command

Make sure that there is no problem in outputting the collected performance data.

- Check of the report definition and alarm definition

  Make sure that there is no problem with the report definition and alarm definition created in the browser.

- Check of the actions

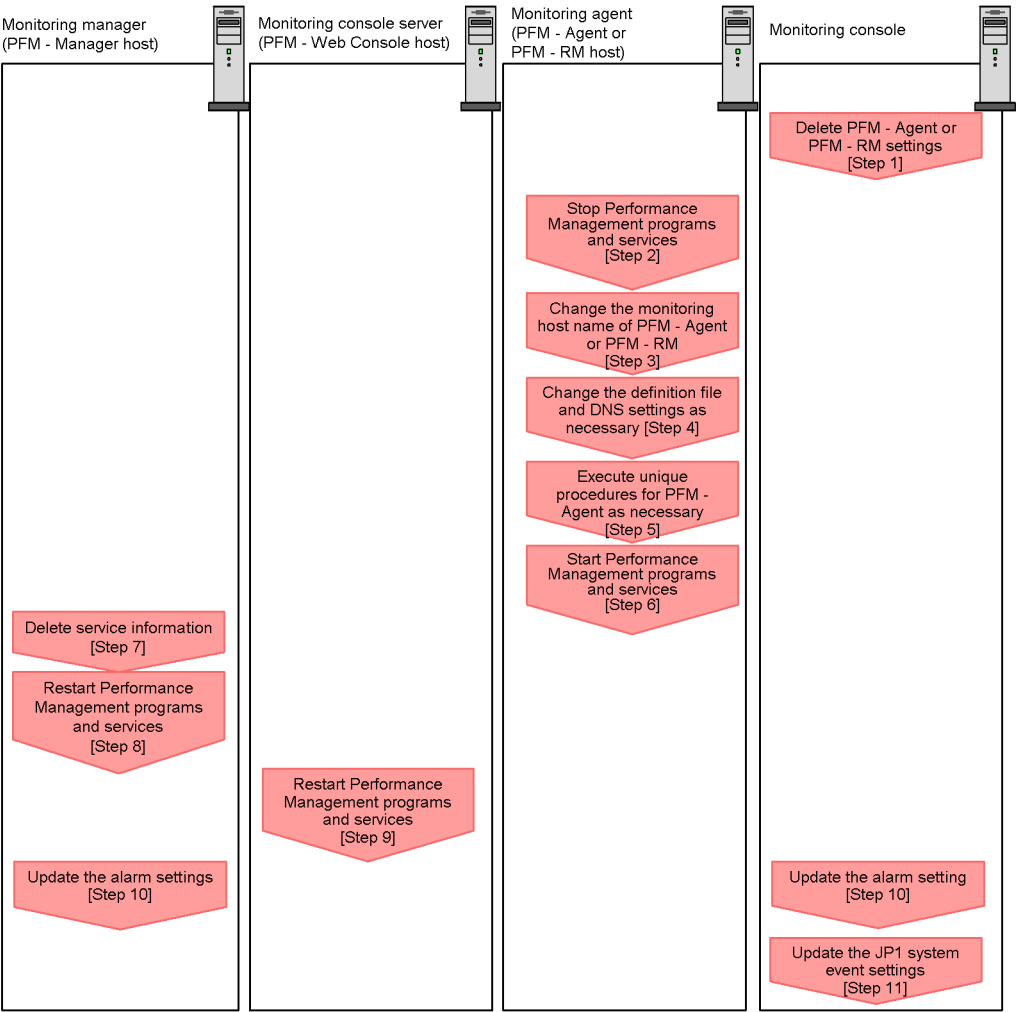 Make sure that there is no problem in executing the created alarm actions.

(3) Notes

Note the following when using the function for setting monitoring-host names:

- If you use an alias name, the IP address of the host must be resolved through the alias name. If you only want to resolve the IP address for the Performance Management system, use the `jpchosts` file to define the IP address resolution. For details on how to edit the `jpchosts` file, see *6.3.1 Changing the network configuration*. To link the Performance Management system with other systems, you must configure the IP address to be resolved by either the `hosts` file or DNS definition.

- If you use the function for setting monitoring-host names, depending on the type of PFM - Agent or PFM - RM, the host name output to the common message log might be different from the actual operating host name.

- Even if you use the function for setting monitoring-host names immediately after installation, you must perform the steps described above in *(1) Changing the monitoring host name of the PFM - Manager host* and *(2) Changing the monitoring host name of the PFM - Agent or PFM - RM host*.

(4) Optional Agent-specific steps for host name changes

This subsection describes the PFM - Agent-specific steps necessary to perform the following operations for each product:

- Changing the monitoring host name of the PFM - Manager host
- Changing the monitoring host name of the PFM - Agent or PFM - RM host

For details on when this procedure is required, see *(1) Changing the monitoring host name of the PFM - Manager host* or *(2) Changing the monitoring host name of the PFM - Agent or PFM - RM host*.

(a) In PFM - Agent for Enterprise Applications

Execute the `jpcconf inst setup` command for all the created instance environments. For example, if an instance environment `o246bci_SD5_00` exists in PFM - Agent for Enterprise Applications, execute the following command:
`jpcconf inst setup -key agtm -inst o246bci_SD5_00`

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The interactive `jpcconf inst setup` command returns a prompt that requests you to enter a value. In this case, enter a new host name in `ASHOST`, leave other items blank, and press the **Enter** key. If you do not enter a value and press the **Enter** key, the setting prior to executing the command is used.

(b) In PFM - Agent for Microsoft SQL Server

Execute the `jpcconf inst setup` command for all the created instance environments. For example, if an instance environment `default` exists in PFM - Agent for Microsoft SQL Server, execute the following command:
`jpcconf inst setup -key agtq -inst default`

The interactive `jpcconf inst setup` command returns a prompt that requests you to enter a value. At the `SQL_HOST` prompt, enter the new host name, and press the **Enter** key at the other prompts. If the **Enter** key is pressed at a prompt without entering a value, the existing value is assumed.

6.3.4 Changing the physical host name after the operation starts

This subsection describes the procedures (performed on the Performance Management system) necessary for changing the physical host name of the PFM - Manager host, PFM - Agent host, or PFM - RM host after the Performance Management system is configured.

First, identify the monitoring host name currently used by the Performance Management system. To identify the monitoring host name used by the Performance Management system, execute the following command. In this command, `hostmode` represents the method used to obtain the monitoring host name, and `hostname` represents the monitoring host name.

```
jpcconf host hostmode -display
```

Example

```
hostmode  : uname

hostname  : hostA
```

The following table describes the relationship between the monitoring host name and the method used to obtain the name.

Table 6-14: Relationship between the monitoring host name and the method to obtain the name

Method for acquiring a monitoring host name	Monitoring host name
uname	Physical host name (displayed by using the `uname -n` command)

Method for acquiring a monitoring host name	Monitoring host name
`hostname`	Physical host name (displayed by using the `hostname` command)
`alias`	Alias name

If the method used to obtain the monitoring host name is set to `alias`, you do not need to perform the steps described here. This is because the monitoring host name of the Performance Management system is the alias name, even if you change the physical host name (the value displayed by either the `uname -n` or `hostname` command) of the machine.

If one of the following conditions applies, you must perform the steps described above in *(1) Changing the monitoring host name of the PFM - Manager host* and *(2) Changing the monitoring host name of the PFM - Agent or PFM - RM host*.

- The method used to obtain the monitoring host name is set to `uname`, and you are going to change the physical host name (the value displayed by the `uname -n` command) of the machine.

- The method used to obtain the monitoring host name is set to `hostname`, and you are going to change the physical host name (the value displayed by the `hostname` command) of the machine.

If you execute the `jpcconf host hostname` command, all existing information, such as the definition and performance information, is inherited. For details on the `jpcconf host hostname` command, see the chapters that describe commands in the manual *Job Management Partner 1/Performance Management Reference*.

Note:

> Do not execute any other commands while executing the `jpcconf host` command. If you execute another command, both the `jpcconf host` command and the executed command might fail.

(1) Changing the PFM - Manager host name

You must perform operations on the following hosts when changing the PFM - Manager host name:

- PFM - Manager host
- PFM - Web Console host
- PFM - Agent or PFM - RM host
- Monitoring console

The following figure shows the process flow.

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Figure 6-7: Process flow for changing the PFM - Manager host name

To set the display conditions (each step corresponds to the step number in the above figure):

1. Clear the setting for the health check agent.

   If you have been using the health check function, use the PFM - Web Console browser to delete the definition for the health check agent. (To delete an agent definition, delete the agent definition from a management folder in the Agents tree, and then delete the linkage with an alarm table.) For details on the procedure for changing the agent definition, see the chapter that describes monitoring agents or the operation monitoring with alarms in the *Job Management Partner 1/ Performance Management User's Guide*.

2. Stop the services on the PFM - Web Console host.

   On the PFM - Web Console host connected to PFM - Manager for which you intend to change the host name, stop all Performance Management programs and services. To stop the services, use the jpcwstop command.

3. Stop the services on the PFM - Agent or PFM - RM host.

   On the PFM - Agent or PFM - RM host connected to PFM - Manager for which you intend to change the host name, stop all Performance Management programs and services. To stop the services, use the `jpcspm stop` command.

4. Stop the services on the PFM - Manager host.

   Stop all Performance Management programs and services on the PFM - Manager host for which you intend to change the host name. To stop the services, use the `jpcspm stop` command.

5. Change the monitoring host name of the PFM - Manager host.

   Execute the `jpcconf host hostname` command to change the monitoring host name.

   To change a physical host name to `hostB`:

   ```
   jpcconf host hostname -newhost hostB -d d:\backup -dbconvert
   convert
   ```

   For details on the `jpcconf host hostname` command, see the chapters that describe commands in the manual *Job Management Partner 1/Performance Management Reference*.

Reference note:

> The directory specified for the `-d` option in the `jpcconf host hostmode` command must have empty disk space that is equal to or greater than the total size of the PFM - Agent and PFM - RM Store databases on the specified host.
>
> For example, if the health check agent, PFM - Agent for Platform, and PFM - Agent for Oracle are on the specified host, empty disk space equal to or greater than the total size of the Store databases of those agents is required. However, you do not need to include the size of Store database for the PMF - Manager Master Store service in the total size.

6. Change the physical host name of the PFM - Manager host.

   Change the physical host name of the PFM - Manager host. Change the settings of the `jpchosts` file, `hosts` file, and DNS, if necessary. When the machine requires restarting, change the settings so that the Performance Management programs and services will not automatically start after the machine is restarted. After the PFM - Manager host operation has finished, return the settings so that the Performance Management programs and services start automatically.

7. Perform the PFM - Agent-specific procedure, if necessary.

   If PFM - Agent has been installed on the PFM - Manager host, the PFM - Agent-specific procedure might be necessary. The following table describes whether the PFM - Agent-specific procedure is necessary.

Table 6-15: PFM - Necessity of the Agent-specific procedure

Configuration		Necessity and reference
The version of PFM - Agent installed on the PFM - Manager host is 09-00 or later.		Whether the PFM - Agent-specific procedure is necessary depends on PFM - Agent. For details on the PFM - Agent-specific procedure, see the chapters describing the installation and setup in the PFM - Agent manuals.
The version of PFM - Agent installed on the PFM - Manager host is earlier than 09-00.	When the following PFM-Agent has been installed: • PFM - Agent for Enterprise Applications • PFM - Agent for Microsoft SQL Server	The PFM - Agent-specific procedure is necessary. For details on the Agent-specific procedure, see *(5) Optional Agent-specific steps for host name changes*.
	For all other cases (including the case that PFM - RM is installed on the PFM - Manager host)	The PFM - Agent-specific procedure is not necessary.

If the PFM - Agent-specific procedure is necessary, perform the procedure indicated in the table above, and then proceed to the following steps.

8. Start the services on the PFM - Manager host.

   Start the Performance Management programs and services on the PFM - Manager host. To start the services, use the `jpcspm start` command.

9. Delete the service information on the PFM - Manager host.

   Even though the PFM - Manager host name is changed, the service information of the Performance Management programs with the old host name remains the same. If you changed the PFM - Manager host name, you need to delete the old PFM - Manager service information. For example, to delete all information on the PFM - Manager host (`hostA`), execute the following command on `hostA`:

   ```
   jpctool service delete -id "P*" -host hostA
   jpctool service delete -id "0*" -host hostA
   ```

   For details on the `jpctool service delete` command, see the chapters that describe commands in the manual *Job Management Partner 1/Performance Management Reference*.

10. Restart the services on the PFM - Manager host.

    To refresh information, restart the Performance Management programs and services on the PFM - Manager host. To start the services, use the `jpcspm start` command.

11. Change the settings for PFM - Manager for the connection destination on the PFM - Agent or PFM - RM host.

    Change the settings for PFM - Manager for the connection destination on the PFM - Agent or PFM - RM host connected to PFM - Manager for which you have changed the host name. Use the `jpcconf mgrhost define` command to change the settings for PFM - Manager for the connection destination. For example, if the host name of PFM - Manager for the connection destination is changed to `hostB`, specify and execute the command as follows:

    ```
    jpcconf mgrhost define -host hostB
    ```

    For details on the `jpcconf mgrhost define` command, see the chapters that describe commands in the manual *Job Management Partner 1/Performance Management Reference*.

12. Start the services on the PFM - Agent or PFM - RM host.

Start the Performance Management programs and services on the PFM - Agent or PFM - RM host connected to PFM - Manager for which you have changed the host name. To start the services, use the `jpcspm start` command.

13. Change the settings of PFM - Manager for the connection destination on the PFM - Web Console host.

    Change the settings for PFM - Manager for the connection destination on the PFM - Web Console host connected to PFM - Manager for which you have changed the host name. Change the information in the Windows initialization file (`config.xml`) to change the settings for PFM - Manager for the connection destination. For details, see *6.4.6(1)(b) Setting PFM - Manager for the connection destination*.

14. Start the services on the PFM - Web Console host.

    Start the Performance Management programs and services on the PFM - Web Console host connected to PFM - Manager for which you have changed the host name. To start the services, use the `jpcwstart` command.

15. Reconfigure the definition for the health check agent.

    If you have been using the health check function, reconfigure the definition (that has been cleared at step 1) of the health check agent after changing the host name.

16. Update the alarm settings.

    In the following cases, you must update the alarm settings by using the `jpctool alarm` command of the PFM - Manager host or the monitoring console:

    - The action handler of the PFM - Manager host is specified for the action handler that executes actions.

      Edit the alarm to set `PH1`*<new-pfm-manager-host-name>* for the action handler that executes actions.

    - JP1 events are issued by actions.

      Set the JP1 event settings in the action again.

    For details on how to edit alarms, see the chapter that describes the operation monitoring with alarms in the *Job Management Partner 1/Performance Management User's Guide*.

17. Update the JP1 system event settings.

    If one of the following conditions is met, you need to update the JP1 system event settings by using the PFM - Web Console browser:

    - The previous host name has been specified as the name of the event server to which JP1/Base connects.

    - The previous host name has been specified as the host name of the

monitoring console for JP1 system events.

18. Check whether the JP1 system event settings have been properly updated.

    Check the following items after changed the settings:

    - Collection of performance data

      Make sure that performance data can be collected for a period at least twice as long as the time period specified as the collection interval (**Collection Interval**).

    - Execution of the `jpctool db dump` command

      Make sure that there is no problem in outputting the collected performance data.

    - Check of the report definition and alarm definition

      Make sure that there is no problem with the report definition and alarm definition created in the browser.

    - Check of the actions

      Make sure that there is no problem in executing the created alarm actions.

19. Log on to NNM again, if now linking with Network Node Manager (NNM) for operation monitoring.

(2) Changing the PFM - Agent or PFM - RM host name

You must perform operations on the following hosts when changing the PFM - Agent or PFM - RM host name:

- PFM - Manager host
- PFM - Web Console host
- PFM - Agent or PFM - RM host
- Monitoring console

The following figure shows the process flow.

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Figure 6-8: Process flow for changing the monitoring host name of the PFM - Agent or PFM - RM host
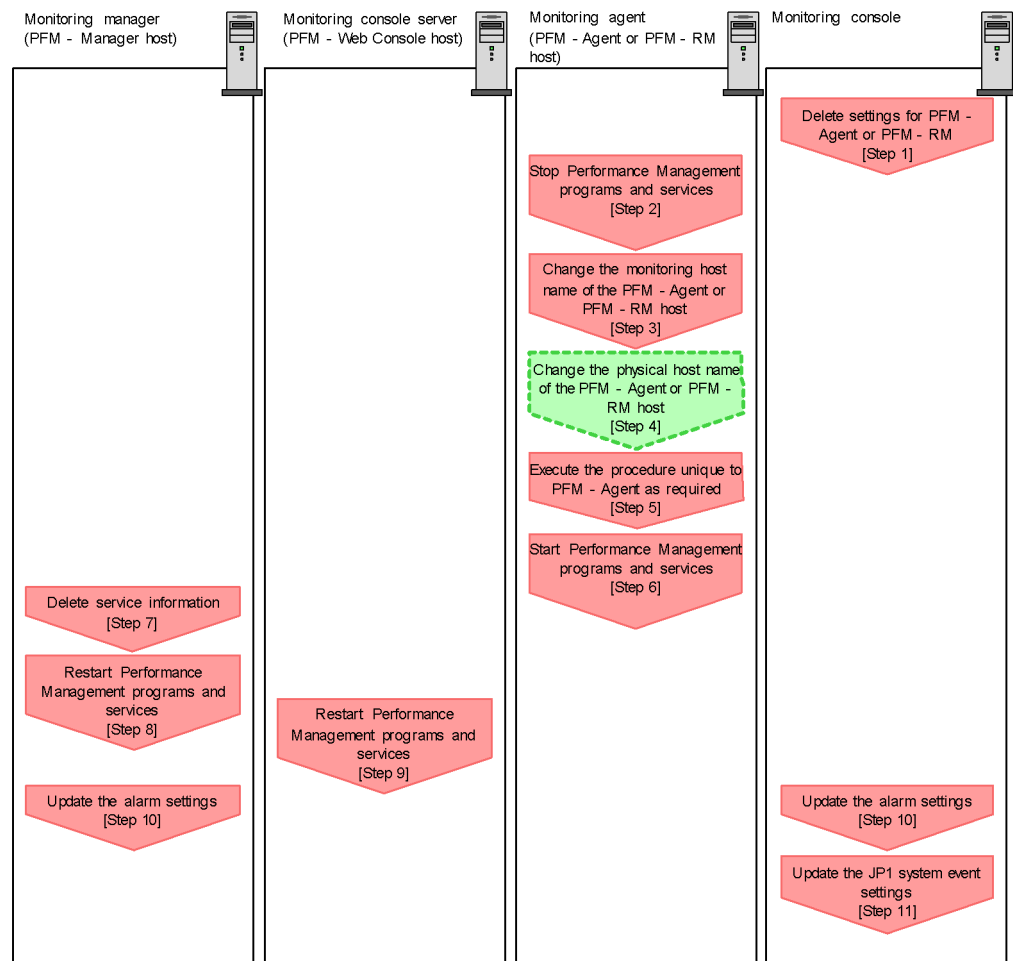
Legend:

⬡ (pink)	: Step associated with a Performance Management program
⬡ (green dashed)	: Step where host name is changed
[ ]	: See the indicated step

To set the display conditions (Each step corresponds to the step number in the figure above):

1. Delete the settings for PFM - Agent or PFM - RM.

   Use your PFM - Web Console browser to delete the agent definitions from the

PFM - Agent or PFM - RM host whose host name is to be changed (by deleting the definitions from the management folder in the Agents tree and disassociating any alarm tables from them).

For details on the procedure for changing the agent definition, see the chapter that describes monitoring agents or the operation monitoring with alarms in the *Job Management Partner 1/Performance Management User's Guide*.

2.   Stop the services on the PFM - Agent or PFM - RM host.

Stop all Performance Management programs and services on the PFM - Agent or PFM - RM host for which you intend to change the host name. To stop services, use the `jpcspm stop` command.

3.   Change the monitoring host name of the PFM - Agent or PFM - RM host.

Execute the `jpcconf host hostname` command to change the monitoring host name.

To change a physical host name to `hostB`:

```
jpcconf host hostname -newhost hostB -d d:\backup -dbconvert
convert
```

For details on the `jpcconf host hostname` command, see the chapters that describe commands in the manual *Job Management Partner 1/Performance Management Reference*.

Reference note:

The directory specified for the `-d` option in the `jpcconf host hostmode` command must have empty disk space that is equal to or greater than the total size of the PFM - Agent and PFM - RM Store databases on the specified host.

For example, if the health check agent, PFM - Agent for Platform, and PFM - Agent for Oracle are on the specified host, empty disk space equal to or greater than the total size of the Store databases of those agents is required. However, you do not need to include the size of Store database for the PMF - Manager Master Store service in the total size.

4.   Change the physical host name of the PFM - Agent or PFM - RM host.

Change the physical host name of the PFM - Manager host. Change the settings of the `jpchosts` file, `hosts` file, and DNS, if necessary. When the machine requires restarting, change the settings so that the Performance Management programs and services will not automatically start after the machine is restarted. After the PFM - Manager host operation has finished, return the settings so that the Performance Management programs and services start automatically.

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5. Perform the PFM - Agent-specific procedure, if necessary.

   The following table describes whether the PFM - Agent-specific procedure is necessary.

   Table 6-16: PFM - Necessity of the Agent-specific procedure

Configuration		Necessity and reference
The version of PFM - Agent installed on the PFM - Manager host is 09-00 or later.		Whether the PFM - Agent-specific procedure is necessary depends on PFM - Agent. For details on the PFM - Agent-specific procedure, see the chapters describing the installation and setup in the PFM - Agent manuals.
The version of PFM - Agent installed on the PFM - Manager host is earlier than 09-00.	When the following PFM-Agent has been installed: • PFM - Agent for Enterprise Applications • PFM - Agent for Microsoft SQL Server	The PFM - Agent-specific procedure is necessary. For details on the Agent-specific procedure, see *(5) Optional Agent-specific steps for host name changes*.
	For all other cases (including the case that PFM - RM is installed on the PFM - Manager host)	The PFM - Agent-specific procedure is not necessary.

   If the PFM - Agent-specific procedure is necessary, perform the procedure indicated in the table above, and then proceed to the following steps.

6. Start the services on the PFM - Agent or PFM - RM host.

   Start Performance Management programs and services on the PFM - Agent or PFM - RM host for which you have changed the host name. To start the services, use the `jpcspm start` command.

7. Delete service information on the PFM - Manager host.

   Even though the PFM - Agent or PFM - RM host name is changed, the service information of Performance Management programs to which the old host name is added, remains the same. You need to delete the old PFM - Agent or PFM - RM service information on the PFM - Manager host. For example, to delete the information on the Agent Store service of PFM - Agent for Oracle on the PFM - Agent or PFM - RM host (`hostB`), execute the following command on the PFM - Manager host:

   ```
   jpctool service delete -id "OS*" -host hostB
   ```

8. Restart the services on the PFM - Manager host.

   Start the Performance Management programs and services on the PFM - Manager host. To start the services, use the `jpcspm start` command.

9. Restart the services on the PFM - Web Console host.

   Start the Performance Management programs and services on the PFM - Web Console host connected to PFM - Manager. To start the services, use the `jpcwstart` command.

10. Update the alarm settings.

    In the following cases, you must update the alarm settings by using the `jpctool alarm` command of the PFM - Manager host or the monitoring console:

    - The action handler of the PFM - Agent or PFM - RM host is specified for the action handler that executes actions.

      Edit the alarm to set `PH1`<*new-pfm-agent-or-pfm-rm-host-name*> for the action handler that executes actions.

    - JP1 events are issued by actions.

      Set the JP1 event settings in the action again.

    For details on how to edit alarms, see the chapter that describes the operation monitoring with alarms in the *Job Management Partner 1/Performance Management User's Guide*.

11. Update the JP1 system event settings.

    If one of the following conditions is met, you need to update the JP1 system event settings by using the PFM - Web Console browser:

    - The previous host name has been specified as the name of the event server to which JP1/Base connects.

    - The previous host name has been specified as the host name of the monitoring console for JP1 system events.

12. Check whether the JP1 system event settings have been properly updated.

    Check the following items the settings are changed:

    - Collection of performance data

      Make sure that performance data can be collected for a period at least twice as long as the time period specified as the collection interval (**Collection Interval**).

    - Execution of the `jpctool db dump` command

      Make sure that there is no problem in outputting the collected performance

data.

- Check of the report definition and alarm definition

  Make sure that there is no problem with the report definition and alarm definition created in the browser.

- Check of the actions

  Make sure that there is no problem in executing the created alarm actions.

(3) Changing the monitored host name of PFM - RM

This subsection describes the procedure for changing the monitored host name of PFM - RM.

(a) If you do not change the monitored host name

You must change the monitored host name of the remote agent that corresponds to the monitoring target. Assuming that you change the monitored host name of the remote agent (instance name = `inst1`) from `hostA` to `hostB`, the commands are executed as follows:

To change the monitored host name of the remote agent that corresponds to the monitoring target:

1. Execute the `jpcconf target setup -key RMPlatform -inst inst1 -target hostA` command.

2. Enter `Target Host:hostB`.

   Follow the instructions to enter the setting items for the monitored host. When you are finished, press the **Enter** key to confirm the setting.

The following figure shows an example of changing the monitored host name of PFM - RM.

Figure 6-9: Example of changing the monitored host name for PFM - RM (if you do not change the monitored host name)

(b) If you change the monitored host name

You must re-create the remote agent that corresponds to the monitoring target.

To re-create the remote agent:

1. Execute the `jpcconf target unsetup` command to delete the remote agent that corresponds to the monitoring target.

2. Execute the `jpcconf target setup` command to add the remote agent with a new monitored host name.

Note that the performance data for the monitored host cannot be inherited.

The following figure shows an example of changing the monitored host name of PFM - RM.

Figure 6-10: Example of changing the monitored host name for PFM - RM (if you change the monitored host name)

For details on the `jpcconf target setup` and `jpcconf target unsetup` commands, see the chapter explaining the commands in the manual *Job Management Partner 1/Performance Management Reference*.

(4) Changing the PFM - Web Console host name

To change the PFM - Web Console host name:

1. Stop the services on the PFM - Web Console host.

   On the PFM - Web Console host connected to PFM - Manager for which you intend to change the host name, stop all Performance Management programs and services. To stop the services, use the jpcwstop command.

2. If you have changed the host name for communications, change the host name of the PFM - Web Console.

   You need to perform this step if the IP address used by the PFM - Web Console host cannot communicate with the PFM - Manager host, and if the host name of PFM - Web Console has been specified in the initialization file (`config.xml`).

   For details on how to change host names, see the sections that describe settings of host names used for communications between PFM - Manager and PFM - Web Console in the appendix of the manual *Job Management Partner 1/Performance Management Reference*.

3. If the integrated management product (JP1/IM) is linked for operation monitoring, change the host name.

   Depending on the configured event, change the applicable host name to the new host name.

   - If a JP1 user event is used

     Change the host name in the definition files for the tool launcher and for opening monitor windows.

   - If a JP1 system event is used

     Change the **Monitoring Console Host** property setting of **JP1 Event Send Host** to the new host name.

   For details on an integrated management product (JP1/IM), see the chapter that describes the linkage with the integrated management product JP1/IM for operation monitoring in the *Job Management Partner 1/Performance Management User's Guide*.

4. If the network management product (NNM) is linked for operation monitoring, change the host name.

   Change the host name of the PFM - Web Console in `jpcnnm.ini` file to the new host name.

   For details on a network management product (NNM), see the chapter that describes the linkage with Network Node Manager (NNM) for operation monitoring in the *Job Management Partner 1/Performance Management User's Guide*.

5. Change the PFM - Web Console physical host name.

   Change the PFM - Web Console physical host name. When the machine requires restarting, change the settings so that the Performance Management programs and services will not automatically start after the machine is restarted. After the PFM - Web Console host operation has finished, return the settings so that the Performance Management programs and services start automatically.

6. Start the services on the PFM - Web Console host.

   Start the Performance Management programs and services on the PFM - Web Console host connected to PFM - Manager for which you have changed the host name. To start the services, use the `jpcwstart` command.

7. Restart the integrated management product (JP1/IM), if linking with JP1/IM.

(5) Optional Agent-specific steps for host name changes

This subsection describes the PFM - Agent-specific steps necessary to perform the following operations for each product:

- Changing the PFM - Manager host name
- Changing the PFM - Agent or PFM - RM host name

For details on the situation which needs this procedure, see *(1) Changing the PFM - Manager host name* or *(2) Changing the PFM - Agent or PFM - RM host name*.

(a) In PFM - Agent for Enterprise Applications

Execute the `jpcconf inst setup` command for all the created instance environments. For example, if an instance environment `o246bci_SD5_00` exists in PFM - Agent for Enterprise Applications, execute the following command:
`jpcconf inst setup -key agtm -inst o246bci_SD5_00`

The interactive `jpcconf inst setup` command returns a prompt that requests you to enter a value. In this case, enter a new host name in `ASHOST`, leave other items blank, and press the **Enter** key. If you do not enter a value and press the **Enter** key, the setting prior to executing the command is used.

(b) In PFM - Agent for Microsoft SQL Server

Execute the `jpcconf inst setup` command for all the created instance environments. For example, if an instance environment `default` exists in PFM - Agent for Microsoft SQL Server, execute the following command:
`jpcconf inst setup -key agtq -inst default`

The interactive `jpcconf inst setup` command returns a prompt that requests you to enter a value. In this case, enter a new host name in `SQL_HOST`, leave other items blank, and press the **Enter** key. If you do not enter a value and press the **Enter** key, the setting prior to executing the command is used.

6.4 Changing the Performance Management operation method

You might need to change the operation method for the Performance Management system due to changes in the system administrator of the operation monitoring system, or changes to the operational procedure for the collected operation monitoring data. This section describes the procedure to change the Performance Management operation method.

6.4.1 Setting the size of the log file for the common message log

Common message logs are output in PFM - Manager, PFM - Base, PFM - Agent, and PFM - RM. The common message log file uses by default, two 2,048-KB files. This setting is required only when you wish to change the common message log file size.

Directly edit the content of the jpccomm.ini file to change the file size. The jpccomm.ini file is stored in the following locations:

On physical hosts:

In Windows:

installation-folder

In UNIX:

/opt/jp1pc/

On logical hosts:

In Windows:

environment-directory\jp1pc

In UNIX:

environment-directory/jp1pc

The following table lists and describes the label name to be edited and the range of values that can be set in the jpccomm.ini file.

Table 6-17: Settings for the file size of the common message log ("Common Section" section in jpccomm.ini)

Setting item	Label name	Available value	Default value
Size of the file that stores the common message log (Kilobytes)	Common Msglog Size	4 - 4,096	2,048

To change the size of the common message log file:

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1. Stop Performance Management programs and services.

   Stop all Performance Management programs and services that are running.

2. Use a text editor or a similar tool to open the `jpccomm.ini` file.

3. Change the size of the common message log file.

   Correct the shaded parts indicated below:

   ```
                    :
   [Common Section]

   Common Msglog Size=2048

                    :
   ```

   Notes:

   - Do not enter spaces at the beginning of the coding, or before and after an equals sign (=).

   - The `jpccomm.ini` file contains the definition information besides the common message log file size. Change values only for `Common Msglog Size` in the `Common Section` section. Performance Management might not operate correctly if you change values other than the required items.

4. Save and then close the `jpccomm.ini` file.

Notes:

- You need to make the settings the same for the common message log file in all Performance Management programs running on the same host.

- To return the settings of the `jpccomm.ini` file to the default status at installation, copy the `jpccomm.ini.model` file located in the installation directory of the `jpccomm.ini` file into the `jpccomm.ini` file.

6.4.2 Changing the storage location of event data

The event data that occurs in PFM - Agent or PFM - RM is managed by the Store database of the Master Store service that PFM - Manager provides.

To change the following storage folders for the event data managed by the Store database, directly edit the contents of the `jpcsto.ini` file:

- Installation directory

- Backup directory

- Export directory

The `jpcsto.ini` file is stored in the following locations:

On physical hosts:

> In Windows:
>
> > *installation-folder*\mgr\store\jpcsto.ini
>
> In UNIX:
>
> > /opt/jp1pc/mgr/store/jpcsto.ini

On logical hosts:

> In Windows:
>
> > *environment-directory*\jp1pc\mgr\store\jpcsto.ini
>
> In UNIX:
>
> > *environment-directory*/jp1pc/mgr/store/jpcsto.ini

(1) Items to set in the jpcsto.ini file

The following table lists and describes the label name to be edited and the range of values that can be set in the jpcsto.ini file.

Table 6-18: Settings for the storage location of the event data (Data Section section in jpcsto.ini)

Setting item	Label name	Available value[1]	Default value
Directory in which the event data is created	Store Dir[2]	Absolute path name 1 - 127 bytes in length	On physical hosts: • In Windows: *installation-folder*\mgr\store • In UNIX: /opt/jp1pc/mgr/store On logical hosts: • In Windows: *environment-directory*\jp1pc\mgr\store • In UNIX: *environment-directory*/jp1pc/mgr/store

Setting item	Label name	Available value[1]	Default value
Backup directory for the event data	`Backup Dir`[2]	Absolute path name 1 - 127 bytes in length	On physical hosts: • In Windows: *installation-folder*\ `mgr\store\backup` • In UNIX: `/opt/jp1pc/mgr/store/backup` On logical hosts: • In Windows: *environment-directory*\ `jp1pc\mgr\store\backup` • In UNIX: *environment-directory*/ `jp1pc/mgr/store/backup`
Maximum number of generations of event data to back up	`Backup Save`	1 - 9	5
Export directory for the event data	`Dump Dir`[2]	Absolute path name 1 - 127 bytes in length	On physical hosts: • In Windows: *installation-folder*\ `mgr\store\dump` • In UNIX: `/opt/jp1pc/mgr/store/dump` On logical hosts: • In Windows: *environment-directory*\ `jp1pc\mgr\store\dump` • In UNIX: *environment-directory*/ `jp1pc/mgr/store/dump`

#1

- Specify absolute path names for all directory names.
- You can use alphanumeric characters, symbols, and spaces except for the following:

  `;  ,  *  ?  '  "  <  >  |`

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- When invalid values are specified, the Master Store service cannot be started.

#2

You cannot specify a duplicated directory for `Store Dir`, `Backup Dir`, and `Dump Dir`.

(2) Procedure to edit the jpcsto.ini file

To edit the `jpcsto.ini` file:

1. Stop the Master Store service of PFM - Manager.

2. Use a text editor or a similar tool to open the `jpcsto.ini` file.

3. Change the storage locations and other information related to event data.

   As needed, correct the part indicated by shading in the following figure.

```
          :
[Data Section]

Store Dir=.

Backup Dir=.\backup

Backup Save=5

Dump Dir=.\dump

          :
```

Notes:

- Do not enter spaces at the beginning of the coding, or before and after the equals sign (=).

- A period (.) in the value of each label represents the default storage directory of the Store database of the Master Store service. The default storage directory is as follows:

On physical hosts:

    In Windows:

     installation-folder\mgr\store

    In UNIX:

    /opt/jp1pc/mgr/store

On logical hosts:

    In Windows:

environment-directory\jp1pc\mgr\store

In UNIX:

environment-directory/jp1pc/mgr/store

To store the Store database in a different location, specify the relative path from the default folder, or the absolute path to the location.

- Create a directory to be specified beforehand to change the installation location of the Store database.

- The `jpcsto.ini` file contains the definition information in addition to the information on the database installation directory. Change values only in the `Data Section` section. Performance Management might not operate correctly if you change values other than the required items.

4. Save and then close the `jpcsto.ini` file.

5. Start Performance Management programs and services.

6.4.3 Settings for disconnecting communication lines

Performance Management does not disconnect the communication line for 70 seconds after the communication with the connection destination ends. Therefore, keep this setting in mind when you use Performance Management in an environment that charges by connection time.

To edit the `jpccomm.ini` file in order to disconnect the line immediately after the communication ends:

1. Stop Performance Management programs and services.

    Stop all Performance Management programs and services that are running.

2. Use a text editor or a similar tool to open the `jpccomm.ini` file.

3. Change the connection mode of the communication line.

    Change the following label value in all sections in the `jpccomm.ini` file.

    ```
    NS Keepalive Mode=0
    ```

4. Save and then close the `jpccomm.ini` file.

5. Start Performance Management programs and services.

Note:

The line is always connected between PFM - Web Console and PFM - Manager in order to periodically communicate with each other. For that reason, Hitachi does not recommend that you use networks such as a WAN environment for

communications between hosts because the environment usage fees are based on the communication time or the volume.

6.4.4 Configuring the functionality for binding multiple alarm tables

You must be using version 09-00 or later of PFM - Manager and PFM - Web Console to use the functionality for binding multiple alarm tables. While the functionality for binding multiple alarm tables is enabled, you cannot connect from PFM - Web Console whose version is earlier than 09-00.

The following table describes the configuration of the monitoring agents that can bind multiple alarm tables. In order to use a monitoring agent to bind multiple alarm tables, the configuration in the table must be marked as Y. Even if a monitoring agent with an N marked configuration exists in the system, you can still use the functionality for binding multiple alarm tables. However, you cannot use the function to bind multiple alarm tables with the applicable monitoring agent. If you use a monitoring agent with an N marked configuration to bind multiple alarm tables, evaluation results cannot be guaranteed for the alarm of the applicable monitoring agent.

PFM - Agent version	PFM - Manager or PFM - Base version on a same host		
	09-00 or later	Earlier than 09-00	None
08-00 or later	Y	N	--
Before 08-00	N	N	N

Legend:

Y: Multiple alarm tables can be bound.

N: Multiple alarm tables cannot be bound.

--: Unavailable

To enable or disable the functionality for binding multiple alarm tables, directly edit the contents of the `jpccomm.ini` file on the PFM - Manager host. The `jpccomm.ini` file is stored in the following locations:

On physical hosts:

In Windows:

Installation-folder

In UNIX:

`/opt/jp1pc/`

On logical hosts:

In Windows:

environment-directory\jp1pc

In UNIX:

environment-directory\jp1pc

(1) Enabling the functionality for binding multiple alarm tables

To enable the functionality for binding multiple alarm tables:

1. Stop Performance Management programs and services.

   Stop all Performance Management programs and services that are running by using the jpcspm stop command. If the programs are running on a cluster system, stop them from the cluster software.

2. Use a text editor or a similar tool to open the jpccomm.ini file.

3. Enable the functionality for binding multiple alarm tables.

   Change the following label value in the [Common Section] section in the jpccomm.ini file.

   ```
   Multiple Alarm Table Bind=1
   ```

4. Save and then close the jpccomm.ini file.

5. Start Performance Management programs and services by using the jpcspm start command.

   If the programs are running on a cluster system, start them from the cluster software.

6. Restart the PFM - Web Console.

(2) Disabling the functionality for binding multiple alarm tables

To disable the functionality for binding multiple alarm tables:

1. Stop Performance Management programs and services.

   Stop all Performance Management programs and services that are running by using the jpcspm stop command. If the programs are running on a cluster system, stop them from the cluster software.

2. Use a text editor or a similar tool to open the jpccomm.ini file.

3. Disable the functionality for binding multiple alarm tables.

   Change the following label value in the [Common Section] section in the jpccomm.ini file.

   ```
   Multiple Alarm Table Bind=0
   ```

4. Save and then close the `jpccomm.ini` file.

5. Start Performance Management programs and services by using the `jpcspm start` command.

   If the programs are running on a cluster system, start them from the cluster software.

6. Restart the PFM - Web Console.

Note:

If you disable the functionality for binding multiple alarm tables when multiple alarm tables are bound with PFM - Agent or PFM - RM, the message `KAVE00317-W` is output the next time you start the Master Manager service. In addition, all the alarm tables bound with the applicable PFM - Agent or PFM - RM are unbound. As a result, it might take a long time to start Master Manager after the function is disabled. For the operating PFM - Agent or PFM - RM, the multiple alarm tables stay bound until the applicable PFM - Agent or PFM - RM is restarted. If you disabled the functionality for binding multiple alarm tables, in order for the binding status update to take effect, you must restart the PFM - Agent or PFM - RM that outputs the `KAVE00317-W` message.

6.4.5 Changing IP address settings

This subsection describes the procedures to change IP addresses during Performance Management operation.

(1) Changing the IP address of the PFM - Manager host

To change the IP address of the PFM - Manager host:

1. Log out from PFM - Web Console.

   Log out from all PFM - Web Console hosts that connect to the PFM - Manager host for which you intend to change the IP address.

2. Stop all Performance Management services on the PFM - Manager host.

   Stop all Performance Management programs and services on the PFM - Manager host for which you intend to change the IP address. To stop services, use the `jpcspm stop` command. If the programs are running on a cluster system, stop them from the cluster software.

3. Change the IP address of the PFM - Manager host.

   Change the IP address of the monitoring manager host where PFM - Manager is installed.

4. Configure the network.

Configure the network to allow TCP communication by all PFM - Agent, PFM - RM, PFM - Base, PFM - Web Console and PFM - Manager hosts to the host whose IP address you changed.

5. Restart the Performance Management services on the PFM - Manager host.

   Start the Performance Management programs and services on the PFM - Manager host. If the programs are running on a cluster system, stop them from the cluster software.

6. Log on to PFM - Web Console.

   Log on to PFM - Web Console.

(2) Changing the IP address of the PFM - Web Console host

To change the IP address of the PFM - Web Console host:

1. Stop all Performance Management services on the PFM - Web Console host.

   Stop all Performance Management programs and services on the PFM - Web Console host for which you intend to change the IP address. Use the `jpcwstop` command to stop services. If running the programs on a cluster system, stop them from the cluster software.

2. Change the IP address of the PFM - Web Console host.

   Change the IP address of the monitoring console host where PFM - Web Console is installed.

3. Configure the network.

   Configure the network to allow TCP communication from the connection-target PFM - Manager to the host whose IP address you changed, and to allow HTTP communication from the monitoring console to the host whose IP address you changed.

4. Restart the Performance Management services on the PFM - Web Console host.

   Start the Performance Management programs and services on the PFM - Web Console host. If the programs are running on a cluster system, stop them from the cluster software.

5. Log on to PFM - Web Console

   Connect to PFM - Web Console from the monitoring console, using the new IP address (or host name) in the URL.

(3) Changing the IP address of the PFM - Base host

To change the IP address of the PFM - Base host:

1. Stop all Performance Management services on the PFM - Base host.

Stop all Performance Management programs and services on the PFM - Base host for which you intend to change the IP address. Use the `jpcspm stop` command to stop services. If the programs are running on a cluster system, stop them from the cluster software.

2. Change the IP address of the PFM - Base host.

    Change the IP address of the host where PFM - Base is installed.

3. Configure the network.

    Configure the network to allow TCP communication by all PFM - Agent, PFM - RM, PFM - Base, PFM - Web Console, and PFM - Manager hosts to the host whose IP address you changed.

4. Restart the Performance Management services on the PFM - Base host.

    Start the Performance Management programs and services on the host where PFM - Base is installed. If the programs are running on a cluster system, stop them from the cluster software.

(4) Changing the IP address of the PFM - Agent or PFM - RM host

To change the IP address of the PFM - Agent or PFM - RM host:

1. Stop all Performance Management services on the PFM - Agent or PFM - RM host.

    Stop all Performance Management programs and services on the PFM - Agent or PFM - RM host for which you intend to change the IP address. To stop services, use the `jpcspm stop` command. If the programs are running on a cluster system, stop them from the cluster software.

2. Change the IP address of the PFM - Agent or PFM - RM host.

    Change the IP address of the host where PFM - Agent or PFM - RM is installed.

3. Configure the network.

    Configure the network to allow TCP communication by all PFM - Agent, PFM - RM, PFM - Base, PFM - Web Console, and PFM - Manager hosts to the host whose IP address you changed.

4. Restart the Performance Management services on the PFM - Agent or PFM - RM host.

    Start the Performance Management programs and services on the host where PFM - Agent or PFM - RM is installed. If the programs are running on a cluster system, start them from the cluster software.

6.4.6 Changing PFM - Web Console settings

Use the initialization file (`config.xml`) to configure the environment necessary to

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operate PFM - Web Console.

The initialization file (config.xml) is stored in /opt/jp1pc/conf/.

Note:

The initialization file (config.xml) is loaded when a PFM - Web Console service starts. Restart the PFM - Web Console service to enable the settings you changed in the initialization file. Change only the required information. PFM - Web Console might not operate correctly if you change locations other than the specified ones.

The items to set in the initialization file are described below.

(1) Items to set in initialization file (config.xml)

You can set the following items in the config.xml file.

(a) File output settings

The following table lists and describes the config.xml file items used to change the settings related to file output in PFM - Web Console.

Table 6-19: File output settings

Content	Item	Available value	Default value
Output directory for log files	logDir	Directory to which PFM - Web Console outputs log files	/opt/jp1pc/ log
Number of log files output by PFM - Web Console	logFileNumber	1 - 16	10[#]
Size of each log file	logFileSize	1 - 100	4[#]
Number of days to keep log files	logFileRetentio n	1 - 30	30[#]
Line terminal code for output in files	lineSeparator	• CRLF: Linefeed code used in Windows • LF: Linefeed code used in UNIX	CRLF[#]
Character code for output in files	characterCode	• US-ASCII • windows-1252 • ISO-8859-1 • UTF-8 • UTF-16 • UTF-16BE • UTF-16LE	US-ASCII[#]

Content	Item	Available value	Default value
File name to output	csvFileName	• Numerals from 0 to 9 • Periods (.) • Underscores (_) • Spaces • Alphabetic characters A-Z, a-z You can specify a maximum of 100 characters, although you cannot specify a name that consists only of spaces and periods.	Export.csv[#]

\#

The default value is set if you specify an invalid value.

(b) Setting PFM - Manager for the connection destination

The following table lists and describes the config.xml file items used to change the settings related to the connection-target PFM - Manager for PFM - Web Console.

Table 6-20: Settings for PFM - Manager for the connection destination

Content	Item	Available value	Default value
Host name or IP address of the connection-target PFM - Manager	host	For host names: - Numerals from 0 to 9 - Periods (.) - Hyphens (-) - Alphabetic characters A-Z, a-z You can use 1 - 32 characters. For IP addresses: - 0.0.0.0 - 255.255.255.255	Localhost[#]
Port number of the View Server service on the connection-target PFM - Manager	port	1,024 - 65,535	22,286[#]

\#

The default value is set if you specify an invalid value or omit a required value.

Note:

To avoid duplicating the port numbers used by other processes, do not specify the

following port numbers:

- Port numbers assigned by the OS (referred to as dynamic or ephemeral ports)

(c) Data acquisition and display settings

The following table lists and describes the config.xml file setting items used to change settings related to data acquisition and display for PFM - Web Console.

Table 6-21: Data acquisition and display settings

Content	Item	Available value	Default value
Maximum number of records obtained from PFM - Manager	maxFetchCount (under the `<vsa>` tag)	1 - 2,147,483,647 (Integer)	1440
Number of records displayed per page in tables in the report window	displayCountPerPage	1 - 2,147,483,647 (Integer)	20
Maximum number of records saved in the cache for one real time report	maxRealtimeCache	1 - 360 (integer)	30
Interval for automatic update	updateInterval	10 - 3,600	60
Specifiable range for conditional expression definitions that use ulong data types	condExpValueUlongExtension	• Specified value: Specifiable range of ulong data type • true: 0 - 4,294,967,295 • false: 0 - 2,147,483,648	false
Maximum number of characters displayable as a label on a report graph[#]	maxSeriesLabelLength	1 - 1,024	30
Whether block transfer mode is enabled	blockTransferMode	true (enabled) false (disabled)	true
Maximum number of reports displayable by tiling	maxTileReports	1 - 256	50

Content	Item	Available value	Default value
Interval time limit for an automatic update request of a real-time report[#2]	realtimeCacheInterval[#3]	60,000 to 3600000 (Milliseconds)	600,000
Installation location of the repository[#3] for saving the definition information of the bookmark function	bookmarkRepository[#3]	Use an absolute pathname. Maximum path length: 150 characters A new folder is created when a Web Console service starts if the specified folder does not exist.	/opt/jp1pc/ bookmarks
Availability of operation for defining reports, or for creating, editing, deleting, importing, or exporting bookmarks by ordinary users	editReportByOrdinaryUser	on (available) off (unavailable)	on
Maximum number of server operation statuses to be displayed in the summary format (when using the User Agents display format)	maxDisplayServer (under the <user-agents> tag)	1 - 100	5
Maximum number of server operation statuses to be displayed in the summary format (when using the Products display format)	maxDisplayServer (under the <products> tag)	1 - 100	5

Content	Item	Available value	Default value
Maximum number of agent operation statuses to be displayed in the summary and **User tree view** display format (when using the `User Agents` display format)	maxDisplayAgents User (under the `<user-agents>` tag)	1 - 100	5
Maximum number of agent operation statuses to be displayed in the summary and **Product type view** display format (when using the `User Agents` display format)	maxDisplayAgents Products (under the `<user-agents>` tag)	1 - 100	5
Maximum number of agent operation statuses to be displayed in the summary format (when using the `Products` display format)	maxDisplayAgents Products (under the `<products>` tag)	1 - 100	5
Maximum number of agent alarm statuses to be displayed in the summary format (when using the `User Agents` display format)	maxDisplayAlarm (under the `<user-agents>` tag)	1 - 100	5
Maximum number of agent alarm statuses to be displayed in the summary format (when using the `Products` display format)	maxDisplayAlarm (under the `<products>` tag)	1 - 100	5
Maximum number of events to be displayed in the summary format	maxEvents	1 - 999	256
Maximum number of searchable fields	searchLimit	1 - 100	50

Content	Item	Available value	Default value
Maximum number of output records obtained from View Server by using the `jpcrpt` command	maxFetchCount (under the `<command>` tag)	1 - 2,147,483,647 (Specified by integer)	Value of maxFetchCount under `<vsa>` tag

#1

You must specify this item in bytes. However, if the last byte is used by a multi-byte character, the whole multi-byte character is displayed.

#2

When the interval between automatic update requests exceeds the time period, the server and agent determine that the report has ended without a notification and processing is terminated. Whether the request interval has exceeded the limit is determined every 10 seconds.

For example, when the time limit is set to 61,000 milliseconds, in effect the time limit will range from 61,000 to 70,000 milliseconds.

#3

The default `config.xml` file does not contain settings for realtimeCacheInterval and bookmarkRepository.

To add these settings, see the description of the initialization file (`config.xml`) in the appendixes of the *Job Management Partner 1/Performance Management Reference*, and add the items to the `config.xml` file located at `/opt/jp1pc/conf/`.

(d) Settings for communication with the View Server service

The following table lists and describes the `config.xml` file setting items used to change settings related to communication between PFM - Web Console and the View Server service.

Table 6-22: Settings for communication between PFM - Web Console and View Server

Content	Item	Available value	Default value
Port number used by PFM - Web Console (Web server) to communicate with the View Server service	ownPort[1], [2]	1,024 - 65,535	Any available port

Content	Item	Available value	Default value
Port number used by PFM - Web Console (commands) to communicate with the View Server service	ownCmdPort[#1, #2]	1,024 - 65,535	Any available port
Host name or IP address used as the callback destination for the View Server service during communication with PFM - Web Console	ownHost[#1]	• Numerals 0-9 • Periods (.) • Underscores (_) • Spaces • Alphabetic characters A-Z, a-z The string must begin with an alphanumeric character.	None

#1

> The default `config.xml` file does not contain settings for ownPort, ownCmdPort, and ownHost.
>
> To add these settings, see the description of the initialization file (`config.xml`) in the appendixes of the manual *Job Management Partner 1/Performance Management Reference*, and add the items to the `config.xml` file located at `/opt/jp1pc/conf/`.

#2

> This setting is required if you use Performance Management in a firewall environment. For details, see the description of firewall routing in the appendixes of the *Job Management Partner 1/Performance Management Reference*.

(e) Automatic logout settings

The following table lists and describes the `config.xml` file items that determine the length of time before users are automatically logged out from PFM - Web Console.

Table 6-23: Automatic logout settings

Content	Item	Available value	Default value
Length of time before automatic logout from PFM - Web Console (seconds)	sessionTimeout	0 - 86,400	4,000

(2) Procedure to return a changed initialization file (config.xml) to the default

The configuration of the `config.xml` file might be changed when you perform an upgrade installation of PFM - Web Console. After the upgrade, use the following

procedure to apply the edited content to the new `config.xml` file.

1. Take note of the edited content in `/opt/jp1pc/conf/config.xml`.

2. Back up `/opt/jp1pc/conf/config.xml`.

3. Replace `/opt/jp1pc/conf/config.xml` with the file at `/opt/jp1pc/sample/conf/config.xml`.

4. Apply the edited content you noted in step 1 to `/opt/jp1pc/conf/config.xml`.

Because the settings in the initialization file take effect when PFM - Web Console starts, restart PFM - Web Console after you change the initialization file.

Note:

To revert to the default `config.xml` file, copy the `config.xml` file from `/opt/jp1pc/sample/conf/` to the folder given above.

6.4.7 Setup and unsetup of Store 2.0

(1) Setup procedure

Store 2.0 can be used with version 08-11 or later of PFM - Manager or PFM - Base combined with the monitoring agent that is version 08-00 or later of PFM - Agent or PFM - RM. Store 2.0 is activated by default when you perform a new installation of PFM - Agent version 08-11 or PFM - RM.

Note:

Store 2.0 can only be used with the Store database of the Agent Store or Remote Monitor Store service. You cannot use Store 2.0 with the Store database of the Master Store service, which only supports Store 1.0. Store 1.0 cannot be used with the Remote Monitor Store service.

The setup procedure for Store 2.0 depends on the version of PFM - Agent and the method of installation. If you install version 08-11 or later of a Performance Management product into an environment that uses Store 1.0, the environment will continue to use Store 1.0. To migrate to Store 2.0, you need to execute the setup command for the Store database.

The following table lists the availability of Store 2.0 for each version of PFM - Agent, and how to implement it.

Table 6-24: For a single instance of PFM - Agent

PFM - Agent		Can Store 2.0 be used	Procedure for implementing Store 2.0
Version	Installation method		
07-00 or earlier	N/A	No	--

PFM - Agent		Can Store 2.0 be used	Procedure for implementing Store 2.0
Version	**Installation method**		
08-00	N/A	Yes but setup required	Execute setup command
08-11 or later	New installation	Yes	None required
	Upgrade installation	Yes	Execute setup command

(Legend) --: Not applicable.

Table 6-25: For multiple instances of PFM - Agent

PFM - Agent		Can Store 2.0 be used	Procedure for implementing Store 2.0
Version	**Timing of instance creation**		
07-00 or earlier	N/A	No	--
08-00 or later	Before installing PFM - Base or PFM - Manager 08-11	Yes but setup required	Execute setup command
	After installing PFM - Base or PFM - Manager 08-11	Yes	Select the Store version when using the `jpcconf inst setup` command to create an instance

(Legend) --: Not applicable.

For details on the setup procedure for using Store 2.0 with PFM - Agent, see the PFM - Agent manuals.

Note:

The data retention conditions for PD and PL-type records are set differently for each version of the Store database. When you migrate from Store 1.0 to Store 2.0, data that does not meet the data retention conditions of Store 2.0 is deleted. The default retention period in Store 2.0 differs depending on PFM - Agent or PFM - RM.

For example, in PFM - Agent that the default retention period has been set to 10 days, suppose that Store 1.0 stores 10,000 PD records for the 365 days from January 1st 2006 to December 31st 2006. When you migrate to Store 2.0, the default retention period of 10 days will result in 355 days of data being deleted.

For this reason, before migrating to Store 2.0, use the `jpctool db dump` command to output the data from Store 1.0.

PI record data remains the same after migration.

(2) Unsetup procedure

Use the `jpcconf db vrset -ver 1.0` command to perform unset of Store 2.0. This process initializes the data in the Store database and reverts the Store database to Store 1.0.

Note:

Performing unsetup of Store 2.0 initializes the data in the Store database. For this reason, use the `jpctool db dump` command to output the data in the database before reverting to Store 1.0.

6.4.8 Configuring the product name display function

You can change the format of keys and service IDs used for Performance Management to product names by enabling the product name display function. For details on the product name display function, see *4.1.2 Displaying and specifying services*.

Use the `jpcconf prodname` command to configure the product name display function. For details on the `jpcconf prodname` command, see the chapters that describe commands in the manual *Job Management Partner 1/Performance Management Reference*.

(1) Checking the settings of the product name display function

To check the settings of the product name display function:

1. Log on to the host for which you want to check the current settings of the product name display function.

2. Execute the `jpcconf prodname display` command.

   The current settings of the product name display function appears.

   An example of executing this command is as follows (while the product name display function is enabled):

   ```
   # jpcconf prodname display
   available
   ```

   For the logical host operations, specify a logical host name that you want to check the current settings in the `-lhost` option.

(2) Enabling the product name display function

To enable the product name display function:

1. Log on to the host where you want to enable the product name display function.

2. Stop all Performance Management services on the host.

For details on 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*. For the logical host operations, use the cluster software to stop the logical host on which Performance Management has been registered.

3. Execute the `jpcconf prodname enable` command.

   The product name display function is enabled.

   For the logical host operations, specify a logical host name that you want to enable the product name display function in the `-lhost` option.

4. Start all Performance Management services on the host.

   For details on starting the services, see the chapter that describes starting and stopping Performance Management in the *Job Management Partner 1/ Performance Management User's Guide*. For the logical host operations, use the cluster software to start the logical host on which Performance Management has been registered.

(3) Disabling the product name display function

To disable the product name display function:

1. Log on to the host where you want to disable the product name display function.

2. Stop all Performance Management services on the host.

   For details on 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*. For the logical host operations, use the cluster software to stop the logical host on which Performance Management has been registered.

3. Execute the `jpcconf prodname disable` command.

   The product name display function is disabled.

   For the logical host operations, specify a logical host name that you want to enable the product name display function in the `-lhost` option.

4. Start all Performance Management services on the host.

   For details on starting services, see the chapter that describes starting and stopping Performance Management in the *Job Management Partner 1/ Performance Management User's Guide*. For the logical host operations, use the cluster software to start the logical host on which Performance Management has been registered.

6.5 Settings required to read manuals with a Web browser

In Performance Management, you can use a Web browser to read manuals. To read a manual with a Web browser, copy the manual from the manual CD-ROM (included with the program product) to the host where PFM - Web Console is installed. If PFM - Web Console is running on a cluster system, copy the manual to both the executing physical host and standby physical host.

6.5.1 Setting procedure

(1) To read manuals from the PFM - Web Console Help

To read manuals from the PFM - Web Console Help:

1. To register PFM - Agent or PFM - RM to PFM - Web Console (or perform an additional setup for PFM - Agent or PFM - RM), follow the PFM - Web Console setup procedures.

2. In the host where PFM - Web Console is installed, create a directory for the manual to be copied.

   - For *Job Management Partner 1/Performance Management Planning and Configuration Guide*

     `/opt/jp1pcwebcon/doc/en/pcsy`

   - For *Job Management Partner 1/Performance Management User's Guide*

     `/opt/jp1pcwebcon/doc/en/pcop`

   - For *Job Management Partner 1/Performance Management Reference*

     `/opt/jp1pcwebcon/doc/en/pcre`

   - For the PFM - Agent or PFM - RM manual of JP1/Performance Management

     `/opt/jp1pcwebcon/doc/en/`*XXXX*

     XXXX indicates a help-ID of PFM - Agent or PFM - RM. For details on help IDs, see the ID list in an appendix of each PFM - Agent or PFM - RM manual.

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

   For HTML manuals:

   All HTM files and the `FIGURE` directory under the */CD-ROM-mount-point/* `MAN/3020/`*manual-number* (e.g. `03004A0D`) directory

   For PDF manuals:

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PDF files under the */CD-ROM-mount-point/*`MAN`/`3020`/*manual-number* (e.g. `03004A0D`) directory

When you copy the manuals, make sure that the index.htm file (for a HTML manual) or the actual PDF file (for a PDF manual) is located directly under the directory you created. For details on how to copy the manual files, see the `readme.txt` file stored in the manual CD-ROM.

4. Restart the PFM - Web Console.

(2) To read manuals from your computer hard disk

Use setup.exe in the CD-ROM to install the manual, or directly copy the HTM, PDF, and GIF files to a desired directory. For HTML manuals, make sure that the files are located in the following directory configuration:

```
html (HTM files are stored here)
  |- FIGURE (GIF files are stored here)
```

6.5.2 Reading manuals

To refer to the manual:

1. Click the **Help** menu from the menu bar frame in the Main window of PFM - Web Console. This displays the Help window.

2. Click the name of the manual or **PDF** that follows the manual name.

   If you click the manual name, the manual is displayed in the HTML format. Click the **PDF** icon to display the manual in the PDF format.

Note on displaying on a Web browser

   If you use Windows OS, when you open the online manual from **Start** menu, the HTML manual might replace a Web page already opened in the Web browser.

Appendixes

A. Limits
B. Naming Rules
C. System Estimates
D. Kernel Parameter List
E. Migration Steps and Notes on Migration
F. Version Compatibility
G. Outputting Action Log Data
H. Health Check Agent
I. Version Changes
J. Glossary

A. Limits

The appendix describes the limits of Performance Management are shown below:

A.1 System configuration

The number of PFM - Web Consoles, PFM - Agents, and PFM - RMs that can connect to a single PFM - Manager depends on the system configuration used and network environment. The approximate number of PFM - Web Consoles, PFM - Agents, and PRM - RMs that can connect to a single PFM - Manager is shown below:

(1) Number of PFM - Web Consoles that can connect to a PFM - Manager

The maximum number of PFM - Web Consoles that can connect to a single PFM - Manager is 20.

(2) Number of PFM - Agents and PFM - RMs that can connect to a PFM Manager

The maximum number of PFM - Agents and PFM - RMs that can connect to a PFM - Manager is 500. However, frequently issued alarm events from the PFM - Agent and PFM - RM or simultaneously issued alarm events from many PFM - Agents and PFM - RMs sometimes delay the alarm event processing of PFM - Manager. The following table shows the maximum number of PFM - Agents and PFM - RMs for which a single PFM - Manager can efficiently handle alarm events.

However, the load on system performance caused by programs other than Performance Management is not considered. Check the system operation before starting the operation, because the number of PFM - Agents and PFM - RMs is an estimated value.

Table A-1: Maximum number of PFM - Agents and PFM - RMs that can connect to a single PFM - Manager

Frequency of alarm events (times/hour)[1][2]	Number of connectable PFM - Agents and PFM - RMs
60	68
30	119
20	163
10	267
5	422
4	472
1	500

#1:

The number of alarm events issued per hour for a single PFM - Agent or PFM - RM

#2:

The frequency of alarm events depends on the alarm setting.

See the section that describes operation monitoring with alarms in the *Job Management Partner 1/Performance Management User's Guide* to estimate the frequency of alarm events for a particular environment. Then calculate the number of PFM - Agents and PFM - RMs that can connect to PFM - Manager.

Calculate the number of connectable PFM - Agents and PFM - RMs as follows:

- For PFM - Agent

  The number of PFM - Agents indicates the number of operating Agent Collector services.

  If a host contains two multi-instance agents and one single-instance agent, the number of PFM - Agents on the host is three.

- For PFM - RM:

  The number of PFM - RMs indicates the total number of operating RM Collector services, monitoring remote agents, and group agents.

  PFM - RM creates one group agent per instance. If a host contains two PFM - RM instances, and each instance is monitoring 10 remote agents, the number of PFM - RMs on the host is calculated as follows:

Number of PFM - RM
=2(*RM-Collector-services*)+20(*number-of-remote-agents*)+2(*number-of-group-agents*)
=24

Notes:

- If a single PFM - Agent or PFM - RM monitors an application program that can start multiple service sets on a single host, count the one instance as one.

- A value greater than 0 must be set for the number of alarm events issued per hour for a single PFM - Agent or PFM - RM.

- If the number of PFM - Agents or PFM - RMs exceeds the maximum number of connections for a system, operate the system by deploying PFM - Manager at each site and distributing the PFM - Agents and PFM - RMs. In this case, operate the system by connecting PFM - Web Console to the PFM - Manager at each site.

- Frequently issued alarm events from the PFM - Agent and PFM - RM or simultaneously issued alarm events from many PFM - Agents and PFM - RM

sometimes delay the alarm event processing of PFM - Manager. In such cases, manage the system by deploying PFM - Manager at each site, and distributing PFM - Agents and PFM - RMs.

- If you set an action for an alarm and select something other than **LOCAL** for the **Action handler** in the **Command** field on the New Alarm > Action Definitions window of the PFM - Web Console's browser, the load on PFM - Manager might increase severely. When an alarm triggers an action in a large system, select **LOCAL** for the **Action handler** in the **Command** field on the New Alarm > Action Definitions window to prevent the load on the PFM - Manager host from increasing severely.

- If you set an alarm and select **Always notify** or **Evaluate all data** in the **Advanced settings** area on the New Alarm > Main Information window of the PFM - Web Console's browser, alarm events will be issued more frequently. If you select these in a large system, do not increase the load on the system by setting the interval to high under **Damping**.

- Starting PFM - Manager while many PFM - Agents and PFM - RMs are being started sometimes delays the start of PFM - Manager. In such cases, start PFM - Manager before starting the PFM - Agents and PFM - RMs.

(3) Number of PFM - Agents and PFM - RMs to which PFM - Web Console can connect

This number is the maximum number of PFM - Agents and PFM - RMs to which a single PFM - Manager can connect.

A.2 Displaying PFM - Web Console

(1) Number of report windows displayable in PFM - Web Console

The following table describes the estimated number of report windows displayable in PFM - Web Console.

Table A-2: The number of report windows displayable in PFM - Web Console

Contents	Maximum number
Report windows displayable in a single PFM - Web Console	4
Report windows that can display information on a single PFM - Agent or PFM - RM in multiple PFM - Web Consoles	10

(2) Maximum number of data items displayed in a report

In real-time reports, data from a maximum of 30 collection times can be displayed. To change the maximum number of data items displayed in a report, change `maxRealtimeCache` in the initialization file (`config.xml`).

(3) Number of displayed real-time reports

If multi-instance records are collected in PFM - Agent or PFM - RM, the maximum number of instances handled by a collection is 32,767.

(4) Number of fields displayed in a report

Although there are no restrictions on the number of fields in a report, the system may be unable to display the graph or legend in part or in its entirety when the report contains too many fields. We recommend that you set about 20 fields per report.

(5) Number of tiled charts displayed

By default, a report can display a maximum of fifty tiled charts. If tiling charts puts a heavy load on the server, we recommend that you separate the bookmarks. This reduces the number of charts to be displayed.

If you want to change the maximum number of tiled charts for a report, modify the `maxTileReports` value in the initialization file (`config.xml`).

A.3 Store database size

(1) With Store 2.0

With Store 2.0, data is stored in multiple files, each covering a specific time period. Also, the data for each record type is stored in a different data file. For this reason, a size limit of 2 GB applies to each individual data file, rather than to the total amount of data in the database. Also, you cannot exceed the file size limit imposed by the `ulimit` command on UNIX systems or other restrictions on the file system.

(2) With Store 1.0

The maximum overall file size of the Store database used in Performance Management is 2 GB. Also, you cannot exceed the file size limit set by the `ulimit` command on UNIX systems or other restrictions on the file system.

A.4 Number limits for alarms and alarm tables

You can create a maximum of 50 alarms in one alarm table. If you are using the functionality for binding multiple alarm tables, you can bind no more than 50 alarm tables to a single monitoring agent.

If you bind a large number of alarms to a PFM - Agent and PFM - RM in the Performance Management system, processing might be delayed for PFM - Manager, PFM - Agent, or PFM - RM.

We recommend that you set the following values as the maximum number of bound alarms:

- 250 alarms per agent
- 10,000 alarms for the entire Performance Management system

B. Naming Rules

This section describes the naming rules for the Performance Management service.

B.1 Naming rules for services

Performance Management services are managed by using the GUI for PFM - Web Console and various commands. The service ID and service key are used to identify the services. The following describes naming rules for service IDs and service keys.

The service ID and service key formats vary, depending on whether the product name display function is enabled. For details, see *4.1.2 Displaying and specifying services*.

(1) Service ID

A service of Performance Management is assigned a unique ID. This ID is called the *service ID*. When you use a command to verify the system configuration for Performance Management or back up the performance data for an individual agent, specify a Performance Management service ID to execute the command.

(a) If the product name display function is disabled

If the product name display function is disabled, the service ID format is the same for all services. The configuration of a service ID is shown below:

Figure B-1: Example when the service ID is PN1001

Example of the service ID "PN1001"

```
P  N  1   001
```
Device ID
Instance ID
Function ID
Product ID
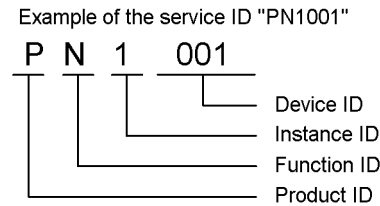
The following describes components that make up the service ID.

- Product ID

  The product ID is a one-byte identifier that indicates the Performance Management program product that provides this service.

  For the PFM - Manager services and the Action Handler service, the product ID is P. For the health check agent, the product ID is 0.

  For details on the product ID for each PFM - Agent or PFM - RM, see the list of identifiers in the appendixes of each PFM - Agent or PFM - RM manual.

- Function ID

The function ID is a one-byte identifier that indicates the function type for this service.

The following table lists the function IDs and the service name for each function ID, and provides an overview of each function.

Table B-1: Service names and function IDs

Function ID	Service name	Overview of function
A	Agent Collector	Collects performance data
	Remote Monitor Collector	
	Remote agent	
	Group agent	
C	Trap Generator	Issues client functions and SNMP traps
E	Correlator	Controls event sending between services
H	Action Handler	Executes actions
M	Master Manager	Contains the main functionality of Performance Management
N	Name Server	Manages the service configuration information within the system
P	View Server	The communication server between PFM - Web Console and PFM - Manager
S	Agent Store	Manages performance data and event data
	Remote Monitor Store	
	Master Store	
T	Status Server	Manages the status of services

■ Instance Number

The instance number is an identifier that is a one-byte control number used by internal processing.

■ Device ID

The device ID is an identifier containing characters (1-255 bytes) that indicate the host (for example) on which this service has been started in the Performance Management system. The device ID differs in settings depending on the services.

The following table describes the service name and the contents of the device ID.

Table B-2: Service names and device IDs

Service name	Settings of device ID
Name Server	Defaults to `001` and cannot be modified.
Master Manager	Defaults to `001` and cannot be modified.
View Server	Sets the host name.
Correlator	Defaults to `001` and cannot be modified.
Action Handler	Sets the host name.
Trap Generator	Sets the host name.
Agent Collector	Sets the host name when in a non-instance configuration. In an instance configuration, *instance-name* [*host-name*] is set.
Remote Monitor Collector	
Agent Store	Sets the host name when in a non-instance configuration. In an instance configuration, *instance-name* [*host-name*] is set.
Remote Monitor Store	
Remote agent	Sets the *instance-name* [*monitored-target-name@Remote-Monitor-Collector-service-operating-host-name*].
Group agent	Sets the *instance-name* [*group-name@Remote-Monitor-Collector-service-operating-host-name*].
Master Store	Defaults to `001` and cannot be modified.
Status Server	Sets the host name.

(b) If the product name display function is enabled

If the product name display function is enabled, the service ID format will vary for each service. The following table describes the service name and the contents of the service ID.

Table B-3: Service names and service IDs

Service name	Service ID
Name Server	<Name Server>
Master Manager	<Master Manager>
View Server	<View Server>
Correlator	<Correlator>

Service name	Service ID
Action Handler	*device-ID*<Action Handler>
Trap Generator	<Trap Generator>
Agent Collector	*device-ID*<*product-name*>
Remote Monitor Collector	
Remote agent	
Group agent	
Agent Store	*device-ID*<*product-name*>(Store)
Remote Monitor Store	
Master Store	<Master Store>
Status Server	*device-ID*<Status Server>
Web Console#	<Web Console>

#

This service is only used for output from the `jpctool service list` command.

The following describes components that make up the service ID.

■ Device ID

The device ID is an identifier containing characters (1-255 bytes) that indicate the host (for example) on which this service has been started in the Performance Management system. The device ID differs in settings depending on the services. The service ID format is the same as the one used when the product name display function is disabled. For details on the contents of device IDs, see Table B-2.

■ Product name

This indicates the product name of the PFM - Agent or PFM - RM.

(2) Service key

Specify an identifier called a *service key* to execute a command when starting or stopping each Performance Management service.

When you specify a service key to execute commands, you can use the formats listed below in (a) and (b), regardless of the status of the product name display function for the host that executes the commands.

Also, if you specify the service keys to execute `jpcspm start`, `jpcspm stop`, and

`jpctool service list` commands, some service keys will indicate different services. For details, see the chapters that describe the corresponding command in the *Job Management Partner 1/Performance Management Reference.*

(a) If the product name display function is disabled

The following table describes the service keys.

Table B-4: Service key list (if the product name display function is disabled)

Service key	Meaning
All	Indicates the services of all Performance Management programs. PFM - Web Console services are included if you specify links for start and stop with PFM - Web Console in the same host, and specify the services to execute the `jpcspm start,` `jpcspm stop,` and `jpctool service list` commands.
jp1pc	Indicates the services of all Performance Management programs. PFM - Web Console services are not included. You can only set this service key to execute `jpcspm start,` `jpcspm stop,` and `jpctool service list` commands.
Mgr	Indicates the PFM - Manager service (except for the Action Handler service).
Act	Indicates the Action Handler service.
Stat	Indicates the Status Server service.
agt0	Indicates the services (Agent Collector and Agent Store) of the health check agent.
wc	Indicates the PFM - Web Console services.

For details on service keys for each PFM - Agent or PFM - RM, see the corresponding manual for each PFM - Agent or PFM - RM.

(b) If the product name display function is enabled

The table below lists the service keys. The service keys are case insensitive when you specify them to execute commands.

Table B-5: Service key list (if the product name display function is enabled)

Service key	Description
Manager	Indicates the PFM - Manager services (except the Action Handler service).
AH	Indicates the Action Handler service.
StatSvr	Indicates the Status Server service.

Service key	Description
HC	Indicates the health check agent services (Agent Collector and Agent Store).
WebConsole	Indicates the PFM - Web Console services.

For details on service keys for each PFM - Agent or PFM - RM, see the corresponding manual for each PFM - Agent or PFM - RM. However, for PFM - Agent version 08-11 or earlier, see *B.3 Service key list for PFM - Agent (if the product name display function is enabled)*.

B.2 Correspondence between the service names in Performance Management and in Windows

The service names of Performance Management programs differ from the service names in Windows. In Windows, the Services window displays the Windows services names.

The following table describes the correspondence between the service names of Performance Management programs and the service names in Windows.

Table B-6: Correspondence between the service names of PFM - Manager and the service names in Windows

Service name	Service name in Windows
Name Server	PFM - Name Server
Master Manager	PFM - Master Manager
View Server	PFM - View Server
Correlator	PFM - Correlator
Action Handler	PFM - Action Handler
Trap Generator	PFM - Trap Generator
Master Store	PFM - Master Store
Status Server	PFM - Status Server
Agent Collector	PFM - Agent for HealthCheck
Agent Store	PFM - Agent Store for HealthCheck

Table B-7: Correspondence between the service names of PFM - Web Console and the service names in Windows

Service name	Service name in Windows
Web Console	PFM - Web Console
Web Service	PFM - Web Service

Table B-8: Correspondence between the service names of PFM - Base and the service names in Windows

Service name	Service name in Windows
Action Handler	PFM - Action Handler
Status Server	PFM - Status Server

Table B-9: Correspondence between the service names of PFM - Agent and the service names in Windows

Service name	Service name in Windows
Agent Collector	PFM - Agent for *XXXX*[#1] [*instance-name*][#2]
Agent Store	PFM - Agent Store for *XXXX*[#1] [*instance-name*][#2]

#1

XXXX indicates the name of the monitored program for each PFM - Agent.

#2

For a PFM - Agent monitoring an application program that can start multiple service sets on a single host, the instance name is displayed.

Table B-10: Correspondence between the service names of PFM - RM and the service names in Windows

Service name	Service name in Windows
Remote Monitor Collector	PFM - RM for *XXXX*[#] [*instance-name*]
Remote Monitor Store	PFM - RM Store for *XXXX*[#] [*instance-name*]

#

XXXX indicates the name of the monitored program of each PFM - RM.

B.3 Service key list for PFM - Agent (if the product name display function is enabled)

The following table lists the service keys for when the product name display function is enabled. This table is for PFM - Agent version 08-11 or earlier.

Table B-11: PFM - Agent service key list

Product name	Service key (if the product name display function is enabled)
PFM - Agent for Enterprise Applications	EAP
PFM - Agent for JP1/AJS	AJS3
PFM - Agent for Microsoft SQL Server	SQL
PFM - Agent for Oracle	Oracle
PFM - Agent for Platform (UNIX)	UNIX
PFM - Agent for Platform (Windows)	Windows
PFM - Agent for Service Response	SR
PFM - Agent for Virtual Machine	VM

C. System Estimates

Before configuring the system using Performance Management, Hitachi recommends that you estimate whether the computer is powerful enough to run Performance Management.

For PFM - Agent or PFM - RM, we recommend that you estimate whether the computer is powerful enough to run PFM - Agent or PFM - RM. For details on the system estimates for PFM - Agent, see the system estimates in an appendix of each PFM - Agent or PFM - RM manual.

The following describes the estimated items.

C.1 Memory requirements

Memory requirements might change according to the settings status or use status of Performance Management. The approximate estimate of memory requirements for Performance Management is shown below for each OS.

(1) In Windows

Table C-1: Memory requirements (in Windows)

Program	Memory requirements (unit: megabytes)	
	Windows Server 2003	**Windows Server 2008**
PFM - Manager	512	520
PFM - Web Console	1034	1034
PFM - Base	30	30

(2) In UNIX

Table C-2: Memory requirements (in UNIX)

Program	Memory requirements (unit: megabytes)					
	HP-UX	**Solaris (SPARC)**	**Solaris (excluding SPARC)**	**AIX**	**Linux (excluding IPF)**	**Linux (IPF)**
PFM - Manager	--	400	--	300	700	--
PFM - Web Console	--	--	--	--	1427	--
PFM - Base	20	30	30	20	30	160

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Legend:

--:Not supported

C.2 Exclusively occupied disk space

The exclusively occupied disk space sometimes changes according to the number of records that collect the performance data.

The following gives estimates of the exclusively occupied disk space for Performance Management.

(1) Exclusively occupied disk space for the entire system

The exclusively occupied disk space for the entire system is shown below for each OS.

(a) In Windows

Table C-3: Exclusively occupied disk space for the entire system (in Windows)

Program	Status	Exclusively occupied disk space (unit: megabytes)	
		Windows Server 2003	**Windows Server 2008**
PFM - Manager	During an installation	155	160
	Normal	$461 + 0.015$ x a x b + 0.01 x c + 2 x d + W	$466 + 0.1$ x a + 0.015 x a x b + 0.01 x c + 2 x d + W
PFM - Web Console	During an installation	300	$140^{\#} + 355$
	Normal	$300 + 160 + (e \times f \times g)$	$140^{\#} + 355 + 160 + (e \times f \times g)$
PFM - Base	During an installation	30	35
	Normal	$112 + 2$ x d	$117 + 2$ x d

Legend:

a: Number of connected PFM - Agents or PRM - RM (if instances are started, the number of instances is also added)

b: Number of saved PA records (initial status is 1,000)

c: Number of user-created reports

d: Upper limit of common message log file

e: Value of `logFileNumber` in `config.xml`

f: Value of `logFileSize` in `config.xml`

g: Number of commands including `jpcrpt` and `jpcmkkey` and subcommands of `jpcrdef`, `jpcasrec`, and `jpcaspsv` (maximum number: 9)

W: Exclusively occupied disk space used for the Store database of the health check agent

\#

Exclusively occupied disk space on the system drive. For example, when the system drive is C: and the ordinary drive is D:, 140 MB is used on the C: drive, even if PFM - Web Console is installed on the D: drive.

(b) In UNIX

Table C-4: Exclusively occupied disk space for the entire system (in UNIX)

Program	Status	Exclusively occupied disk space (unit: megabytes)					
		HP-UX	Solaris (SPARC)	Solaris (excluding SPARC)	AIX	Linux (excluding IPF)	Linux (IPF)
PFM - Manager	During an installation	--	220 x 2	--	410 x 2	220 x 2	--
	Normal	--	526 + 0.1 x a + 0.015 x a x b + 0.01 x c + 2 x d + W	--	716 + 0.1 x a + 0.015 x a x b + 0.01 x c + 2 x d + W	526 + 0.1 x a + 0.015 x a x b + 0.01 x c + 2 x d + W	--
PFM - Web Console	During an installation	--	--	--	--	480	--
	Operation in the initial status	--	--	--	--	480 + 160 + e x f x g	--
PFM - Base	During an installation	240 x 2	50 x 2	50 x 2	220 x 2	70 x 2	80 x 2
	Normal	322 + 2 x d	132 + 2 x d	132 + 2 x d	302 + 2 x d	152 + 2 x d	162 + 2 x d

Legend:

a: Number of connected PFM - Agents or PRM - RM (if instances are started, the number of instances is also added)

b: Number of saved PA records (initial status is 1,000)

c: Number of user-created reports

d: Upper limit of common message log file

e: Value of `logFileNumber` in `config.xml`

f: Value of `logFileSize` in `config.xml`

g: Number of commands including `jpcrpt` and `jpcmkkey` and subcommands of `jpcrdef`, `jpcasrec`, and `jpcaspsv` (maximum number: 9)

W: Exclusively occupied disk space used for the Store database of the health check agent

--: Not supported

(2) Exclusively occupied disk space for the Store database (Master Store)

The exclusively occupied disk space required for tasks in the Store database of the Master Store service of PFM - Manager is shown below for each OS.

(a) In Windows

Table C-5: Exclusively occupied disk space required for tasks in the Store database (in Windows)

Tasks	Estimation expression for exclusively occupied disk space (unit: megabytes)
Backup of Store database	$2 \times (1 + 0.1 \times a + 0.015 \times a \times b)$
Export of Store database	$2 \times (1 + 0.1 \times a + 0.015 \times a \times b)$

Legend:

a: Number of connected PFM - Agents or PRM - RM (if instances are started, the number of instances is also added)

b: Number of saved PA records (initial status is 1,000)

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(b) In UNIX

Table C-6: Exclusively occupied disk space required for tasks in the Store database (in UNIX)

Tasks	Estimation expression for exclusively occupied disk space (unit: megabytes)		
	Solaris	**AIX**	**Linux**
Backup of Store database	2 x (1 + 0.1 x a + 0.015 x a x b)	2 x (1 + 0.1 x a + 0.015 x a x b)	2 x (1 + 0.1 x a + 0.015 x a x b)
Export of Store database	2 x (1 + 0.1 x a + 0.015 x a x b)	2 x (1 + 0.1 x a + 0.015 x a x b)	2 x (1+0.1 x a + 0.015 x a x b)

Legend:

a: Number of connected PFM - Agents or PRM - RM (if instances are started, the number of instances is also added)

b: Number of saved PA records (initial status is 1,000)

(3) Exclusively occupied disk space for the Store database (health check agent)

When using the health check function, you also need to consider the exclusively occupied disk space used by the Store database of the health check agent. The disk space occupied by the Store database depends on the Store version. By default, the health check agent uses Store 2.0. For details on estimating the disk space used by Store 2.0, see *C.4 Exclusively occupied disk space when using the Store database in PFM - Agent 08-00 or later (Store 2.0)*. The exclusively occupied disk space when using Store 1.0 is shown below.

(a) Estimation expression (Store 1.0)

For Store databases, each record is stored by type in a single file. The following table describes the exclusively occupied disk space for Store databases (Store 1.0) by record type.

Table C-7: Exclusively occupied disk space for Store databases by record type

Record type	Estimation expression for exclusively occupied disk space (unit: bytes)
PI record type	$(X_1 + ... + X_a + 3{,}500 \times a)$
PD record type	$(Y_1 + ... + Y_b + 700 \times b)$

Legend:

X: Exclusively occupied disk space for each type of historical data record for

PI-type records

The formula to calculate X is as follows:

$$X = \{e \times f + (d + 1{,}900) \times \{(e \times f) / (65{,}250 - d) + 1\}^{\#1}\} \times g \times 1.5$$

Y: Exclusively occupied disk space for each type of historical data record for PD-type records

The formula to calculate Y is as follows:

$$Y = \{e \times h + (d + 1{,}900) \times \{(e \times f) / (65{,}250 - d) + 1\}^{\#1} \times (h / f)^{\#2}\} \times 1.5$$

a: The number of historical data records for a PI-type record

b: The number of historical data records for a PD-type record

d: Size of the fixed part of each type of historical data record[#3]

e: Size of the variable part of each type of historical data record[#3]

f: Number of instances of each type of historical data record (or 1 if single-instance records)[#5]

g: The number of stored records for each type of historical data record (the number of instances is not considered)[#4]

h: The maximum number of stored records for each type of historical data record

#1:

Truncate the result of $\{(e \times f) / (65{,}250 - d) + 1\}$ at the decimal point.

#2:

Truncate the result of (h / f) at the decimal point.

#3:

For details on the sizes of the fixed and variable parts of each record, see *H.1 Data model*.

#4:

For PI-type records, the collected data is automatically summarized by segment (hour, day, week, month, and year). When calculating the exclusively occupied disk space, you must consider the number of stored records per minute, hour, day, week, month, and year. The following table shows the default retention periods and the number of stored records:

Data Type	Retention period	Number of stored records (if the collection interval is 1 minute)
Per-minute	1 day	1,440
Hourly	7 days	168
Daily	1 year	366
Weekly	1 year	52
Monthly	1 year	12
Yearly	Indefinite	*collection-years* x 1

#5:

The following table shows the number of instances for each record.

Table C-8: Number of instances for each record

Record ID	Command	Note
PI_HAVL	jpctool service list -id "?A*" -host "*"	The number of hosts displayed when this command is entered
PD_HC	jpctool service list -id "?A*" -host "*"	The number of the Agent Collector and Remote Monitor Collector services displayed when this command is entered
PD_HOST	jpctool service list -id "?A*" -host "*"	The number of hosts displayed when this command is entered

(b) Example estimate

Example estimate 1

Estimation expression for the PI-type record Host Availability (PI_HAVL), when only PI_HAVL has been set to be saved. The values for variables a-g indicated in Table C-7 are assumed as follows:

```
a = 1
d = 681
e = 292
f = 25
g = 2,039
```

(How to determine the value f)

Using Table C-8, you can determine the number of instances for the record. Here the value f is 25.

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(How to determine the value g)

> Assuming that the collection interval of `PI_HAVL` is 5 minutes, the yearly collection period is 1 year, and the retention periods are configured as described in Legend #4 for Table C-7.
> ```
> 288 + 168 + 366 + 52 + 12 + 1 = 887 records
> g = 887
> ```

The formula to calculate X:
```
X = {e x f + (d + 1,900) x {e x f/(65,250 - d) + 1}} x g
x 1.5
X = {292 x 25 + (681 + 1,900) x {292 x 25/(65,250 - 681)
+1}} x 887 x 1.5
 = {7,300 + (2,581) x {7,300 / 64,569 + 1}} x 1330.5
 = {7,300 + 2,581 x 1} x 1330.5
 = 9,881 x 1330.5
= 13,146,671 (bytes)
= Approx. 12.5 (megabytes)
```

Example estimate 2

> Estimation expression for the PD-type record Health Check Detail (PD_HC), when only PD_HC has been set to be saved.
> ```
> b = 1
> d = 716
> e = 988
> f = 25
> h = 15,000
> ```

(how to determine the value f)

> Refer to the number of instances for the performance object that corresponds to the records in Table C-8. Here the value f is 3.

(how to determine the value h)

> By default, the maximum number of records for the retention period is 10,000 records.
>
> Here 15, 000 records is set as the maximum number of records for the retention period.

The formula to calculate Y:
```
Y = {e x h + (d + 1,900) x {(e x f)/(65,250 - d) + 1} x
(h/f)} x 1.5
Y ={988 x 15,000 + (716 + 1,900) x {(988 x 25)/(65,250 -
716) + 1} x (15,000/25)} x 1.5
  = {988 x 15,000 + 2,616 x {24,700 / 64,534 + 1} x 600}
x 1.5
  = {14,820,000 + 2,616 x 1 x 744} x 1.5
```

```
= {14,820,000 + 1,202,304} x 1.5
= 16,022,304 x 1.5
= 24,033,456 (bytes)
= Approx. 23 (megabytes)
```

C.3 Exclusively occupied disk space when running on a cluster system

The exclusively occupied disk space required for the shared disk when running Performance Management on a cluster system is shown below for each OS.

(1) Exclusively occupied disk space of the shared disk

(a) In Windows

Table C-9: Exclusively occupied disk space of the shared disk (in Windows)

Program	Estimation expression for exclusively occupied disk space (unit: megabytes)
PFM - Manager	6 + 0.1 x a + 0.015 x a x b + 0.01 x c + 2 x d
PFM - Web Console	10

Legend:

a: The number of PFM - Agents or PFM - RMs that are connected to PFM - Manager (including the number of instances that are running)

b: Number of saved PA records (initial status is 1,000)

c: Number of user-created reports

d: Upper limit of log file

(b) In UNIX

Table C-10: Exclusively occupied disk space of the shared disk (in UNIX)

Program	Estimation expression for exclusively occupied disk space (unit: megabytes)		
	Solaris (SPARC)	AIX	Linux
PFM - Manager	6 + 0.1 x a + 0.015 x a x b + 0.01 x c + 2 x d	6 + 0.1 x a + 0.015 x a x b + 0.01 x c + 2 x d	6 + 0.1 x a + 0.015 x a x b + 0.01 x c + 2 x d
PFM - Web Console	--	--	10

Legend:

a: Number of connected PFM - Agents or PRM - RM (including the number of

instances that are running)

b: Number of saved PA records (initial status is 1,000)

c: Number of user-created reports

d: Upper limit of log file

--: Not supported

(2) The exclusively occupied disk space for the Store database

For details on the exclusively occupied disk space of the Shared disk required for tasks in the Store database of PFM - Manager, see *C.2(2) Exclusively occupied disk space for the Store database (Master Store)*.

C.4 Exclusively occupied disk space when using the Store database in PFM - Agent 08-00 or later (Store 2.0)

This section describes the exclusively occupied disk space required for the Store database (Store 2.0) when running PFM - Agent 08-00.

(1) Estimation expression

The following describes how to estimate the exclusively occupied disk space, number of files, and number of directories used by the Store database.

(a) Exclusively occupied disk space

The exclusively occupied disk space used by the Store database is the sum of the disk space used for each record type. The exclusively occupied disk space used for PI-type records is the sum of the disk space used for each summary block.

Note:

Some additional fields are created when performance data is saved to the Store database. These additional fields are included in the disk space requirements and there is no need to estimate how much space they occupy. The additional fields common to all records are the same as in Store 1.0. For details, see the PFM - Agent manual.

Estimation expression for the exclusively occupied disk space X for each record type (unit: bytes)

```
X = {(e + 2) x f' + (d + 60) x {((e + 2) x f') / (65,250 -
d) + 1}#1} x a / b x (c + 1) x 1.1
```

a: Value differs for each record type and summary block. See Table C-11.

b: Value differs for each record type and summary block. See Table C-11.[2]

c: Retention period setting for historical data[3]. The unit used depends on the record type and summary block. Look up the units in Table C-11.

d: Size of the fixed part of each type of historical data record[#4]

e: Size of the variable part of each type of historical data record[#4]

f: Number of instances of each type of historical data record (or 1 if single-instance records)[#5]

f': If f is 2 or greater, f' is the value of f rounded up to the nearest multiple of 4. For example, if f = 2, then f' = 4. If f = 13, then f' = 16. If f = 13, then f' = 16.

Table C-11: Values to assign to a, b, and c

Record type	Summary block	a	b	c
PI	Minute	1,440	$1 + (g - 1)/60$[#2]	Retention period (unit: days)
	Hour	24	$1 + (g - 1)/3,600$[#2]	Retention period (unit: days)
	Day	7	$1 + (g - 1)/86,400$[#2]	Retention period (unit: weeks)
	Week	1	$1 + (g - 1)/604,800$[#2]	Retention period (unit: weeks)
	Month	1	$1 + (g - 1)/2,592,000$[#2]	Retention period (unit: months)
	Year	1	$1 + (g - 1)/31,622,400$[#2]	Retention period (unit: years)
PD	--	1,440	$g/60$	Retention period (unit: days)
PL	--	1,440	$g/60$	Retention period (unit: days)

Legend:

g: Collection interval setting for historical data (unit: bytes)

--: Not applicable.

#1

Truncate the result of $\{((e + 2) \times f')/(65,250 - d) + 1\}$ at the decimal point.

#2

Truncate the result of b for the PI record type at the decimal point.

#3

When using PFM - Agent 08-00 with Store 2.0, the retention period settings are derived from the settings used with Store 1.0. For details, see the section that describes the `jpcconf db vrset` command in the manual *Job*

Management Partner 1/Performance Management Reference.

#4

The sizes of the fixed and variable parts of each record are the same as for
Store 1.0. For details, see the PFM - Agent manuals.

#5

The number of instances of each record type is the same as for Store 1.0. For
details, see the PFM - Agent manuals.

(b) Number of files

The expression for estimating N, the number of files that constitute the Store database,
is as follows:

```
N = 20 + 2 x (
  (A11 + A12 + ... + A1m + m) +
  (A21 + A22 + ... + A2m + m) +
  (A31 + A32 + ... + A3m + m) +
  (A41 + A42 + ... + A4m + m) +
  (A51 + A52 + ... + A5m + m) +
  (11 x m) +
  (B1 + B2 + ... + Bn + n) +
  (C1 + C2 + ... + Co + o)
  )
```

m: Number of records of PI record type

n: Number of records of PD record type

o: Number of records of PL record type

A11 to A1m: Retention period settings for per-minute records of PI record type (unit:
days)

A21 to A2m: Retention period settings for hourly records of PI record type (unit: days)

A31 to A3m: Retention period settings for daily records of PI record type (unit: weeks)

A41 to A4m: Retention period settings for weekly records of PI record type (unit:
weeks)

A51 to A5m: Retention period settings for monthly records of PI record type (unit:
months)

B1 to Bn: Retention period settings for records of PD record type (unit: days)

C1 to Co: Retention period settings for records of PL record type (unit: days)

(c) Number of directories

The expression for estimating N, the number of directories created to house the Store
database, is as follows:

```
N = 25 + 2 x ((A1max) + (A2max) + (A3max) + (A4max) + (A5max) +
11 + (Bmax) + (Cmax))
```

A1max: Maximum retention period setting for records of PI record type in the summary block of minute (unit: days)

A2max: Maximum retention period setting for records of PI record type in the summary block of hour (unit: days)

A3max: Maximum retention period setting for records of PI record type in the summary block of day (unit: weeks)

A4max: Maximum retention period setting for records of PI record type in the summary block of week (unit: weeks)

A5max: Maximum retention period setting for records of PI record type in the summary block of month (unit: months)

Bmax: Maximum retention period setting for each record of PD record type (unit: days)

Cmax: Maximum retention period setting for each record of PL record type (unit: days)

(d) Number of files opened by the Store service

The expression for estimating N, the number of files opened by the Store service, is as follows:
```
N = 20 + 2 x (6 x l + m + n)
```

l: Number of records of PI record type

m: Number of records of PD record type

n: Number of records of PL record type

(2) Example estimate

An example of estimating these resource requirements is described below. In this example, the Store database (Store 2.0) is used in PFM - Agent for Platform.

(a) Exclusively occupied disk space

This example assumes that Performance Management collects the PI_LOGD record and the PD record.

The following shows an example of estimating the disk space requirements for PI_LOGD records. Substitute the following values for the variables in the expression in *(1) Estimation expression*.
```
d = 681 (bytes)
e = 700 (bytes)
f = 3
f' = 4
```

```
g = 60 (seconds)
```

Next, calculate the disk space requirements for per-minute and hourly records.

Per-minute records

> Substitute the following values for the variables:
> ```
> a = 1,440
> b = 1 + (60 - 1)/60
>  = 1.98...
>  = 1 (truncated at the decimal point)
> c = 3 (days)
> ```
>
> Use the following expression to estimate the disk space required:
> ```
> X (per-minute) ={(700 + 2) x 4 + (681 + 60) x {((700 + 2) x
> 4) / (65,250 - 681) + 1}}
> x 1,440 / 1 x (3 + 1) x 1.1
>       = {2,808 + 741 x 1} x 6,336
>       = 3,549 x 6,336
>       = 22,486,464 (bytes) = Approx. 22 (MB)
> ```

Hourly records

> Substitute the following values for the variables:
> ```
> a = 24
> b = 1 + (60 - 1) / 3,600
>  = 1.01...
>  = 1 (truncated at the decimal point)
> c = 3 (days)
> ```
>
> Use the following expression to estimate the disk space required:
> ```
> X (hourly) = {(700 + 2) x 4 + (681 + 60) x {((700 + 2) x 4)
> / (65,250 - 681) + 1}}
> x 24 / 1 x (3 + 1) x 1.1
>       = {2,808 + 741 x 1} x 105.6
>       = 3,549 x 105.6
>       = 374,774.4 (bytes) = Approx. 0.4 (MB)
> ```

Daily records

> Substitute the following values for the variables:
> ```
> a = 7
> b = 1 + (60 - 1) / 86,400
>  = 1.00...
>  = 1 (truncated at the decimal point)
> c = 1 (weeks)
> ```
>
> Use the following expression to estimate the disk space required:
> ```
> X (daily) = {(700 + 2) x 4 + (681 + 60) x {((700 + 2) x 4) /
> (65,250 - 681) + 1}}
> ```

```
        x 7 / 1 x (1 + 1) x 1.1
            = {2,808 + 741 x 1} x 15.4
            = 3,549 x 15.4
            = 54,654.6 (bytes) = Approx. 0.05 (MB)
```

Weekly records

Substitute the following values for the variables:

```
a = 1
b = 1 + (60 - 1) / 604,800
 =1.00...
 = 1 (truncated at the decimal point)
c = 1 (weeks)
```

Use the following expression to estimate the disk space required:

```
X (weekly) = {(700 + 2) x 4 + (681 + 60) x {((700 + 2) x 4)
/ (65,250 - 681) + 1}}
x 1 / 1 x (1 + 1) x 1.1
            = {2,808 + 741 x 1} x 2.2
            = 3,549 x 2.2
            = 7,807.8 (bytes) = Approx. 0.008 (MB)
```

Monthly records

Substitute the following values for the variables:

```
a = 1
b = 1+(60-1) / 2,592,000
 = 1.00...
 = 1 (truncated at the decimal point)
c = 1 (months)
```

Use the following expression to estimate the disk space required:

```
X (monthly) = {(700 + 2) x 4 + (681 + 60) x {((700 + 2) x 4)
/ (65,250 - 681) + 1}}
x 1 / 1 x (1+1) x 1.1
            = {2,808 + 741 x 1} x 2.2
            = 3,549 x 2.2
            = 7,807.8 (bytes) = Approx. 0.008 (MB)
```

Yearly records

Substitute the following values for the variables:

```
a=1
b=1+(60-1) / 31,622,400
 =1.00...
 =1 (truncated at the decimal point)
c=10 (fixed)
```

Use the following expression to estimate the disk space required:

```
    X (yearly) = {(700 + 2) x 4 + (681 + 60) x {((700 + 2) x 4)
    / (65,250 - 681) + 1}}
    x 1 / 1 x (10 + 1) x 1.1
          = {2,808 + 741 x 1} x 12.1
          = 3,549 x 12.1
          = 42,942.9 (bytes) = Approx. 0.04 (MB)
```

Accordingly, the disk space occupied by PI_LOGD records can be estimated as follows:

```
X (total)  = X (per-minute) + X (hourly) + X (daily) + X (weekly)
+ X (monthly) + X (yearly)
          = 22.506 (MB)
          = Approx. 23 (MB)
```

Next, we estimate the disk space requirements for PD records.

Substitute the following values for the variables:

```
a = 1,400
b = 60 / 60 = 1
c = 10 (days)
d = 681 (bytes)
e = 472 (bytes)
f = 10
f' = 12
g = 60 (seconds)
```

Use the following expression to estimate the disk space required:

```
X = {(472 + 2) x 12 + (681 + 60) x {((472 + 2) x 12) / (65,250
- 681) + 1}
x 1,400 / 1 x (10 + 1) x 1.1
 = {5,688 + 741 x 1} x 17,424
 = 6,429 x 17,424
 = 112,018,896 (bytes) = Approx. 112 (MB)
```

Accordingly, the exclusively occupied disk space required for PI_LOGD and PD records is 135 MB.

(b) Number of files

The following shows an example of estimating the number of files in the Store database when PI, PI_LOGD, PD, and PD_PDI records are collected. Substitute the following values for the variables in the expression in *(1) Estimation expression*.

```
m = 2
n = 2
o = Zero
A11 to A1m = 3 (days)
A21 to A2m = 3 (days)
A31 to A3m = 1 (weeks)
A41 to A4m = 1 (weeks)
```

```
A51 to A5m = 1 (months)
B1 to Bn = 10 (days)
C1 to Co = Not required
```

The expression for estimating N, the number of files created to house the Store database, is as follows:

```
N = 20 + 2 x (
        (A11 + A12 + ... + A1m + m) +
        (A21 + A22 + ... + A2m + m) +
        (A31 + A32 + ... + A3m + m) +
        (A41 + A42 + ... + A4m + m) +
        (A51 + A52 + ... + A5m + m) +
        (11 x m) +
        (B1 + B2 + ... + Bn + n) +
        (C1 + C2 + ... + Co + o)
        )
  = 20 + 2 x {
        [3(PI portion) + 3(PI_LOGD portion) + 2] +
        [3(PI portion) + 3(PI_LOGD portion) + 2] +
        [1(PI portion) + 1(PI_LOGD portion) + 2] +
        [1(PI portion) + 1(PI_LOGD portion) + 2] +
        [1(PI portion) + 1(PI_LOGD portion) + 2] +
        [11 x 2] +
        [10(PD portion) + 10(PD_PDI portion) + 2]
        }
 =20 + 2 x {8 + 8 + 4 + 4 + 4 + 22 + 22}
 =20 + 2 x 72 = 20 + 144 = 164
```

(c) Number of directories

The following shows an example of estimating the number of directories created to house the Store database when PI, PI_LOGD, PD, and PD_PDI records are colleted.

Substitute the following values for the variables in the expression in *(1) Estimation expression*.

```
A1max = 3 (days) (when A1max is 2 days for PI records and 3 days
for PI_LOGD records, use 3 days as it is the higher value)
A2max = 3 (days)
A3max = 1 (weeks)
A4max = 1 (weeks)
A5max = 1 (months)
Bmax = 10 (days) (when Bmax is 8 days for PD_PDI records and 10
days for PD records, use 10 days is used as it is the higher
value)
Cmax = Zero
```

The expression for estimating N, the number of directories created to house the Store database, is as follows:

```
N = 25 + 2 x ((A1max) + (A2max) + (A3max) + (A4max) + (A5max) +
```

```
11 + (Bmax) + (Cmax))
  = 25 + 2 x (3 + 3 + 1 + 1 + 1 + 11 + 10 + 0) = 85
```

(d) Number of files opened by the Store service

The following shows an example of estimating the number of files opened by the Store service when PI, PI_LOGD, PD, and PD_PDI records are collected.

Substitute the following values for the variables in the expression in *(1) Estimation expression*.

```
l = 2
m = 2
n = 0
```

The expression for estimating N, the number of files opened by the Store service, is as follows:

```
N = 20 + 2 x (6 x l + m + n)
  = 20 + 2 x (6 x 2 + 2 + 0) = 48
```

C.5 Estimate and setting when multiple PFM - Agents and PFM - RMs are connected to PFM - Manager

(1) How to increase the upper limit of connected PFM - Agents and PFM - RMs

When the number of PFM - Agents or PFM - RMs connected to PFM - Manager exceeds the upper limit of connection, connection stalls or reconnection between PFM - Agent and PFM - Manager (or PFM - RM and PFM - Manager) frequently occurs. This might lead to a significant increase of the load on PFM - Manager, making it unable to maintain a connection for an extended period of time. As a result, the following problems might occur:

- Operations in PFM - Web Console time-out

- When starting PFM - Agent or PFM - RM, it takes a long time for PFM - Manager to switch from the stand-alone mode to the normal operation mode

If these problems occur, perform the following procedure in PFM - Manager:

1. Use the following steps to estimate the maximum time for idle timeout with PFM - Manager:

    (1) Obtain the minimum record collection interval (in seconds) for each PFM - Agent and PFM - RM connected to PFM - Manager.

    (2) From the values obtained in step 1 above, determine the maximum record collection interval (in seconds).

    (3) Add 60 to the value determined in step 2 above, and then compare that value to 360. The larger value is the maximum time for an idle timeout (in seconds).

2. Edit the `NS Connection Timeout` and `NS Maximum Connections` labels in

the `Name Server Section`, `Master Manager Section`, and `Correlator Section` sections of the `jpccomm.ini` file.

The `jpccomm.ini` file is stored in the following destination. The *environment-directory* indicates the directory specified when the `jpcconf ha setup` command was executed.

OS	Storage location for the jpccomm.ini file
In Windows:	• PFM - Manager (for physical host use) *installation-folder*`\jpccomm.ini` • PFM - Manager (for logical host use) *environment-directory*`\jp1pc\jpccomm.ini`
In UNIX:	• PFM - Manager (for physical host use) `/opt/jp1pc/jpccomm.ini` • PFM - Manager (for logical host use) *environment-directory*`/jp1pc/jpccomm.ini`

Edit the following sections in the `jpccomm.ini` file:

[Before change]

```
NS Connection Timeout=70
          :
NS Maximum Connections=100
```

[After change]

```
NS Connection Timeout= The maximum time for idle timeout determined in step 1
          :
NS Maximum Connections=1500
```

3. Restart PFM - Manager.

If this problem still occurs even after changing the settings as above, see *(2) If reconnection frequently occurs because the collection interval is too short* for details on how to change the record collection period.

Reference note:

In an environment where PFM - Manager 09-00 or later is newly installed, `NS Maximum Connections` is set as 1500 by default.

(a) Example of estimating the idle timeout

The example described below assumes the following conditions:

■ Records collected by instance A for PFM - Agent for Oracle

Collection interval of Record a: 180 seconds

Collection interval of Record b: 300 seconds

■ Records collected by instance B for PFM - Agent for SQL Server

Collection interval of Record a: 360 seconds

Collection interval of Record b: 3,600 seconds

Calculate the maximum time for an idle timeout as follows:

1. Obtain the minimum record collection interval for each PFM - Agent.

   The minimum record collection interval for Instance A: 180 seconds

   The minimum record collection interval for Instance B: 360 seconds

2. Use the record collection intervals obtained in step 1 to determine the maximum record collection interval.

   180 seconds (Instance A) < 360 seconds (Instance B)

   Therefore, 360 seconds for Instance B is the maximum value.

3. Compare 360 + 60 (= 420) and 360.

   360 + 60 (=420) > 360

   Therefore, the maximum time for idle timeout is 420 seconds.

(2) If reconnection frequently occurs because the collection interval is too short

If the minimum record collection interval for all collected records is set as 60 seconds or more (for PFM - Agent), or 300 seconds or more (for PFM - RM), reconnection to PFM - Manager is performed each time records are collected.

Thus, if multiple PFM - Agents or PFM - RMs is connected, attempts to reconnect to PFM - Manager are repeatedly performed. This might cause a connection failure, such as events being sent from PFM - Agent to PFM - Manager (or from PFM - RM to PFM - Manager).

If this problem occurs, we recommend that you reduce the load on PFM - Manager. To reduce the load, perform the following setting on the PFM - Agent host (with a minimum record collection interval of at least 60 seconds) or the PFM - RM host (with a minimum record collection interval of at least 300 seconds).

1. Obtain the minimum record collection interval for the PFM - Agent host or PFM - RM host.

   (a) For each instance of PFM - Agent or PFM - RM, obtain the minimum record collection interval (in seconds) set for records collected by PFM - Agent or PFM - RM, or for records used to evaluate an alarm.

   (b) If there are several instances of the same PFM - Agent or PFM - RM product, compare the minimum values obtained in step (a) to determine the maximum

value. If there is only a single instance of the same PFM - Agent or PFM - RM product, use the value obtained in step (a).

2. Edit the `NS Cache Maintenance Time` label in the `Agent Collector x Section` of the `jpccomm.ini` file.

In the `Agent Collector x Section`, *x* represents the product ID specific to each PFM - Agent or PFM - RM. For details on the product ID for PFM - Agent or PFM - RM, see the list of identifiers described in each PFM - Agent or PFM - RM manual.

The `jpccomm.ini` file is stored in the following destination. The *environment-directory* indicates the directory specified when the `jpcconf ha setup` command was executed.

OS	Storage location for the jpccomm.ini file
In Windows:	• PFM - Agent or PFM - RM (for physical host use) *installation-folder*\jpccomm.ini • PFM - Agent (for logical host use) *environment-directory*\jp1pc\jpccomm.ini
In UNIX:	• PFM - Agent or PFM - RM (for physical host use) /opt/jp1pc/jpccomm.ini • PFM - Agent (for logical host use) *environment-directory*/jp1pc/jpccomm.ini

Edit the following sections in the `jpccomm.ini` file:

[Before change]

```
NS Cache Maintenance Time=70
```

[After change]

```
NS Cache Maintenance Time=minimum-collection-interval-calculated-in-Step-1 + 10
```

3. Restart PFM - Agent.

(a) Example of estimating the collection interval

The example described below assumes the following conditions:

■ The record collection interval for Instance A of host 1 (PFM - Agent for Oracle)

Record a: 180 seconds

Record b: 300 seconds

■ The record collection interval for Instance B of host 1 (PFM - Agent for Oracle)

Record a: 300 seconds

Record c: 600 second

- The record collection interval for Instance C of host 2 (PFM - Agent for SQL Server)

  Record a: 60 seconds

  Record b: 600 seconds

You can estimate and adjust the record collection interval for host 1 and host 2 by performing the following steps:

For host 1:

1. Use PFM - Agent for Oracle on host 1 to obtain the minimum record collection interval for each instance.

   Instance A: 180 seconds

   Instance B: 300 seconds

2. Because there are several instances, you must compare the record collection intervals to determine the maximum value.

   180 seconds (instance A) < 300 seconds (instance B)

   As a result, 300 seconds for Instance B is the maximum value for PFM - Agent for Oracle.

3. Add 10 to the maximum value obtained in step 2.

   300 + 10 = 310 seconds

4. The setting value for the `Agent Collector O Section` section in the `jpccomm.ini` file is as follows:

```
NS Cache Maintenance Time=310
```

For host 2:

For PFM - Agent for SQL Server on host 2, the minimum record collection interval is 60 seconds. Therefore, you do not need to modify the `Agent Collector Q Section` section in the `jpccomm.ini` file.

D. Kernel Parameter List

When you use Performance Management in a UNIX environment, adjust the kernel parameter of the OS to allocate the resources required for executing Performance Management. This section describes the kernel parameters requiring adjustment in PFM - Manager and PFM - Base for each OS.

Additionally, the kernel parameters should be adjusted for some PFM - Agents. For details on adjusting the kernel parameters for each PFM - Agent, see the description of kernel parameters in an appendix of each PFM - Agent manual.

D.1 Kernel parameters in HP-UX

(1) System resources required for PFM - Base

The following table describes the system resources required for PFM - Base.

System resources	Parameter	Estimate
File system	nfile	30
	nflocks	30
	ninode	30
	maxfiles	30
	maxfiles_lim	30
Shared memory	shmmni	--
	shmmax	--
	shmseg	--
Semaphore	semmni	--
	semmns	--
	semume	--
	semmnu	--
	semvmx	--
Process	nproc	3 + 2 x Number of commands to be executed simultaneously[#]
	maxuprc	--

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System resources	Parameter	Estimate
	`nkthread`	--
	`max_thread_proc`	--
Message queue	`msgmni`	--
	`msgmax`	--
	`msgmnb`	--
	`msgtql`	--
Memory	`maxdsiz`	2,048,000
	`maxssiz`	2,048,000

Legend:

--: Parameters not requiring adjustment

\#

The maximum number of commands to be executed simultaneously. For example, if you use the system in such a manner that the `jpctool db backup -direct` command is executed simultaneously on multiple agents, this value corresponds to the number of times the command is executed simultaneously.

(2) System resources required for using Store 2.0 as the Store database for PFM - Agent or PFM - RM

The following table describes the additional system resources required when using the Store 2.0 functionality supported from version 08-11 of PFM - Base and PFM - Manager.

System resources	Parameter	Estimate (additional requirement)
File system	`nfile`	Number of files opened by the Store service[#]
	`ninode`	
	`maxfiles`	
	`maxfiles_lim`	

\#

For details on how to estimate the number of files opened by the Store service, see *C.4(1)(d) Number of files opened by the Store service*. You can use the `ulimit`

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command to change the maximum number of files that can be opened at one time. If the estimate for the kernel parameters exceeds the upper limit for the system, use the `ulimit` command to re-specify a larger value.

D.2 Kernel parameters in Solaris

(1) System resources required for PFM - Manager

The following table describes the system resources required for PFM - Manager.

System resources	Parameter	Estimate
File system	`rlim_fd_cur`	330 + 100 x Number of products for PFM - Agent to be monitored[3]
	`rlim_fd_max`	330 + 100 x Number of products for PFM - Agent to be monitored[3]
Shared memory	`shmsys:shminfo_shmmni` `(project.max-shm-ids)`[1]	--
	`shmsys:shminfo_shmmax` `(project.max-shm-memory)`[1]	--
Semaphore	`semsys:seminfo_semmni` `(project.max-sem-ids)`[1]	--
	`semsys:seminfo_semmns`[2]	--
	`semsys:seminfo_semume`[2]	--
	`semsys:seminfo_semmnu`[2]	--
	`semsys:seminfo_semopm`	--
	`semsys:seminfo_semmsl`	--
Process	`maxuprc`	11 + 2 x Number of commands to be executed simultaneously[4]
	`max_nprocs`	11 + 2 x Number of commands to be executed simultaneously[4]
Message queue	`msgsys:msginfo_msgmni` `(project.max-msg-ids)`[1]	--
	`msgsys:msginfo_msgmax`[2]	--

System resources	Parameter	Estimate
	`msgsys:msginfo_msgmnb`	--
	`msgsys:msginfo_msgtql` `(process.max-msg-messages` `)`[1]	--
Memory	--	--

Legend:

--: Parameters not requiring adjustment

#1

Specify this parameter when using resource controls in Solaris 10 to adjust the available system resources.

#2

In Solaris 10, this parameter is not required.

#3

If instances are started, the number of instances is also added.

#4

The maximum number of commands to be executed simultaneously. For example, if you use the system in such a manner that the `jpctool db backup -direct` command is executed simultaneously on multiple agents, this value corresponds to the number of times the command is executed simultaneously.

(2) System resources required for PFM - Base

The following table describes the system resources required for PFM - Base.

System resources	Parameter	Estimate
File system	`rlim_fd_cur`	30
	`rlim_fd_max`	30
Shared memory	`shmsys:shminfo_shmmni` `(project.max-shm-ids)`[1]	--
	`shmsys:shminfo_shmmax` `(project.max-shm-memory)`[1]	--
Semaphore	`semsys:seminfo_semmni` `(project.max-sem-ids)`[1]	--

System resources	Parameter	Estimate
	`semsys:seminfo_semmns`[#2]	--
	`semsys:seminfo_semume`[#2]	--
	`semsys:seminfo_semmnu`[#2]	--
	`semsys:seminfo_semopm`	--
	`semsys:seminfo_semmsl`	--
Process	`maxuprc`	3 + 2 x Number of commands to be executed simultaneously[#3]
	`max_nprocs`	3 + 2 x Number of commands to be executed simultaneously[#3]
Message queue	`msgsys:msginfo_msgmni` `(project.max-msg-ids)`[#1]	--
	`msgsys:msginfo_msgmax`[#2]	--
	`msgsys:msginfo_msgmnb`	--
	`msgsys:msginfo_msgtql` `(process.max-msg-messages` `)`[#1]	--
Memory	--	--

Legend:

--: Parameters not requiring adjustment

#1

Specify this parameter when using resource controls in Solaris 10 to adjust the available system resources.

#2

In Solaris 10, this parameter is not required.

#3

The maximum number of commands to be executed simultaneously. For example, if you use the system in such a manner that the `jpctool db backup -direct` command is executed simultaneously on multiple agents, this value corresponds

to the number of times the command is executed simultaneously.

(3) System resources required for using Store 2.0 as the Store database for PFM - Agent or PFM - RM

The following table describes the additional system resources required when using the Store 2.0 functionality supported from version 08-11 of PFM - Base and PFM - Manager.

System resources	Parameter	Estimate (additional requirement)
File system	`rlim_fd_cur`	Number of files opened by the Store service[#]
	`rlim_fd_max`	

\#

For details on how to estimate the number of files opened by the Store service, see *C.4(1)(d) Number of files opened by the Store service*. You can use the `ulimit` command to change the maximum number of files that can be opened at one time. If the estimate for the kernel parameters exceeds the upper limit for the system, use the `ulimit` command to re-specify a larger value.

D.3 Kernel parameters in AIX

(1) System resources required for PFM - Manager

The following table describes the system resources required for PFM - Manager.

System resources	Parameter	Estimate
File system	`nofiles`	330 + 100 x Number of products for PFM - Agent to be monitored[#1]
	`nofiles_hard`	330 + 100 x Number of products for PFM - Agent to be monitored[#1]
Shared memory	`shmmni`	--
	`shmmax`	--
	`shmmin`	--
Semaphore	`semmni`	--
	`semvmx`	--
	`semume`	--

System resources	Parameter	Estimate
	`semopm`	--
Process	`maxuproc`	11 + 2 x Number of commands to be executed simultaneously[#2]
Message queue	`msgmni`	--
	`msgmax`	--
	`msgmnm`	--
Memory	`data_hard`	104,857,600
	`stack_hard`	134,217,728

Legend:

--: Parameters not requiring adjustment

#1

If instances are started, the number of instances is also added.

#2

The maximum number of commands to be executed simultaneously. For example, if you use the system in such a manner that the `jpctool db backup -direct` command is executed simultaneously on multiple agents, this value corresponds to the number of times the command is executed simultaneously.

(2) System resources required for PFM - Base

The following table describes the system resources required for PFM - Base.

System resources	Parameter	Estimate
File system	`nofiles`	30
	`nofiles_hard`	30
Shared memory	`shmmni`	--
	`shmmax`	--
	`shmmin`	--
Semaphore	`semmni`	--
	`semvmx`	--
	`semume`	--

System resources	Parameter	Estimate
	`semopm`	--
Process	`maxuprc`	3 + 2 x Number of commands to be executed simultaneously[#]
Message queue	`msgmni`	--
	`msgmax`	--
	`msgmnm`	--
Memory	`data_hard`	2,560,000
	`stack_hard`	2,560,000

Legend:

--: Parameters not requiring adjustment

[#]

The maximum number of commands to be executed simultaneously. For example, if you use the system in such a manner that the `jpctool db backup -direct` command is executed simultaneously on multiple agents, this value corresponds to the number of times the command is executed simultaneously.

(3) System resources required for using Store 2.0 as the Store database for PFM - Agent or PFM - RM

The following table describes the additional system resources required when using the Store 2.0 functionality supported from version 08-11 of PFM - Base and PFM - Manager.

System resources	Parameter	Estimate (additional requirement)
File system	`nofiles`	Number of files opened by the Store service[#]
	`nofiles_hard`	

[#]

For details on how to estimate the number of files opened by the Store service, see *C.4(1)(d) Number of files opened by the Store service*. You can use the `ulimit` command to change the maximum number of files that can be opened at one time. If the estimate for the kernel parameters exceeds the upper limit for the system, use the `ulimit` command to re-specify a larger value.

D.4 Kernel parameters in Linux

(1) System resources required for PFM - Manager

The following table describes the system resources required for PFM - Manager.

System resources	Parameter	Estimate
File system	FILE-MAX	330 + 100 x Number of PFM - Agent products to be monitored[#]
Shared memory	SHMMNI	--
	SHMALL	--
	SHMMAX	--
Semaphore	SEMMNI	--
	SEMMNS	--
Process	--	--
Message queue	MSGMNI	--
	MSGMAX	--
Memory	--	--

Legend:

--: Parameters not requiring adjustment

#

If instances are started, the number of instances is also added.

(2) System resources required for PFM - Base

The following table describes the system resources required for PFM - Base.

System resources	Parameter	Estimate
File system	FILE-MAX	30
Shared memory	SHMMNI	--
	SHMALL	--
	SHMMAX	--
Semaphore	SEMMNI	--
	SEMMNS	--

System resources	Parameter	Estimate
Process	--	--
Message queue	MSGMNI	--
	MSGMAX	--
Memory	--	--

Legend:

--: Parameters not requiring adjustment

(3) System resources required for PFM - Web Console

The following table describes the system resources required for PFM - Web Console.

System resources	Parameter	Estimate
File system	FILE-MAX	32
Shared memory	SHMMNI	--
	SHMALL	8,308,800
	SHMMAX	--
Semaphore	SEMMNI	--
	SEMMNS	--
Process	--	--
Message queue	MSGMNI	--
	MSGMAX	--
Memory	--	--

Legend:

--: Parameters not requiring adjustment

(4) System resources required for using Store 2.0 as the Store database for PFM - Agent or PFM - RM

The following table describes the additional system resources required when using the Store 2.0 functionality supported from version 08-11 of PFM - Base and PFM - Manager.

System resources	Parameter	Estimate (additional requirement)
File system	FILE-MAX	Number of files opened by the Store service[#]

\#

For details on how to estimate the number of files opened by the Store service, see *C.4(1)(d) Number of files opened by the Store service*. You can use the `ulimit` command to change the maximum number of files that can be opened at one time. If the estimate for the kernel parameters exceeds the upper limit for the system, use the `ulimit` command to re-specify a larger value.

E. Migration Steps and Notes on Migration

This section describes the migration from old versions of Performance Management (version upgrades from 07-10 or earlier to 09-00 or later).

E.1 Changing the product configuration for Performance Management

The differences between Performance Management product configurations of version 09-00 or later and 07-10 or earlier are described below.

(1) Product configuration for 09-00 or later of Performance Management

Version 09-00 or later of Performance Management consists of five products, PFM - Manager, PFM - Web Console, PFM - Base, PFM - Agent, and PFM - RM.

Figure E-1: Product configuration for version 09-00 or later of Performance Management
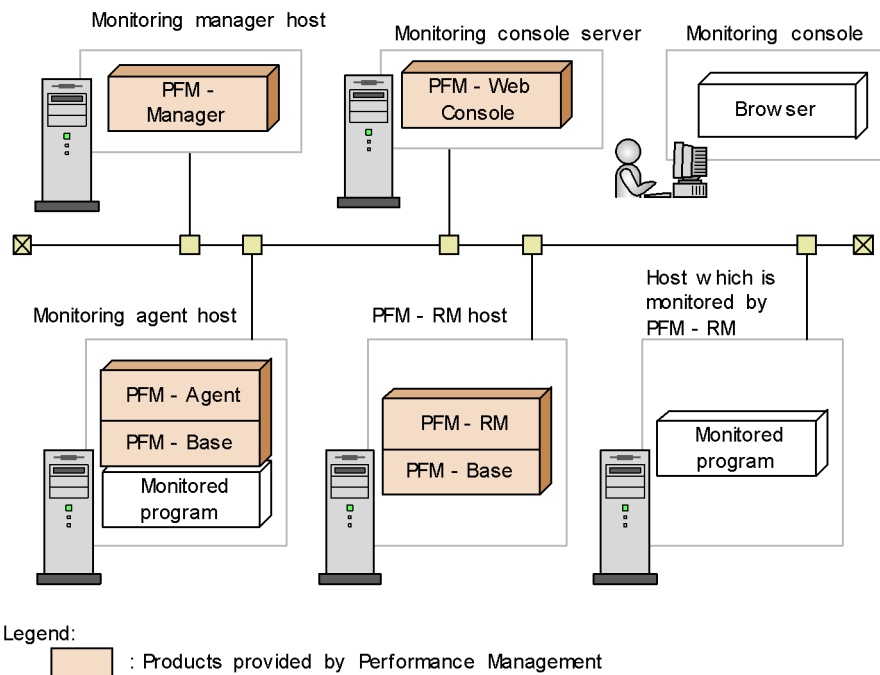
PFM - Base is a prerequisite product for PFM - Agent and PFM - RM. PFM - Agent and PFM - RM cannot be installed unless PFM - Base is installed. However, there is no need to install PFM - Base if PFM - Manager and PFM - Agent or PFM - RM are

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installed on the same host. You cannot install PFM - Manager and PFM - Base on the same host because they are mutually exclusive products.

PFM - RM is the product that performs remote monitoring. You can use a single PFM - RM to monitor multiple targeted programs. You do not need to have a PFM - RM for each target program to be monitored.

(2) Product configuration for 07-10 or earlier of Performance Management

Version 07-10 or earlier of Performance Management consists of three products, PFM - Manager, PFM - View, and PFM - Agent.

Figure E-2: Product configuration for version 07-10 or earlier of Performance Management
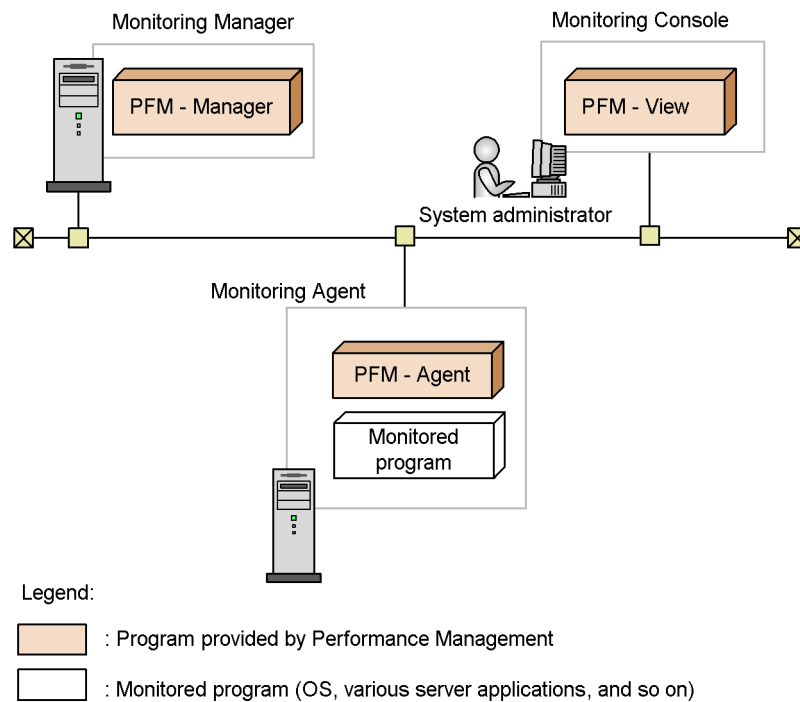
E.2 Relation between 08-00 or later of PFM - Web Console and 07-00 or earlier of PFM - View

Version 08-00 or later of PFM - Web Console is a different product from 07-00 or earlier of PFM - View. Version 08-00 or later of the PFM - View product does not exist.

PFM - Web Console can be installed on the same host as the other Performance Management programs, but Hitachi recommends that it be installed on a different host from PFM - Manager and PFM - Agent to take the load off the computer. However,

when they are installed on the same host, there is no installation order or mutually exclusive products between PFM - Web Console and other Performance Management programs.

E.3 Installation order during migration from 07-10 or earlier to 09-00 or later

This section describes the installation order when upgrading Performance Management program from 07-10 or earlier to 09-00 or later. The uninstallation order is in the reverse order of installation.

(1) When migrating to PFM - Manager to 09-00 or later

(a) When migrating to PFM - Manager to 09-00 or later
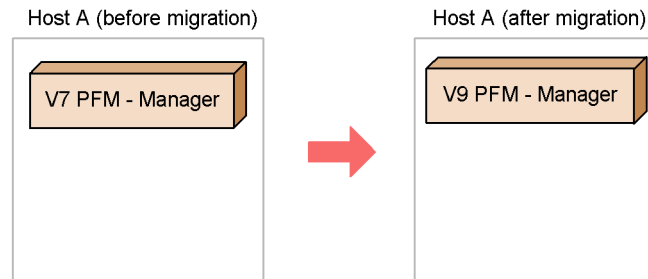
Host A (before migration)

V7 PFM - Manager

Host A (after migration)

V9 PFM - Manager

Legend:
    V7: 07-10 or earlier
    V9: 09-00 or later

Installation order

1. Perform an overwrite installation of 09-00 or later of PFM - Manager over the previous installation.

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(b) When migrating only PFM - Manager to 09-00 or later in an environment where 07-10 or earlier of PFM - Manager and PFM - Agent have been installed on the same host

Host A (before migration)   Host A (after migration)

| V7 PFM - Manager | ➡ | V9 PFM - Manager |

| V7 PFM - Agent | | V7 PFM - Agent |

Legend:
    V7: 07-10 or earlier
    V9: 09-00 or later

Installation order

1. Perform an overwrite installation of 08-00 or later of PFM - Manager over the previous installation.

Note:

In this configuration, when uninstalling PFM - Manager, also uninstall 07-00 or earlier of PFM - Agent.

(2) When migrating to PFM - Agent to 09-00 or later

(a) When migrating all of one or more PFM - Agents to 09-00 or later

Host A (before migration)   Host A (after migration)

| V7 PFM - Agent | ➡ | V9 PFM - Agent |

| V7 PFM - Agent | | V9 PFM - Agent |

| V9 PFM - Base |

Legend:
    V7: 07-00 or earlier
    V9: 09-00 or later

Installation order

1. Perform a new installation of 09-00 or later of PFM - Base.

2. Perform an overwrite installation of 09-00 or later of PFM - Agent over the previous installation.

Note:

You need only install one PFM - Base even if multiple PFM - Agents are installed on a single host.

Additionally, there is no installation order between PFM - Agents.

(b) When migrating PFM - Manager and PFM - Agent to 09-00 or later in the environment where 07-10 or earlier of PFM - Manager and PFM - Agent have been installed on the same host

Host A (before migration)

V7 PFM - Manager

V7 PFM - Agent

Host A (after migration)

V9 PFM - Manager

V9 PFM - Agent
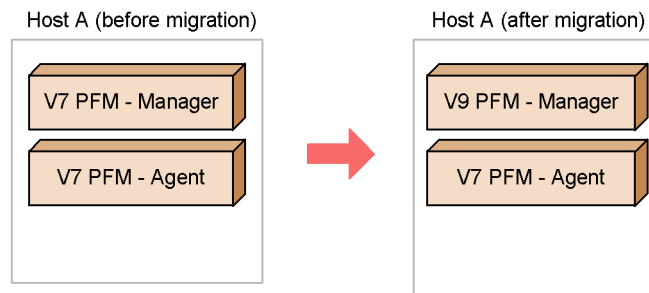
Legend:
V7: 07-10 or earlier
V9: 09-00 or later

Installation order

1. Perform an overwrite installation of 09-00 or later of PFM - Manager over the previous installation.

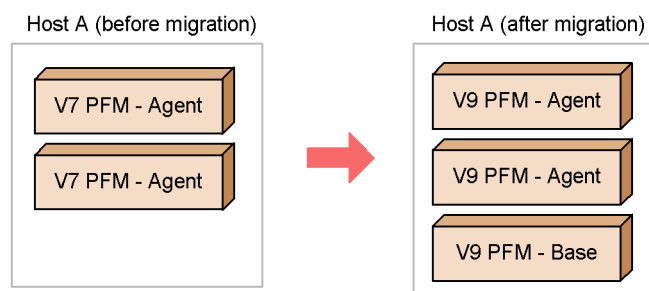2. Perform an overwrite installation of 09-00 or later of PFM - Agent over the previous installation.

Note:

When you install PFM - Manager and PFM - Agent on the same host, there is no need to install PFM - Base.

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(c) When migrating only parts of PFM - Agent to 09-00 or later in an environment where 07-00 or earlier of multiple PFM - Agents have been installed on a single host

Host A (before migration)   Host A (after migration)

```
┌──────────────────────┐          ┌──────────────────────┐
│  ┌────────────────┐  │          │  ┌────────────────┐  │
│  │ V7 PFM - Agent │  │          │  │ V7 PFM - Agent │  │
│  └────────────────┘  │   ➤      │  └────────────────┘  │
│  ┌────────────────┐  │          │  ┌────────────────┐  │
│  │ V7 PFM - Agent │  │          │  │ V9 PFM - Agent │  │
│  └────────────────┘  │          │  └────────────────┘  │
│                      │          │  ┌────────────────┐  │
│                      │          │  │ V9 PFM - Base  │  │
│                      │          │  └────────────────┘  │
└──────────────────────┘          └──────────────────────┘
```

Legend:
V7: 07-00 or earlier
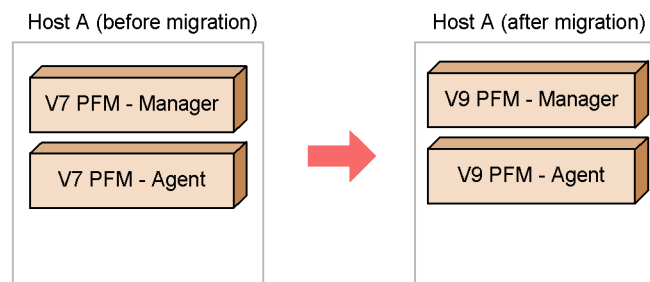V9: 09-00 or later

Installation order

1. Perform a new installation of 09-00 or later of PFM - Base.

2. Perform an overwrite installation of 09-00 or later of PFM - Agent over the previous PFM - Agent to be upgraded.

Note:

When uninstalling PFM - Base in this configuration, also uninstall 07-00 or earlier and 09-00 or later of PFM - Agent.

(3) When migrating to PFM - View to 09-00 or later

(a) When migrating 07-00 or earlier of PFM - View to 09-00 or later of PFM - Web Console

Host A (before migration)   Host A (after migration)   Monitoring console

```
┌──────────────────┐      ┌──────────────────┐      ┌──────────────────┐
│ ┌──────────────┐ │      │ ┌──────────────┐ │      │ ┌──────────────┐ │
│ │ V7 PFM - View│ │  ➤   │ │ V9 PFM - Web │ │      │ │   Browser    │ │
│ └──────────────┘ │      │ │   Console    │ │      │ └──────────────┘ │
│                  │      │ └──────────────┘ │      │                  │
└──────────────────┘      └──────────────────┘      └──────────────────┘
```

Legend:
V7: 07-10 or earlier
V9: 09-00 or later

Installation order

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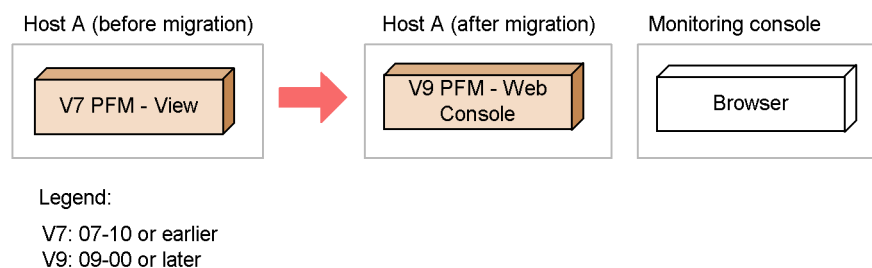
1. Perform a new installation of 09-00 or later of PFM - Web Console.

Note:

When you use only PFM - Web Console as a monitoring console environment, you are permitted to uninstall 07-00 or earlier of PFM - View.

(b) When migrating the ODBC or NNM linkage function for 07-00 or earlier of PFM - View to 09-00 or later

You can use the following two methods for this migration:

■ Migrate to 09-00 or later of PFM - Manager:

Host A (before migration)

V7 PFM - View#
(ODBC Linkage or
NNM Linkage)

V7 PFM - Manager

Host A (after migration)

V9 PFM - Manager
(ODBC Linkage or
NNM Linkage)

Legend:
V7: 07-10 or earlier
V9: 09-00 or later

\#
PFM - View is 07-00 or earlier

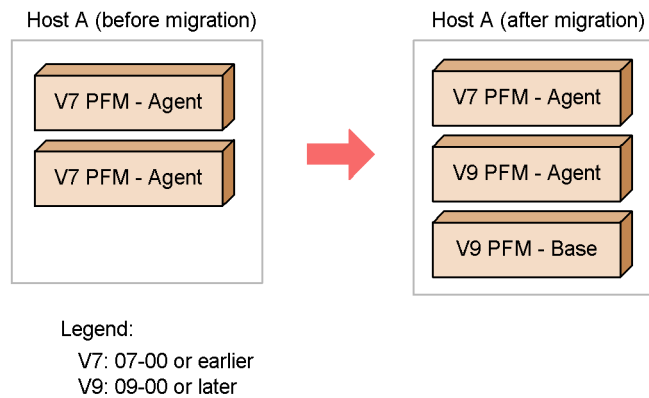Installation order

1. Perform an overwrite installation of 09-00 or later of PFM - Manager over the previous installation.

■ Migrate to 08-00 or later of PFM - Base:
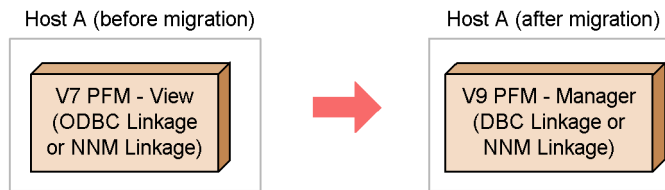
Host A (before migration)   Host A (after migration)

| V7 PFM - View (ODBC Linkage or NNM Linkage) | ➡ | V9 PFM - Manager (DBC Linkage or NNM Linkage) |

Legend:

V7: 07-10 or earlier
V9: 09-00 or later

Installation order

 1. Perform a new installation of 09-00 or later of PFM - Base.
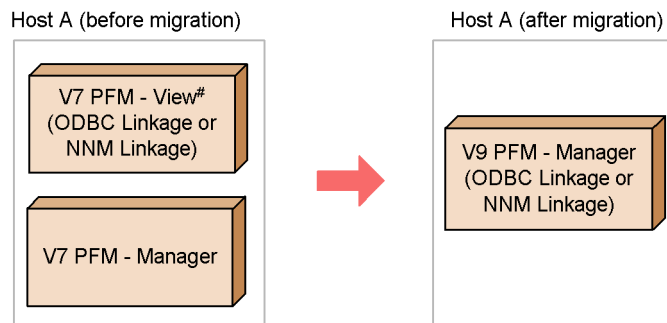
Note:

When you use only PFM - Web Console in the monitoring console environment, you are permitted to uninstall 07-00 or earlier of PFM - View.

(4) Configurations of Performance Management that must not be combined

Performance Management cannot be used in the following configuration.

■ Migrating only PFM - Agent to 09-00 or later in the environment where 07-10 or earlier of PFM - Manager and PFM - Agent have been installed on the same host.

Host A (before migration)   Host A (before migration)

| V7 PFM - Manager | | V7 PFM - Manager |
| V7 PFM - Agent | ➡ | V9 PFM - Agent |
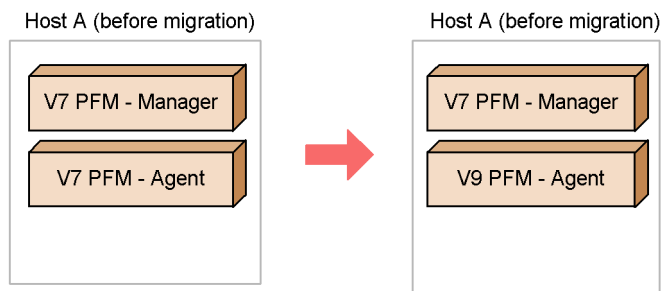
Legend:

V7: 07-10 or earlier
V9: 09-00 or later

Note:

When PFM - Manager and PFM - Agent are installed on the same host, the

prerequisite product of PFM - Agent of 09-00 or later becomes PFM - Manager 08-00 or later. As a result, if you are using PFM - Agent 09-00 or later, you must use PFM - Manager 08-00 or later. However, PFM - Base cannot be installed in this environment, because PFM - Manager and PFM - Base are mutually exclusive regardless of version.

E.4 How to upgrade Performance Management programs

To upgrade Performance Management programs, perform overwrite installations of the Performance Management programs.

To upgrade Performance Management programs:

1. If there is a Performance Management linkage function, stop all linkage functions.

   For details on how to stop a linkage function, see the description of each linkage function in the appropriate chapter.

2. Stop all services of Performance Management programs on the local host.

   For details on how to do this, see the chapter in the *Job Management Partner 1/ Performance Management User's Guide* that describes how to start and stop Performance Management.

3. Perform an overwrite installation of Performance Management programs over the previous ones.

4. Set up Performance Management to run.

5. Restart the Performance Management linkage function.

Hint:

> If PFM - Manager is running on a cluster environment when you perform the upgrade, you must place a shared disk online on either an executing or a standby node. If PFM - Web Console is running on a cluster environment when you perform the upgrade, you do not have to place a shared disk online.

For details on installation, see *5. Installation and Setup (in Windows)* or *6. Installation and Setup (in UNIX)*.

E.5 Notes on migration

■ If you perform a new installation of a Performance Management program, the product name display function is available by default. If you upgrade from 09-00 or later, the product name display function inherits the existing settings. If you upgrade from 08-11 or earlier to 09-00 or later, the product name display function is disabled. To enable the product name display function, see *5.4.9 Configuring the product name display function* (in Windows) or *6.4.8 Configuring the product name display function* (in UNIX).

- PFM - Web Console 09-00 or later does not support Mozilla as the monitoring console browser. If the monitoring console runs on UNIX, use Firefox 2 or 3 as the browser.

- For 09-00 or later, there are prerequisite patches for Solaris that must be applied. If these patches are not applied, the Performance Management programs will not start. For the prerequisite patches that you must apply, see the Release Notes.

- When upgrading, do not uninstall old versions of Performance Management programs. If you uninstall them, you cannot use the report definition, alarm definition, performance data and other information created in the old version, because they will be deleted during the uninstallation.

- When 08-00 or later of PFM - Manager has been installed with 07-10 or earlier of Performance Management programs, before uninstalling 08-00 or later of PFM-Manager, you must first uninstall the Performance Management programs other than PFM - Web Console.

- When 08-00 or later of PFM- Base has been installed with 07-10 or earlier of Performance Management programs, before uninstalling 08-00 or later of PFM - Base, you must first uninstall the Performance Management programs other than PFM - Web Console.

- If you perform an overwrite installation of Performance Management programs over existing ones, the following items are automatically updated:

  - Store database files for Agent Store and Remote Monitor Store services

  - The `ini` file

  - The PFM - Agent or PFM - RM instance environment in which a single PFM - Agent or PFM - RM monitors an application program that can start multiple services on a single host

- If you perform a new installation of a Performance Management program, the status management function is available by default. However, if you perform a version upgrade installation from 07-10 to 08-00 or later, the settings status for the status management function remains unchanged.

- When you install version 08-00 or later of a Performance Management program, the setting for the status management function is as follows:

  - After a new installation of version 08-00 or later of PFM - Manager or PFM - Base on a host that does not already have a Performance Management program installed

    Status management function setting: Enabled

  - Other cases[#]

    Status management function setting: Remains the same

The following fall under the "other cases" category:

- Upgrading version 06-70 to 07-10 of PFM - Manager to version 08-00 or later

- Performing a new installation of version 08-00 or later of PFM - Manager or PFM - Base in an environment where version 06-70 to 07-00 of PFM - Agent is installed

The setting status in this case becomes *invalid*, because versions 06-70 to 07-10 of Performance Management do not have the status management function.

- Note that the location of the executable files for the Store service (`jpcsto.exe` and `stpqlpr.exe` in Windows, `jpcsto` and `stpqlpr` in UNIX) has been changed in versions 08-00 and later of the Performance Management programs. When you upgrade PFM - Manager and PFM - Agent to version 08-00 or later, the executable files for the Store service will be deleted from their former location.

F. Version Compatibility

This section describes the compatibility among versions of the system configuration and of data models when upgrading Performance Management programs (PFM - Manager and PFM - Agent) from 07-10 to 08-00 or later.

However, the version of PFM - Base corresponding to PFM - Agent depends on each PFM - Agent. For the version compatibility of PFM - Base, verify each PFM - Agent.

F.1 Version compatibility of the system configuration

This section describes the system configuration of Performance Management to be combined when versions are mixed in the system configuration of Performance Management.

(1) When PFM - Manager is 09-00 or later

With system configurations that use PFM - Manager 09-00 or later, you can monitor all versions of PFM - Agent and PFM - RM. However, PFM - Web Console 08-00 or later[#] is required as a monitoring console server. Likewise, you cannot connect to certain versions of PFM - View.

#:

When operating PFM - RM, see *F.4 Version compatibility of system configurations when operating PFM - RM*.

In regards to agent events, events beginning with the message text KAV indicate the events issued when PFM - Base 09-00 or later is installed on an event-issuing agent host.

If you want to use the following functions, PFM - Web Console 09-00 or later must be installed on the same host as PFM - Manager or PFM - Base.

- Use the jpcspm command to start or stop the PFM - Web Console services

- Use the jpctool service list command to display the operating status of PFM - Web Console services

(2) When PFM - Manager is 08-00 or later and 08-11 or earlier

For a system configuration using PFM - Manager 08-00 or later and 08-11 or earlier, you can monitor all versions of PFM - Agent. Additionally, 08-00 or later of PFM - Web Console or 07-00 of PFM - View is required as a monitoring console. Version 08-00 or later of PFM - Manager cannot connect to 06-70 or earlier of PFM - View. The version available depends on the function you want to use.

- PFM - View does not support the health check function. This function is supported by PFM - Web Console 08-11 or later. For details on the available versions, see the chapter in the *Job Management Partner 1/Performance Management User's Guide* that describes how to detect problems in Performance Management.

- PFM - View does not support the distribution of agent-specific properties as a batch. This function is supported by PFM - Web Console 08-11 or later.

- The functionality for binding multiple alarm tables is supported by PFM - Manager 08-11 or later and PFM - Web Console 08-11 or later. This function is also supported by PFM - Agent 08-00 or later, and PFM - Base 08-11 or later on the same host as PFM - Agent.

When PFM - Agent is used in a Linux environment where UTF-8 encoding is specified in the LANG environment variable, you can only use double-byte characters in the following items if the connection-target PFM - Manager for the PFM - Agent and the PFM - Base on the same host as the PFM - Agent are version 08-11 or later.

- Settings in alarm tables and alarm definitions

- Filter condition expressions included in report definitions

- Conditional expressions for field-level drilldown reports included in report definitions

- LOGIF conditional expressions for specifying the collection conditions for performance data

- Conditional expressions used by the ODBC driver to extract performance data

With version 08-00 of PFM - Manager or PFM - Base, use only 7-bit ASCII characters. Other characters might not display correctly in PFM - Web Console or PFM - View, or might cause the programs to not work correctly.

The following figure illustrates the system configuration that can be connected when PFM - Manager is 08-00 or later and 08-50 or earlier.
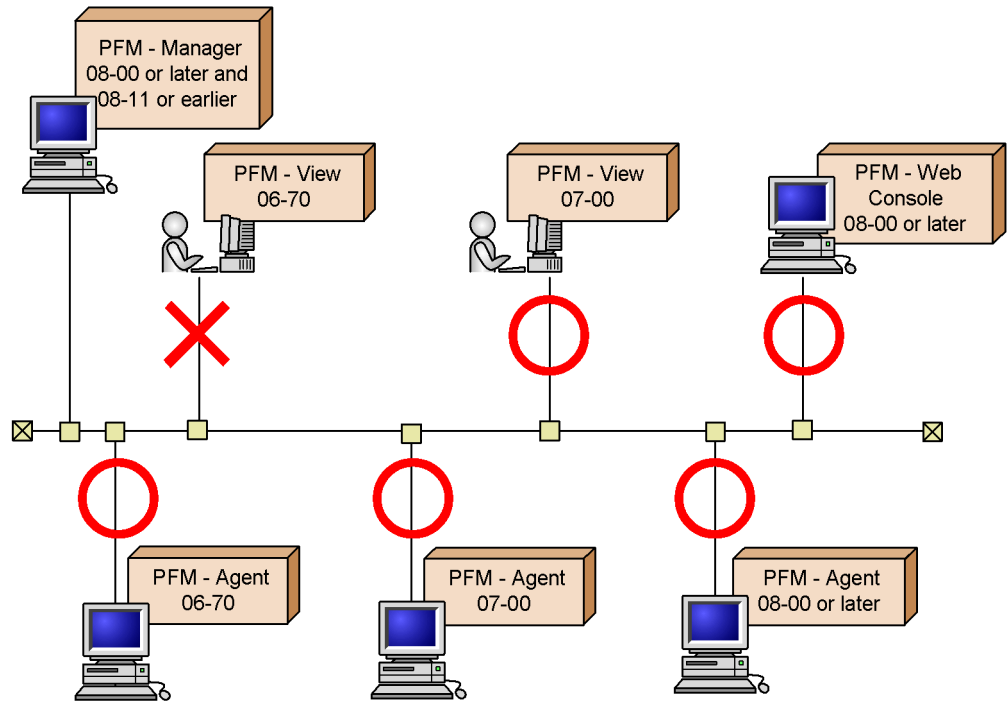
(3) When PFM - Manager is 07-00 or 07-10

In a system configuration using 07-00 or 07-10 of PFM - Manager, 07-00 or earlier of PFM - Agent can be monitored. 08-00 or later of PFM - Agent cannot be monitored.

Additionally, 07-00 of PFM - View is required as a monitoring console. Version 07-00 or later of PFM - Manager cannot connect to 08-00 or later of PFM - Web Console.

The following figure shows the system configurations that can be connected when PFM - Manager is 07-00 or 07-10.
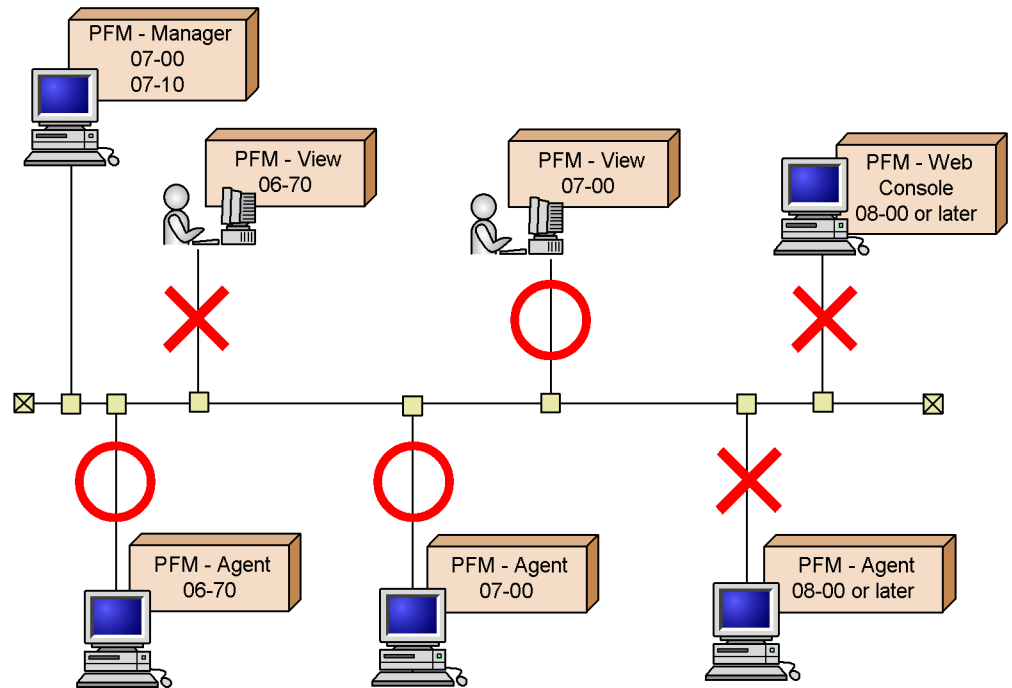
(4) When PFM - Manager is 06-70

In a system configuration using 06-70 of PFM - Manager, only 06-70 of PFM - Agent can be monitored. Version 07-00 or later of PFM - Agent cannot be monitored.

Additionally, 07-00 or earlier of PFM - View is required. Version 06-70 or later of PFM - Manager cannot connect to 08-00 or later of PFM - Web Console.

The following figure shows the system configurations that can be connected when PFM - Manager is 06-70.
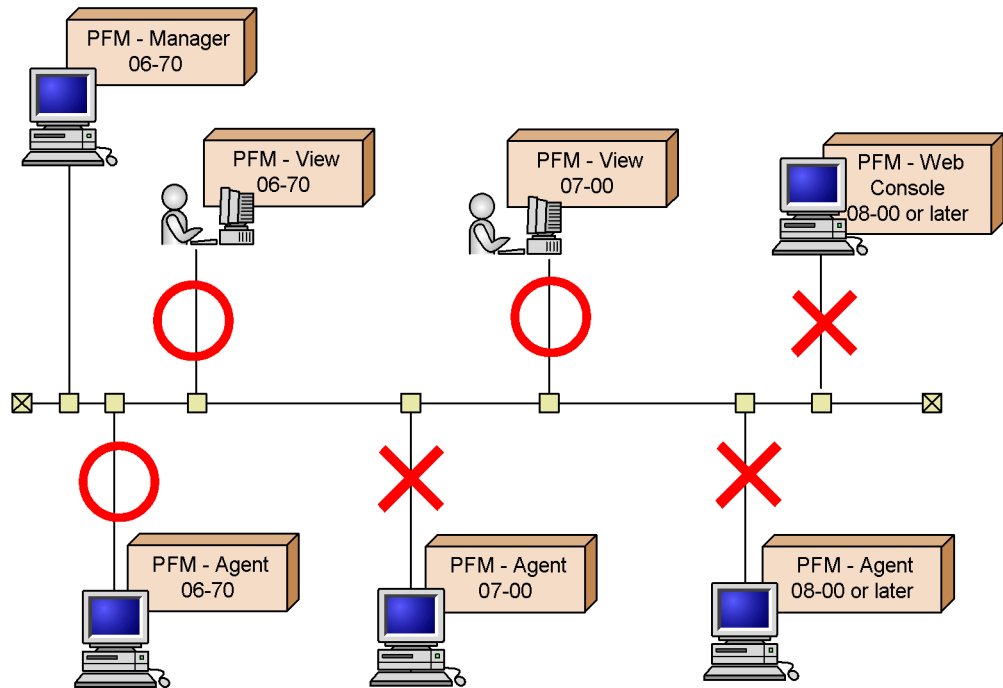
F.2 Compatibility among data model versions

In PFM - Agent, data model versions as well as product versions exist.

When PFM - Agent is upgraded, the data model may be upgraded as well. The report definitions and alarm definitions defined in the old version can be used in a new data model version, because the data model ensures forward compatibility.

For details on data model versions for an Agent, see the description of version compatibility in an appendix of each PFM - Agent manual.

The following describes version compatibility using the example when the version 4.0 of the data model mixes with version 6.0 of the data model.

(1) When displaying reports

An Agent defined in data model version 4.0 or 6.0 can display a report defined in data model version 4.0. Only an Agent defined in data model version 6.0 can display a report defined in data model version 6.0.
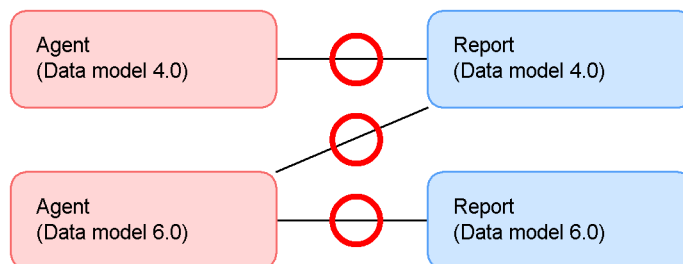
(2) When binding the alarm table

An Agent defined in data model version 4.0 or 6.0 can display an alarm table defined in data model version 4.0. Only an Agent defined in data model version 6.0 can display an alarm table defined in data model version 6.0.

(3) When associating a drilldown report with a report

An Agent defined in data model version 4.0 or 6.0 can display a drilldown report defined in data model version 4.0. Only an Agent defined in data model version 6.0 can display a drilldown report defined in data model version 6.0.

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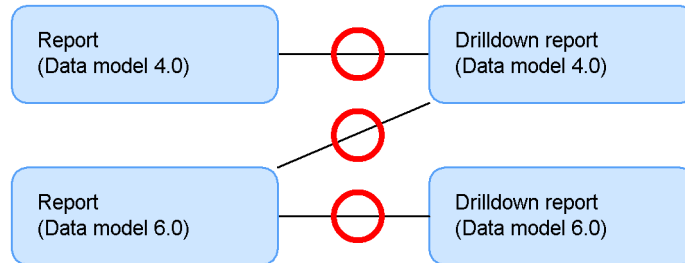
(4) When associating a report with an alarm

An alarm defined in data model version 4.0 or 6.0 can be associated with a report defined in data model version 4.0. Only an alarm defined in data model version 6.0 can be associated with a report defined in data model version 6.0.
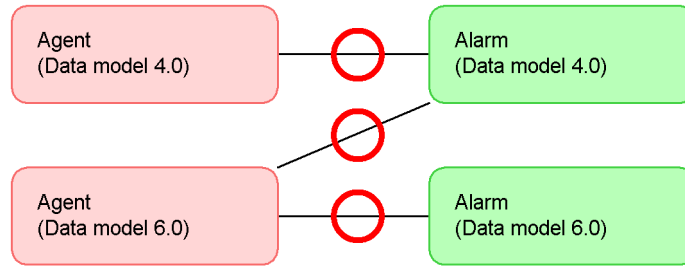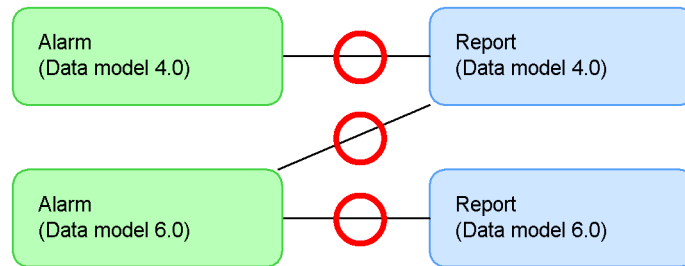

F.3 Displaying data models in PFM - Web Console

If PFM - Agent contains multiple versions of data models, those versions are displayed in the PFM - Web Console window. For example, multiple versions of data models are displayed by the alarm monitoring template, the window used to define reports, and the window used to define alarms.

For details on versions of data models for an Agent, see the description of version compatibility in an appendix of each PFM - Agent manual.

F.4 Version compatibility of system configurations when operating PFM - RM

When you operate PFM - RM, the PFM - Manager, PFM - Web Console, and PFM - Base version must all be 09-00 or later. Likewise, you cannot use the `jpcctrl` command to perform operations for remote agents and group agents from hosts using PFM - Manager or PFM - Base version earlier than 09-00.

The following figure illustrates the version compatibility of the system configuration used when operating PFM - RM.

Figure F-1: Version compatibility of the system configuration used when operating PFM - RM
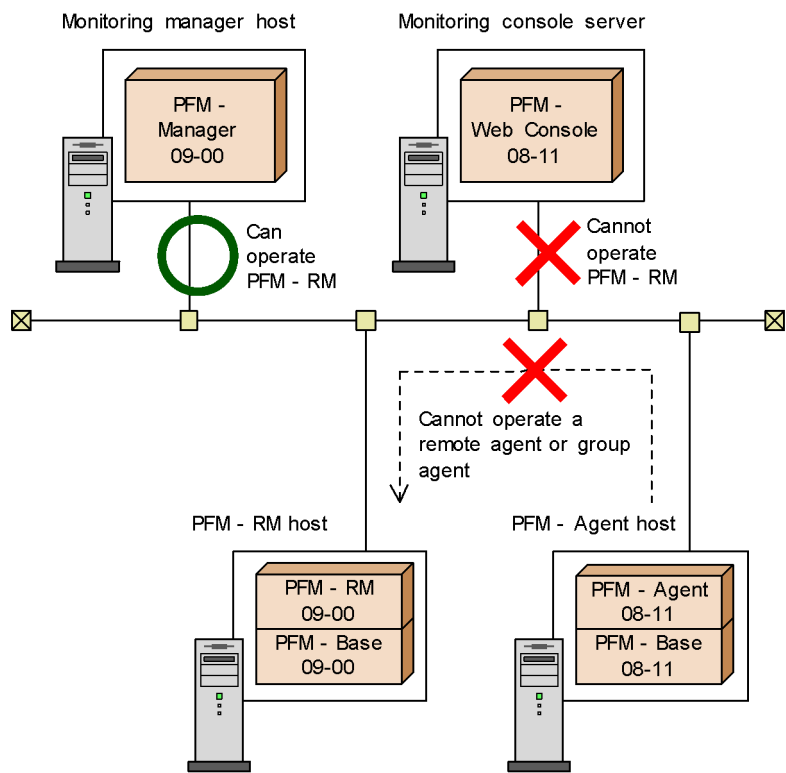
Legend:
- - ⟩ : Agent operations performed by using the jpcctrl command

G. Outputting Action Log Data

Action log data is history information output in cooperation with the alarm function, when an aspect of the system such as the system load exceeds a threshold.

For example, when an alarm is generated in response to a threshold being exceeded in the system, information about which service generated the alarm, and at what time, is output to the action log.

Action log data can be output in version 08-11 or later of PFM - Manager or PFM - Base. The action log is a text file in CSV format. The information in the action log can be used for operation analysis by saving the file periodically and processing it using spreadsheet software.

Action log data can be output by enabling a setting in the `jpccomm.ini` file. The following describes the content output in action logs, and how to configure Performance Management to output action logs.

G.1 Types of events output to the action log

The following table describes the types of events output to the action log, and what causes Performance Management to output each type of event. The event type is an ID used to categorize the events output to the action log.

Table G-1: Types of events output to the action log

Event type	Description	Time when event is output by Performance Management
StartStop	Indicates that software has started or stopped.	• When Performance Management services are started and stopped • When stand-alone mode begins and ends
Authentication	Indicates that an attempt was made by a system administrator or user to connect or pass authentication, and the attempt succeeded or failed.	When login authentication results are received from PFM - Web Console (for PFM users and JP1 users)
ConfigurationAccess	Indicates that a system administrator has executed a permitted operation, and the operation succeeded or failed.	• When an alarm or action definition is created, updated, or deleted • When an alarm is bound or unbound • When a PFM use is added, deleted, or updated

Event type	Description	Time when event is output by Performance Management
ExternalService	Indicates the result of communication between a JP1 product and an external service.	• PFM - Agent or PFM - RM When the status of the connection to PFM - Manager changes • PFM - Manager When PFM - Agent (or PFM - RM) is connected or disconnected
AnomalyEvent	Indicates that an error has occurred such as an aspect of the system exceeding a threshold.	When an alarm is generated
	Indicates that abnormal communication has occurred.	
ManagementAction	Indicates that a program has executed an important action. This event type indicates that an action is triggered by an event of other category.	When an automated action is executed

G.2 Format for saving action log files

This section describes the file format used when saving action logs.

Action log data is output to a default file (the current output file). When the log file becomes full, it is then saved as a separate file (a shift file). The following describes the manner in which switching takes place between these files.

1. Action log data is output sequentially to the current output file `jpcaudit.log`.

2. When the current output file becomes full, the action log data in the file is saved to a shift file.

   Shift files have the same name as the current output file, but with a number appended onto the end of them. When a new shift file is created, the number on the end of the shift file names are all increased by one. Essentially, the higher the number, the older the file is.

   Example:

   When the current output file `jpcaudit.log` becomes full, its contents are stored in a shift file `jpcaudit1.log`.

   When the current output file fills again, its logs are shifted to the file `jpcaudit1.log`, and the existing shift file `jpcaudit1.log` is renamed to `jpcaudit2.log`.

   When the number of log files exceeds the maximum specified in the `jpccomm.ini` file, the oldest log files are deleted first.

3. The current output file is cleared, and the system resumes writing action log data to the file.

The settings that determine whether action logs are output, the location to which the logs are output, and the maximum number of log files that can be made are in the jpccomm.ini file. For details on how to enter these settings in the jpccomm.ini file, see *G.4 Settings for outputting action log data*.

G.3 Format of output action log data

The action logs in Performance Management provide information related to system monitoring functions. Action logs are output to a single file on each host (physical host and logical host). The host to which the action log data is output depends on the action that was performed.

*   Event resulting from service execution: the action log data is output to the host where the service was executed
*   Event resulting from command execution: the action log data is output to the host where the command was executed

The following describes the output format, output destination, and output items of an action log.

(1) Output format

```
CALFHM x.x,output-item-1=value-1, output-item-2=value-2,...,output-item-n=value-n
```

(2) Output destination

On physical hosts

*   In Windows

    installation-folder\auditlog\

*   In UNIX

    /opt/jp1pc/auditlog/

On logical hosts

*   In Windows

    environment-directory\jp1pc\auditlog\

*   In UNIX

    environment-directory/jp1pc/auditlog/

You can change the output destination for action logs in the jpccomm.ini file. For details on how to change this setting in the jpccomm.ini file, see *G.4 Settings for outputting action log data*.

(3) *Output items*

The items in an action log fall into the following two categories:

- Common output items

  Items common to all JP1 products that output action log data.

- Fixed output items

  Optional items each JP1 product can output in action log data.

(a) Common output items

The following table lists the values output as common output items, and the content of each item.

Table G-2: Common output items in action logs

No.	Output item		Value	Content
	Item name	Output attribute name		
1	Common specification identifier	--	CALFHM	An ID indicating that the information is formatted as an action log
2	Common specification revision number	--	$x.x$	The revision number used to manage the action log
3	Sequence number	seqnum	*sequence-number*	The sequence number of the action log record
4	Message ID	msgid	KAVE*xxxxx-x*	The message ID from the product
5	Date and time	date	$YYYY\text{-}MM\text{-}DD$T$hh\!:\!mm\!:\!ss.sssTZD$[#]	The time (including time zone) when the action log was output
6	Generated program name	progid	JP1PFM	The name of the program where the event occurred
7	Generated component name	compid	*service-ID*	The name of the component where the event occurred

No.	Output item		Value	Content
	Item name	**Output attribute name**		
8	Generated process ID	`pid`	*process-ID*	The ID of the process associated with the event
9	Generated location	`ocp:host`	• *host-name* • *IP-address*	The location where the event occurred
10	Event type	`ctgry`	• `StartStop` • `Authentication` • `ConfigurationAccess` • `ExternalService` • `AnomalyEvent` • `ManagementAction`	The name of the category to which the event output to the action log belongs
11	Event result	`result`	• `Success` • `Failure` • `Occurrence`	The result of the event
12	Subject identification information	`subj:pid`	*process-ID*	Any of the following information: • The ID of the user-operated process • The ID of the process that generated the event
		`subj:uid`	*account-ID* (PFM user or JP1 user)	• The username of the user who generated the event
		`subj:euid`	*execution-user-ID* (OS user)	• Identification information unique to a particular user

Legend:

--: None.

#

T is used to separate the date and time.

TZD specifies the time zone. One of the following is output:

+hh:mm: Indicates a time zone *hh*:*mm* ahead of UTC.

-hh:mm: Indicates a time zone *hh:mm* behind UTC.

z: Indicates a time zone equivalent to UTC.

(b) Fixed output items

The following table lists the values output as fixed output items, and the content of each item.

Table G-3: Fixed output items in action logs

No.	Output item		Value	Content
	Item name	**Output attribute name**		
1	Object information	obj	• *service-ID-for-PFM-Agent-or-PFM-RM* • *name-of- added-deleted-or-updated-user* (PFM user)	The target of the operation.
		obj:table	*alarm-table-name*	
		obj:alarm	*alarm-name*	
2	Action information	op	• Start • Stop • Add • Update • Delete • Change Password • Activate • Inactivate • Bind • Unbind	The action that generated the event.

3	Permissions information	auth	• Administrator
			  Management
			• Ordinary user
			  Ordinary
			• Windows
			  Administrator
			• UNIX
			  SuperUser
				The permission held by the user who performed the operation.

		auth:mode	• PFM authentication mode
			  pfm
			• JP1 authentication mode
			  jp1
			• OS user
			  os
				The authentication mode of the user who performed the operation.

No.	Output item		Value	Content
	Item name	Output attribute name		
4	Location of output source	`dtp:host`	*host-name-for-PFM-Agent-or-PFM-RM*	The host where the alarm was generated.
5	Origin of instructions	`subjp:host`	• *login-host-name* • *execution-host-name* (when executing the `jpctool alarm` command)	The host where the instructions to perform the operation originated from.
6	Free description	`msg`	*message*	The message output at alarm generation or at automated action execution

The fixed output items output in an action log and the content of those fixed items depends on the type of event that caused the action log to be output. The following describes the message IDs and the content of the fixed output items in action logs for each event type.

■ When a PFM service starts or stops (StartStop)

- Output host: The host where the service runs
- Output component: Each service that is started or stopped

Item name	Attribute name	Value
Message ID	`msgid`	Starting service: `KAVE03000-I` Stopping service: `KAVE03001-I`
Action information	`op`	Starting service: `Start` Stopping service: `Stop`

■ When a service enters or leaves stand-alone mode (StartStop)

- Output host: PFM - Agent or PFM - RM host
- Output component: Agent Collector and Agent Store services for PFM - Agent host. Remote Monitor Collector and Remote Monitor Store services for PFM - RM host.

Item name	Attribute name	Value
Message ID	`msgid`	Beginning stand-alone mode: `KAVE03002-I` Ending stand-alone mode: `KAVE03003-I`

Note 1: No fixed output items are output.

Note 2: Each PFM - Agent or PFM - RM service connects to the PFM - Manager host at startup, and begins such tasks as registering node information and acquiring the latest alarm definition information. If the PFM - Agent service is unable to connect to the PFM - Manager host, its functionality will be restricted to certain functions such as collecting operating information. This is called *stand-alone mode*. In this case, the message `KAVE03002-I` is output to indicate that the PFM - Agent has entered stand-alone mode. While in stand-alone mode, PFM - Agent makes periodic attempts to connect to PFM - Manager and perform the intended tasks such as registering node information and acquiring definition information. When such an attempt is successful, PFM - Agent exits stand-alone mode and the message `KAVE03003-I` is output. By reviewing the action log, you can see that PFM - Agent or PFM - RM was running with limited functionality during the time between `KAVE03002-I` and `KAVE03003-I` were output.

■ **When login authentication results are received from PFM - Web Console (Authentication)**

- Output host: The host where PFM - Manager (ViewServer) is running
- Output component: ViewServer

Item name	Attribute name	Value
Message ID	`msgid`	Successful login: `KAVE03050-I` Failed login: `KAVE03051-W`
Permissions information	`auth`	Administrator: `Management` Ordinary user: `Ordinary`
	`auth:mode`	PFM authentication mode: `pfm` JP1 authentication mode: `jp1`
Origin of instruction	`subjp:host`	The host from which the login attempt was made (PFM - Web Console)

■ **When an alarm or action definition is created, updated, or deleted (ConfigurationAccess)**

- Output host: The host where PFM - Manager (ViewServer) is running or where the `jpctool alarm` command was executed

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- Output component: ViewServer / `jpctool alarm` command

Item name	Attribute name	Value
Message ID	`msgid`	Create: `KAVE03150-I` Update: `KAVE03151-I` Delete: `KAVE03152-I` Enable: `KAVE03153-I` Disable: `KAVE03154-I`
Object information	`obj:table`	The name of the alarm table that is the target of the operation
	`obj:alarm`	The name of the alarm that is the target of the operation (omitted when not applicable)
Action information	`op`	Create: `Add` Update: `Update` Delete: `Delete` Activate: `Activate` Deactivate: `Inactivate`
Permissions information	`auth`	Administrator: `Management`
	`auth:mode`	PFM authentication mode: `pfm` JP1 authentication mode: `jp1` OS user: `os`
Origin of instruction	`subjp:ipv4`	For ViewServer only: IP address from which the user logged in (PFM - Web Console)
	`subjp:host`	Execution host name (for `jpctool alarm` command execution only)

Note 1: When an alarm definition is created from PFM-Web Console, `KAVE03151-I` (op=Update) is output instead of `KAVE03150-I` (op=Add).

Note 2: When an alarm definition is activated from PFM-Web Console, `KAVE03151-I` (op=Update) is output instead of `KAVE03153-I` (op=Activate).

Note 3: When an alarm definition is deactivated from PFM-Web Console, `KAVE03151-I` (op=Update) is output instead of `KAVE03154-I` (op=Inactivate).

Note 4: When an alarm definition is updated from PFM-Web Console, `KAVE03151-I` (op=Update) or `KAVE03152-I` (op=Delete) is output.

Note 5: When an alarm definition is copied, `KAVE03150-I` (op=Add) is output. This is common to PFM-Web Console, and the `jpctool alarm` command.

■ When an alarm is bound or unbound (ConfigurationAccess)

- Output host: The host where PFM - Manager is running or where the `jpctool`

`alarm` command was executed

- Output component: ViewServer / Master Manager / `jpctool alarm` command

Item name	Attribute name	Value
Message ID	`msgid`	Bind: `KAVE03155-I` Unbind: `KAVE03156-I`
Object information	`obj`	Service ID for PFM - Agent or PFM - RM
	`obj:table`	The name of the alarm table
Action information	`op`	Bind: `Bind` Unbind: `Unbind`
	`op:mode`	Only for when the functionality for binding multiple alarm tables is enabled, and you have not unbound the alarm tables: `Add`
Permissions information	`auth`	Administrator: `Management`
	`auth:mode`	PFM authentication mode: `pfm` JP1 authentication mode: `jp1` OS user: `os`
Origin of instruction	`subjp:ipv4`	For ViewServer only: IP address from which the user logged in (PFM - Web Console)
	`subjp:host`	Only for the `jpctool alarm` command and Master Manager: execution host name
Free description	`msg`	Only when the functionality for binding multiple alarm tables is disabled, and Master Manager has unbound the alarm tables: `ext=auto-unbind`

■ When a PFM user is added, deleted, or updated (ConfigurationAccess)

- Output host: The host where PFM - Manager (ViewServer) is running
- Output component: ViewServer

Item name	Attribute name	Value
Message ID	`msgid`	Add: `KAVE03157-I` Delete: `KAVE03158-I` Update: `KAVE03159-I` Change password: `KAVE03160-I`
Object information	`obj`	Name of added, deleted, or updated user (PFM user)

Item name	Attribute name	Value
Action information	`op`	Create: `Add` Delete: `Delete` Update: `Update` Change password: `Change Password`
Permissions information	`auth`	Administrator: `Management`
	`auth:mode`	PFM authentication mode: `pfm`
Origin of instruction	`subjp:ipv4`	IP address from which the user logged in (PFM - Web Console)

■ **When the status of the connection to PFM - Manager changes (ExternalService)**

- Output host: PFM - Agent or PFM - RM host

- Output component: Agent Collector and Agent Store services for PFM - Agent host. Remote Monitor Collector and Remote Monitor Store services for PFM - RM host.

Item name	Attribute name	Value
Message ID	`msgid`	When an attempt to send an event to PFM - Manager fails (and queuing begins): `KAVE03300-I` When an event was resent to PFM - Manager: `KAVE03301-I`

Note 1: No fixed output items are output.

Note 2: If the Agent Store and Remote Monitor Store services fail in an attempt to send an event to PFM - Manager, it begins to queue events, storing up to three occurrences of each event in the queue. The message `KAVE03300-I` is output at the point when queuing begins after a failed attempt at event transmission. When the connection to PFM - Manager is restored, the message `KAVE03301-I` is output once the service has finished sending the queued events. By reviewing the action log, you can learn that events were not being sent to PFM - Manager in real time during the time between when `KAVE03300-I` and `KAVE03301-I` were output.

Note 3: Under normal circumstances, the Agent Collector or Remote Monitor Collector service sends events to PFM - Manager through the Agent Store or Remote Monitor Store service. If the Agent Store or Remote Monitor Store service is unavailable for some reason, the Agent Collector or Remote Monitor Collector service sends events directly to PFM - Manager. If this fails, the message `KAVE03300-I` is output. In this case, the message `KAVE03301-I` is not output because queuing is not started. By reviewing the action log, you can learn that some events occurred that were never sent to PFM - Manager.

■ **When PFM - Agent or PFM - RM connects or disconnects (ExternalService)**

- Output host: PFM - Manager host

- Output component: Name Server service (only applies to connection and disconnection with the Agent Connector and Remote Monitor Collector, as well as Agent Store and Remote Monitor Store)

Item name	Attribute name	Value
Message ID	`msgid`	Connection with PFM - Agent or PFM - RM established: `KAVE03304-I` Connection with PFM - Agent or PFM - RM released: `KAVE03305-I`
Object information	`obj`	*service-ID-for-PFM-Agent-or-PFM-RM*

■ **When an alarm is generated (AnomalyEvent)**

- Output host: PFM - Manager host

- Output component: Correlator service

Item name	Attribute name	Value
Message ID	`msgid`	`KAVE03450-I`
Location where event was detected	`dtp:host`	*host-name-for-PFM-Agent-or-PFM-RM*
Free description	`msg`	`serviceid=`*service-ID-for-PFM-Agent-or-PFM-RM*`,severity={E|W|I},` `date=`*alarm-generation-date*`,text=`*message-text*

■ **When an automated action is executed (ManagementAction)**

- Output host: The host that executed the action

- Output component: Action Handler service

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Item name	Attribute name	Value
Message ID	msgid	When generation of the command execution process was successful: KAVE03500-I When generation of the command execution process failed: KAVE03501-W When E-mail transmission was successful: KAVE03502-I When E-mail transmission failed: KAVE03503-W
Free description	msg	Command execution: cmd=*executed-command-line* E-mail transmission: mailto=*destination-email-address*

Note: The message KAVE03500-I is output at the point when the command execution process is successfully generated. Subsequent information such as logs indicating whether command execution took place and the execution results is not output to the action log.

(4) Output example

The following shows an example of action log output.
```
CALFHM 1.0, seqnum=1, msgid=KAVE03000-I,
date=2007-01-18T22:46:49.682+09:00,
progid=JP1PFM, compid=TA1host01, pid=2076,
ocp:host=host01, ctgry=StartStop, result=Occurrence,
subj:pid=2076,op=Start
```

G.4 Settings for outputting action log data

The settings that govern action log output are defined in the jpccomm.ini file. Action logs are not output unless the file contains these settings. The following describes the settings required to output action logs, and the setting procedure.

(1) Setting procedure

To configure Performance Management to output action logs:

1.   Stop all Performance Management services on the host.

2.   Use a text editor or a similar tool to edit the jpccomm.ini file.

3.   Save and then close the jpccomm.ini file.

(2) Details about the jpccomm.ini file

Details on the jpccomm.ini file are given below.

(a) Storage directory

On physical hosts

- In Windows

installation-folder

- In UNIX

  `/opt/jp1pc/`

On logical hosts

- In Windows

  environment-directory`\jp1pc`

- In UNIX

  environment-directory`/jp1pc/`

(b) Format

Define the following information in the `jpccomm.ini` file.

- Whether action logs are output

- The location to which action logs are output

- The maximum number of log files

- The size of each action log file

Specify each item in the following format:

`"`*item-name*`"=`*value*

The following table lists the available settings.

Table G-4: Items available in the jpccomm.ini file and their default values

No.	Item	Description
1	`[Action Log Section]`	The section name. It cannot be changed.
2	`Action Log Mode`	Specify whether to output action logs. This item is mandatory. • Initial value: 0 (do not output) • Available values: 0 (do not output), 1 (output) If you specify any other value, an error message is output, and Performance Management will not output action logs.

No.	Item	Description
3	Action Log Dir[#]	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. • Initial value: Omitted • Value used when item is omitted (default): On physical hosts: Windows: *installation-folder*\auditlog UNIX: /opt/jp1pc/auditlog On logical hosts: Windows: *environment-directory*\jp1pc\auditlog UNIX: *environment-directory*/jp1pc/auditlog • Available values: Character strings from 1 to 185 bytes in length
4	Action Log Num	Specify the maximum number of action log files to save. The value you specify includes the current output file and all shift files. • Initial value: Omitted • Value used when item is omitted (default): 5 • Available values: Integers from 2 to 10. If you specify a character string that contains non-numeric characters, an error message is output and the default of 5 is used. If you specify a value outside the allowable range, an error message is output, and the integer from 2 to 10 that is closest to the specified value is used.
5	Action Log Size	Specify the size of each log file in kilobytes. • Initial value: Omitted • Value used when item is omitted (default): 2,048 • Available values: Integers from 512 to 2,096,128 If you specify a character string that contains non-numeric characters, an error message is output and the default of 2,048 is used. If you specify a value outside the allowable range, an error message is output, and the integer from 512 to 2,096,128 that is closest to the specified value is used.

\#

When you use the `jpcconf ha hasetup` command to set up a logical host after you configure action log output on the physical host, the settings in the `jpccomm.ini` file of the physical host apply to the logical host. If the logical host and the physical host are being used simultaneously, make sure that the action logs are output to different directories.

H. Health Check Agent

Performance Management provides data models and monitoring templates for the health check agent. This appendix describes the data model and monitoring template for the health check agent.

H.1 Data model

This subsection describes data models for the health check agent. The following table shows the data model versions for the health check agent that correspond to the PFM - Manager versions.

PFM - Manager version	Data model version
08-11	3.0
09-00 or later	4.0
	5.0

The following table shows the records that support data model versions.

Record name (record ID)	Data model version			Description
	3.0	4.0	5.0	
Health Check Detail(PD_HC)	Y	Y	Y	Detailed information of health check results
Host Availability(PI_HAVL)	--	Y	Y	Performance and running rate of each host
Host Detail(PD_HOST)	--	Y	Y	Details on the health check result for each host
Reserved Interval(PI)	Y	Y	Y	Reserved record
Reserved Detail(PD)	Y	Y	Y	Reserved record
System Overview(PI_SYS)	--	Y	Y	Operational status summary of hosts in the system

Legend:

Y: Supported

--: Unsupported

(1) Health Check Detail (PD_HC)

Function

This record stores the operating status data of PFM - Agent or PFM - RM, or the operating status data of hosts where PFM - Agent or PFM - RM operates. It is a multi-instance record. You can use this record to perform the following:

- Configure alarms or actions that respond to changes in the operating status of agents.

  You can use integrated management products, such as JP1/IM, to monitor status changes made by the agent.

- Confirm the monitoring result report in the service-level operating status monitoring mode.

  You can confirm detailed information collected in the service-level operating status monitoring mode, such as the status of agents and services that make up the agents, or the date and time when the status was updated.

Default values and changeable values

Item	Default value	Changeable
Log	No	Yes
Collection Interval	300	Yes
Collection Offset from Top of Minute	0	Yes
LOGIF	Blank	Yes

ODBC key field

PD_HC_AGENT

Lifetime

From the first time the agent was started until unsetup or uninstallation.

Record size

- Fixed part: 716 bytes
- Variable part: 1,023 bytes

Fields

Common fields

PFM - View name (PFM - Manager name)	Description	Summary	Format	Delta	Data source
Record Type (INPUT_RECORD_TYPE)	The name of the record. The value of this field is always HC.	--	char 8	No	--
Record Time (RECORD_TIME)	The time when the record was created.	--	pwbTIMET	No	--
Interval (INTERVAL)	The collection interval of the record (in seconds).	--	pwbULONG	No	--
Monitoring Level by Num (MONITORING_LEVEL_NUM)	The monitoring level of the health check function (numerical value). This is a reserved field and cannot be used.	--	pwbSHORT	No	--
Monitoring Level (MONITORING_LEVEL)	The monitoring level of the health check function (character string) as one of the following values: • Host: Host-level operation status monitoring • Service: Service-level operation status monitoring	--	pwbSTRING 33	No	--

Fields for determining the agent operating status

PFM - View name (PFM - Manager name)	Description	Summary	Format	Delta	Data source
Agent (AGENT)	The service ID of the monitored agent.	--	pwbSTRING259	No	--
Host (HOST)	The host where the monitored agent is running.	--	pwbSTRING256	No	--
Agent Category by Num (AGENT_CATEGORY_NUM)	The type of the monitored agent (numerical value). This is a reserved field and cannot be used.	--	pwbSHORT	No	--
Agent Category (AGENT_CATEGORY)	The type of the monitored agent (numerical value), as one of the following values: • Agent: PFM - Agent • Remote Monitor: PFM - RM • Remote Agent: Remote agent	--	pwbSTRING33	No	--

PFM - View name (PFM - Manager name)	Description	Summary	Format	Delta	Data source
Polling Date and Time (POLLING_DATETIME)	The date and time at which the monitored agent was polled.	--	pwbTIMET	No	--
Agent Op Status by Num (AGENT_STATE_NUM)	The status of the monitored agent (numerical value), as one of the following[#]: • 0: Not Supported • 4: Running • 8: Incomplete • 12: Stopped • 16: Unconfirmed • 24: Host Not Available	--	pwbSHORT	No	--
Agent Op Status (AGENT_STATE)	The status of the monitored agent (character string), as one of the following[#]: • Not Supported • Running • Incomplete • Stopped • Unconfirmed • Host Not Available	--	pwbSTRING 33	No	--
Agent Op Status Change (AGENT_STATE_CHANGE)	A flag indicating whether the status of the monitored agent has changed since the last time the agent was polled. This field can contain the following values: • 0: The status is unchanged • 1: The status has changed	--	pwbSHORT	No	--

[#]

The status displayed for the agent depends on the monitoring level of the health check agent. For details on the status, see the chapter that describes detecting problems within Performance Management in the *Job Management Partner 1/ Performance Management User's Guide*.

Fields for determining the host operating status

PFM - View name (PFM - Manager name)	Description	Su mm ary	Format	Delta	Data sourc e
Host Op Status by Num (HOST_STATE_NUM)	The status of the host where the monitored agent is running (numerical value). This is a reserved field and cannot be used.	--	pwbSHORT	No	--
Host Op Status (HOST_STATE)	The status of the host where the monitored agent is running (character string), as one of the following: • Success: Communication with the host was successful • Failure: Communication with the host failed • Unknown: Unknown status	--	pwbSTRING 33	No	--

Fields for determining the service operating status (Agent Collector and Remote Monitor Collector services)

PFM - View name (PFM - Manager name)	Description	Su mm ary	Format	Delta	Data sourc e
Collector Inclusion in Agent (COLLECTOR_INCL_ AGENT)	A flag indicating whether the status of the Agent Collector and Remote Monitor Collector services is considered when evaluating the agent status. 0 is set when the operating status of the host is monitored, and 1 is set when the operating status of the service is monitored. • 0: Not included • 1: Included	--	pwbSHORT	No	--
Collector Op Status by Num (COLLECTOR_STATE_ NUM)	Operating status of Agent Collector and Remote Monitor Collector services (numeric value). This is a reserved field and cannot be used.	--	pwbSHORT	No	--

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PFM - View name (PFM - Manager name)	Description	Su mm ary	Format	Delta	Data sourc e
Collector Op Status (COLLECTOR_STATE)	Operating status of Agent Collector and Remote Monitor Collector services (string). The values are as follows: • `Start Pending`: The service is starting • `Active`: The service has started • `Standalone Active`: The service has started (in stand-alone mode) • `Busy`: The service is processing a request • `Standalone Busy`: The service is processing a request (in stand-alone mode) • `Too Long Busy`: The service is taking a long time to process a request[1] • `Standalone Too Long Busy`: The service is taking a long time to process a request (in stand-alone mode)[1] • `Stop Pending`: The service is stopping • `Inactive`: The service is stopped • `Unknown`: The status is unknown[2]	--	pwbSTRING 33	No	--
Collector Op Status Last-Updated (COLLECTOR_STATE_ LAST_UPDATE)	Date and time when the operating status of Agent Collector and Remote Monitor Collector services was updated	--	pwbTIMET	No	--
Collector Op Status Cont-Period (COLLECTOR_STATE_ CONT_PERIOD)	The duration of the operating status of the Agent Collector and Remote Monitor Collector services (in seconds)[3].	--	pwbTIMET	No	--

PFM - View name (PFM - Manager name)	Description	Summary	Format	Delta	Data source
Collector Op Status Change (COLLECTOR_STATE_CHANGE)	A flag indicating whether the status of the Agent Collector and Remote Monitor Collector services has changed since the last time the agent was polled. This field can contain the following values: • 0: The status is unchanged • 1: The status has changed	--	pwbSHORT	No	--

#1

If **Yes** is specified for **Busy as Inactive** in the properties of the health check agent, this value is set when the service remains in *Busy* or *Standalone Busy* status for longer than the period of time specified as the **Time to Busy as Inactive** setting. In this case, the health check agent considers the service inactive when it determines the operating status of the agent.

#2

This value is set when performing host-level monitoring of operating statuses, or in the following cases when performing service-level monitoring of operating statuses:

- When the service is not specified as a monitoring target.

- When the host or the Status Server on the host is stopped.

- When the service does not support the status management function.

- When the status management function is unable to confirm the status of the service for reasons such as the service having terminated abnormally, despite the service supporting the status management function. In this case, the health check agent considers the service inactive when it determines the operating status of the agent. You will need to restart the service to allow the service status to be recognized correctly.

#3

The duration of the operating status of a service is calculated from the difference between the time when polling took place (Polling Date and Time) and the time when the service entered the current operating status (Collector Op Status Last-Updated, Store Op Status Last-Updated, or AH Op Status Last-Updated). For this reason, make sure that the clocks are synchronized on all hosts that run Performance Management services.

Fields for determining the service operating status (Agent Store and Remote

Monitor Store services)

PFM - View name (PFM - Manager name)	Description	Su mm ary	Format	Delta	Data sourc e
Store Inclusion in Agent (STORE_INCL_AGEN T)	A flag indicating whether the status of the Agent Store and Remote Monitor Store services is considered when evaluating the agent status. 0 is set when the operating status of the host is monitored, and 1 is set when the operating status of the service is monitored. • 0: Not included • 1: Included	--	pwbSHORT	No	--
Store Op Status by Num (STORE_STATE_NUM)	Operating status of Agent Store and Remote Monitor Store services (numeric value). This is a reserved field and cannot be used.	--	pwbSHORT	No	--
Store Op Status (STORE_STATE)	Operating status of Agent Store and Remote Monitor Store services (string). The values are as follows: • Start Pending: The service is starting • Active: The service has started • Standalone Active: The service has started (in stand-alone mode) • Busy: The service is processing a request • Standalone Too Long Busy: The service is processing a request (in stand-alone mode) • Too Long Busy: The service is taking a long time to process a request[1] • Standalone Too Long Busy: The service is taking a long time to process a request (in stand-alone mode)[1] • Stop Pending: The service is stopping • Inactive: The service is stopped • Unknown: The status is unknown[2]	--	pwbSTRING 33	No	--

PFM - View name (PFM - Manager name)	Description	Summary	Format	Delta	Data source
Store Op Status Last-Updated (STORE_STATE_LAST _UPDATE)	Date and time when the operating status of Agent Store and Remote Monitor Store services was updated	--	pwbTIMET	No	--
Store Op Status Cont-Period (STORE_STATE_CONT _PERIOD)	The duration of the operating status of Agent Store and Remote Monitor Store services (in seconds)[#3]	--	pwbTIMET	No	--
Store Op Status Change (STORE_STATE_CHA NGE)	A flag indicating whether the status of the Agent Store and Remote Monitor Store services has changed since the last time the agent was polled. This field can contain the following values: • 0: The status is unchanged • 1: The status has changed	--	pwbSHORT	No	--

#1

If **Yes** is specified for **Busy as Inactive** in the properties of the health check agent, this value is set when the service remains in *Busy* or *Standalone Busy* status for longer than the period of time specified as the **Time to Busy as Inactive** setting. In this case, the health check agent considers the service inactive when it determines the operating status of the agent.

#2

This value is set when performing host-level monitoring of operating statuses, or in the following cases when performing service-level monitoring of operating statuses:

- When the service is not specified as a monitoring target.

- When the host or the Status Server on the host is stopped.

- When the service does not support the status management function.

- When the status management function is unable to confirm the status of the service for reasons such as the service having terminated abnormally, despite the service supporting the status management function. In this case, the health check agent considers the service inactive when it determines the operating status of the agent. You will need to restart the service to allow the service status to be recognized correctly.

#3

The duration of the operating status of a service is calculated from the difference between the time when polling took place (Polling Date and Time) and the time when the service entered the current operating status (Collector Op Status Last-Updated, Store Op Status Last-Updated, or AH Op Status Last-Updated). For this reason, make sure that the clocks are synchronized on all hosts that run Performance Management services.

Fields for determining the service operating status (Action Handler service)

PFM - View name (PFM - Manager name)	Description	Summary	Format	Delta	Data source
AH Inclusion in Agent (AH_INCL_AGENT)	A flag indicating whether the status of the Action Handler service is considered when evaluating the agent status. • 0: Not included • 1: Included	--	pwbSHORT	No	--
AH Op Status by Num (AH_STATE_NUM)	The operating status of the Action Handler service (numerical value). This is a reserved field and cannot be used.	--	pwbSHORT	No	--

PFM - View name (PFM - Manager name)	Description	Sum mary	Format	Delta	Data source
AH Op Status (AH_STATE)	The operating status of the Action Handler service (character string), as one of the following values: • `Start Pending`: The service is starting • `Active`: The service has started • `Standalone Active`: The service has started (in stand-alone mode) • `Busy`: The service is processing a request • `Standalone Busy`: The service is processing a request (in stand-alone mode) • `Too Long Busy`: The service is taking a long time to process a request[1] • `Standalone Too Long Busy`: The service is taking a long time to process a request (in stand-alone mode)[1] • `Stop Pending`: The service is stopping • `Inactive`: The service is - stopped • `Unknown`: The status is unknown[2]	--	pwbSTRING 33	No	--
AH Op Status Last-Updated (AH_STATE_LAST_UP DATE)	The date and time when the operating status of the Action Handler service was last updated.	--	pwbTIMET	No	--
AH Op Status Cont-Period (AH_STATE_CONT_PE RIOD)	The duration of the operating status of the Action Handler service (in seconds)[3].	--	pwbTIMET	No	--
AH Op Status Change (AH_STATE_CHANGE)	A flag indicating whether the status of the Action Handler service has changed since the last time the agent was polled. This field can contain the following values: • `0`: The status is unchanged • `1`: The status has changed	--	pwbSHORT	No	--

Message text field

PFM - View name (PFM - Manager name)	Description	Summary	Format	Delta	Data source
Message Text (MESSAGE_TEXT)	Detailed information about the operating status of the agent being monitored.	--	pwbSTRING 256	No	--

#1

If **Yes** is specified for **Busy as Inactive** in the properties of the health check agent, this value is set when the service remains in *Busy* or *Standalone Busy* status for longer than the period of time specified as the **Time to Busy as Inactive** setting. In this case, the health check agent considers the service inactive when it determines the operating status of the agent.

#2

This value is set when performing host-level monitoring of operating statuses, or in the following cases when performing service-level monitoring of operating statuses:

- When the service is not specified as a monitoring target.

- When the host or the Status Server on the host is stopped.

- When the service does not support the status management function.

- When the status management function is unable to confirm the status of the service for reasons such as the service having terminated abnormally, despite the service supporting the status management function. In this case, the health check agent considers the service inactive when it determines the operating status of the agent. You will need to restart the service to allow the service status to be recognized correctly.

#3

The duration of the operating status of a service is calculated from the difference between the time when polling took place (Polling Date and Time) and the time when the service entered the current operating status (Collector Op Status Last-Updated, Store Op Status Last-Updated, or AH Op Status Last-Updated). For this reason, make sure that the clocks are synchronized on all hosts that run Performance Management services.

Message text

Messages in the message text field are displayed as follows.

When performing host-level monitoring, or when service-level monitoring yields

an agent status of Not Supported, Unconfirmed, or Host Not Available:

> HC: *HC_AGT*

When service-level monitoring yields an agent status of Running, Incomplete, or Stopped:

> HC: *HC_AGT* (Collector: *HC_AC*, Store: *HC_AS* [, Action Handler: *HC_AH*])

Legend:
HC_AGT: The operating status of the agent
HC_AC: The operating status of Agent Collector and Remote Monitor Collector services
HC_AS: The operating status of Agent Store and Remote Monitor Store services
HC_AH: The operating status of the Action Handler service

Example of message output

The following are examples of messages output to the Message Text field of a PD_HC record.

HC: Not Supported

HC: Running (Collector: Active, Store: Active)

HC: Incomplete (Collector: Active, Store: Inactive, Action Handler: Active)

HC: Stopped (Collector: Inactive, Store: Inactive)

HC: Host Not Available

(2) Host Availability (PI_HAVL)

Function

This record stores the performance and running rate data of hosts that make up the system. It is a multi-instance record. You can use this record to perform the following:

- Confirm the running rate of hosts in a timescale.

  You can confirm the performance of each host.

Please note that for any host monitored only by a remote agent whose status is Unknown, the corresponding data for that host will not be stored.

Default values and changeable values

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Item	Default value	Changeable
Log	No	Yes
Sync Collection With	Detail Records, HC	No
LOGIF	Blank	Yes

Common ODBC key field

PI_HAVL_AGENT

Lifetime

From the first time the agent was started until unsetup or uninstallation

Record size

- Fixed part: 681 bytes
- Variable part: 292 bytes

Field

Common fields

PFM - View name (PFM - Manager name)	Description	Summary	Format	Delta	Data source
Record Type (INPUT_RECORD_TYPE)	The name of the record	COPY	char 8	No	--
Record Time (RECORD_TIME)	The time when the record was created	COPY	pwbTIMET	No	--
Interval (INTERVAL)	The collection interval of the record (in seconds)	COPY	pwbULONG	No	--

Fixed field

PFM - View name (PFM - Manager name)	Description	Summary	Format	Delta	Data source
Host (HOST)	Host name	COPY	pwbSTRING 256	No	--
Availability (AVAILABILITY)	Running rate (%) (Running: `100%`; Stopped: `0%`)	AVG	pwbFLOAT	No	--

PFM - View name (PFM - Manager name)	Description	Su mm ary	Format	Delta	Data sourc e
Total Available Time (TOTAL_AVAILABLE_ TIME)	Running time (second) (Running: `Interval`; Stopped: `0`)	AD D	pwbULONG	No	--
Total Not Available Time (TOTAL_NOTAVAILA BLE_TIME)	Stopping time (seconds) (Running: `0`; Stopped: `Interval`)	AD D	pwbULONG	No	--
Total Monitoring Time (TOTAL_MONITORIN G_TIME)	Monitoring time (seconds). Always `Interval`.	AD D	pwbULONG	No	--
Summary Start Date and Time (SUMMARY_START_ DATETIME)	The first storage time in the summary period. Always `Record Time` when stored.	LO	pwbTIMET	No	--
Summary End Date and Time (SUMMARY_END_DA TETIME)	The final storage time in the summary period. Always `Record Time` when stored.	COP Y	pwbTIMET	No	--

(3) Host Detail (PD_HOST)

Function

This record stores the information that summarizes the results for health check performed by hosts. It is a multi-instance record, and its key is the host name. You can use this record to perform the following:

- Configure alarms and actions that respond to changes in the status of hosts.

  You can use integrated management products, such as JP1/IM, to monitor status changes made by the host.

Default values and changeable values

Item	Default value	Changeable
Log	No	Yes
Sync Collection With	Detail Records, HC	No
LOGIF	blank	Yes

Common ODBC key field

PD_HOST_AGENT

Lifetime

From the first time the agent was started until unsetup or uninstallation

Record size

- Fixed part: 716 bytes
- Variable part: 325 bytes

Field

Common fields

PFM - View name (PFM - Manager name)	Description	Su mm ary	Format	Delta	Data sourc e
Record Type (INPUT_RECORD_TY PE)	The name of the record	--	char 8	No	--
Record Time (RECORD_TIME)	The time when the record was created	--	pwbTIMET	No	--
Interval (INTERVAL)	The collection interval of the record (in seconds)	--	pwbULONG	No	--
Monitoring Level by Num (MONITORING_LEVE L_NUM)	The monitoring level of the health check function (numerical value). This is a reserved field and cannot be used.	--	pwbSHORT	No	--
Monitoring Level (MONITORING_LEVE L)	The monitoring level of the health check function (character string) as one of the following values: • Host: Host-level operation status monitoring • Service: Service-level operation status monitoring	--	pwbSTRING 33	No	--

Fixed field

PFM - View name (PFM - Manager name)	Description	Su mm ary	Format	Delta	Data sourc e
Host (HOST)	Host name	--	pwbSTRING 256	No	--
Polling Date and Time (POLLING_DATETIM E)	Polling date and time	--	pwbTIMET	No	--

PFM - View name (PFM - Manager name)	Description	Su mm ary	Format	Delta	Data sourc e
Status (STATE)	Status (Running: `Available`; Stopped: `Not Available`; Unconfirmed: `Unknown`)	--	pwbSTRING 33	No	--
Status by Num (STATE_NUM)	Status (Running: `0`; Stopped: `1`; Unconfirmed: `2`)	--	pwbSHORT	No	--
Status Change (STATE_CHANGE)	Indicates whether there was a status change. (No change: `0`; Changed: `1`)	--	pwbSHORT	No	--
Num of Agents (NUM_AGENTS)	Total number of agents on the host	--	pwbULONG	No	--
Num of Not Supported (NUM_NOTSUPPORT ED)	Number of `Not Supported` agents on the host For details on the operating status, see the chapter that describes detecting problems within Performance Management in the *Job Management Partner 1/ Performance Management User's Guide*.	--	pwbULONG	No	--
Num of Running (NUM_RUNNING)	Number of `Running` agents on the host For details on the operating status, see the chapter that describes detecting problems within Performance Management in the *Job Management Partner 1/ Performance Management User's Guide*.	--	pwbULONG	No	--
Num of Incomplete (NUM_INCOMPLETE)	Number of `Incomplete` agents on the host For details on the operating status, see the chapter that describes detecting problems within Performance Management in the *Job Management Partner 1/ Performance Management User's Guide*.	--	pwbULONG	No	--

PFM - View name (PFM - Manager name)	Description	Su mm ary	Format	Delta	Data sourc e
Num of Stopped (NUM_STOPPED)	Number of `Stopped` agents on the host For details on the operating status, see the chapter that describes detecting problems within Performance Management in the *Job Management Partner 1/ Performance Management User's Guide*.	--	pwbULONG	No	--
Num of Unconfirmed (NUM_UNCONFIRME D)	Number of `Unconfirmed` agents on the host For details on the operating status, see the chapter that describes detecting problems within Performance Management in the *Job Management Partner 1/ Performance Management User's Guide*.	--	pwbULONG	No	--
Num of Host Not Available (NUM_HOSTNOTAVAI LABLE)	Number of `Host Not Available` agents on the host For details on the operating status, see the chapter that describes detecting problems within Performance Management in the *Job Management Partner 1/ Performance Management User's Guide*.	--	pwbULONG	No	--

(4) Reserved Interval (PI)

This is a reserved record and cannot be used.

(5) Reserved Detail (PD)

This is a reserved record and cannot be used.

(6) System Overview (PI_SYS)

Function

This record stores select information, such as the number and availability of running hosts, as the operating status summary of the hosts that make up the system. It is a single-instance record. You can use this information to perform the following:

- Use a snapshot to confirm the system's operating status summary.

You can confirm the current system status, as well as the status history and trends.

Default values and changeable values

Item	Default value	Changeable
Log	No	Yes
Sync Collection With	Detail Records, HC	No
LOGIF	Blank	Yes

Common ODBC key field

None

Lifetime

From the first time the agent was started until unsetup or uninstallation.

Record size

- Fixed part: 801 bytes
- Variable part: 0 bytes

Field

Common fields

PFM - View name (PFM - Manager name)	Description	Su mm ary	Format	Delta	Data sourc e
Record Type (INPUT_RECORD_TY PE)	The name of the record	--	char 8	No	--
Record Time (RECORD_TIME)	The time when the record was created	--	pwbTIMET	No	--
Interval (INTERVAL)	The collection interval of the record (in seconds)	--	pwbULONG	No	--

Fixed field

PFM - View name (PFM - Manager name)	Description	Summary	Format	Delta	Data source
% Available Hosts (PCT_AVAILABLE_HOSTS)	Running rate of host (%) (number of running hosts/total number of hosts)	HILO	pwbFLOAT	No	--
Num of Available Hosts (NUM_AVAILABLE_HOSTS)	Number of running hosts	HILO	pwbULONG	No	--
Num of Not Available Hosts (NUM_NOTAVAILABLE_HOSTS)	Number of stopped hosts	HILO	pwbULONG	No	--
Num of Unknown Hosts (NUM_UNKNOWN_HOSTS)	Number of unconfirmed hosts	HILO	pwbULONG	No	--
Num of Hosts (NUM_HOSTS)	Total number of hosts	HILO	pwbULONG	No	--

(7) Fields added to records stored in the Store database

The following table describes the fields that are added to a record only when the record is stored in the Store database.

PFM - View name (PFM - Manager name)	Description	Format	Delta	Supported version	Data source
Agent Host (DEVICEID)	Name of the host running PFM - Agent or PFM - RM	string(256)	No	All	--
Agent Instance (PROD_INST)	Name of the host running PFM - Agent or PFM - RM	string(256)	No	All	--
Agent Type (PRODID)	Product ID of PFM - Agent or PFM - RM. Indicated as a single-byte identifier.	char	No	All	--
Date (DATE)	The date when the record was created, in GMT[#1, #3].	char(3)	No	All	--
Date and Time (DATETIME)	A combination of the Date (DATE) and Time (TIME) fields[#3].	char(6)	No	All	--

PFM - View name (PFM - Manager name)	Description	Format	Delta	Supported version	Data source
Drawer Type (DRAWER_TYPE)	For PI-type records, the summary category for the data. The name of each category is displayed differently in reports in PFM - Web Console and in the output of the ODBC driver[2].	char	No	All	--
GMT Offset (GMT_ADJUST)	The difference between Greenwich Mean Time and local time, in seconds.	long	No	All	--
Time (TIME)	The time when the record was created, in GMT[1, 3].	char(3)	No	All	--

Legend:

--: Indicates that the health check function has processed the performance data and no value was assigned to the field.

#1

PI-type records present data in summarized form. To help the system summarize the data, a time is assigned to each record that provides a basis for use in the summarization process. The following table lists the time set for each record category.

Category	Setting used for each category
Per-minute	The time when the record was created with the seconds set to zero.
Hourly	The time when the record was created with the minutes and seconds set to zero.
Daily	00:00:00 on the day when the record was created.
Weekly	00:00:00 on the Monday of the week when the record was created.
Monthly	00:00:00 on the first day of the month when the record was created.
Yearly	00:00:00 on the first day of the year when the record was created.

#2

The following table lists the difference between how the categories are displayed in PFM - Web Console reports and in the output of the ODBC driver.

Category	PFM - Web Console	ODBC driver
Per-minute	Minute	m

Category	PFM - Web Console	ODBC driver
Hourly	`Hour`	`H`
Daily	`Day`	`D`
Weekly	`Week`	`W`
Monthly	`Month`	`M`
Yearly	`Year`	`Y`

#3

When you display data in a report or by using 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*.

H.2 Overview of monitoring template

With Performance Management, you can define alarms and reports for the health check agent in the following ways:

- Use an existing alarm or report defined for the health check agent

- Copy and then customize an alarm or report defined for the health check agent

- Use a wizard to create a new alarm or report

Performance Management provides pre-defined alarms and reports in a monitoring template for use by the health check agent. Because the necessary information has been preset in these alarms and reports, you can copy them and use them as is, or customize them to suit your environment. By using the alarms and reports in the monitoring template, you can easily prepare to monitor a system's operating status without needing to use wizards to create new definitions.

The following describes the settings in the alarms and reports defined in the monitoring template for the health check agent.

H.3 Monitoring template (alarm)

(1) Format of alarm explanations

Alarms are listed in alphabetical order and described under the following headings.

Alarm name

Shows the name of the alarm in the monitoring template.

Synopsis

Provides a summary of what the alarm can monitor.

Main settings

> Shows a table of the main settings of the alarm. The settings in the table correspond to the items shown in the Properties window that appears when you click an alarm icon in the **Alarms** page of the PFM - Web Console, and then click the **Properties** method. For details about each alarm setting, see the Properties window for the particular alarm in PFM - Web Console.

> Hyphens (--) in the *Setting* column of the table indicate that any value set for the item will be invalid. Where *Abnormal condition* and *Warning condition* have the same value under *Alarm Conditions* in the table, an alarm event is issued only for the abnormal condition.

Associated report

> Shows the name of the report associated with the alarm in the monitoring template. You can view the report by clicking an agent icon in the **Agents** page of the PFM - Web Console, and then clicking the icon for the **Display Alarm Status** method.

(2) List of alarms

The alarms defined in the monitoring template of the health check agent are summarized in the alarm table `PFM Health Check Template Alarm` *VV*.*RR*, where *VV*.*RR* represents the version of the alarm table. This table resides in the `HealthCheck` folder in the **Alarms** page of PFM - Web Console.

The following table shows the data model and alarm table versions that correspond to the health check agent versions.

Health check agent version	Data model version	Alarm table version
08-11	3.0	8.11
09-00 or later	4.0	8.50
	5.0	09.00

The table below lists the alarms defined in the monitoring template.

Table H-1: List of alarms (monitoring template)

Alarm table version	Alarm table name	Alarm name	Description
8.11	PFM HealthCheck Solution Alarms 8.11	Status Change	Changes of the health check status of monitored agents.

Alarm table version	Alarm table name	Alarm name	Description
		Abnormal Status (A)	The health check status of monitored agents
		Abnormal Status (S)	The health check status of monitored agents.
8.50	PFM HealthCheck Template Alarms 8.50	Status Change	Changes of the health check status of monitored agents.
		Abnormal Status (A)	The health check status of monitored agents
		Abnormal Status (S)	The health check status of monitored agents
		Host Status Change	Change of the operating status of the monitored agent host
		Host Not Available	Operating status of the monitored agent host
09.00	PFM HealthCheck Template Alarms 09.00	Status Change	Changes of the health check status of monitored agents.
		Abnormal Status (A)	The health check status of monitored agents
		Abnormal Status (S)	The health check status of monitored agents
		Host Status Change	Change of the operating status of the monitored agent host

Alarm table version	Alarm table name	Alarm name	Description
		Host Not Available	Operating status of the monitored agent host
	PFM HealthCheck Template Alarms [Service] 09.00	Service Status Change	Change of the health check status of the monitored agents (excluding remote agents)
		Service Abnormal (A)	Health check status of the monitored agents (excluding remote agents)
		Service Abnormal (S)	Health check status of the monitored agents (excluding remote agents)

(3) Considerations when creating alarms

Health check events and alarm events are issued at different times. Health check events are issued each time a host completes polling, and alarm events are evaluated and issued at record collection intervals. When you use monitoring template alarms, alarm events are evaluated after all target agent hosts have completed polling. This is because the alarms refer to the PD_HC and PC_HOST records. If you create alarms, remember that they are evaluated at the record collection intervals specified in the condition expression. In addition, alarms are also issued from the host running the health check agent (PFM - Manager host). When you set an action for an alarm, if you specify the action handler as LOCAL, the action is executed on the PFM - Manager host, rather than on the PFM - Agent or PFM - RM host.

(4) Status Change

Synopsis

The Status Change alarm monitors for variations in the health check statuses of the monitored agents. The alarm is issued once for each agent whose health check status has changed. Use this alarm when you require alarms to be issued as often as there are agent events (health check events). This alarm is disabled by default.

The severity of the alarm is always *Warning*, regardless of the health check status that the agent has entered.

Main settings

Alarm properties in PFM - Web Console		Setting
Item	**Details**	
Main Information	Product	`HealthCheck(3.0)`
	Message text	`Status of %CVS2 changed to %CVS3`
	Enable alarm	Not selected
	Always notify	Selected
	Evaluate all data	Selected
	Monitoring time range	**Always monitor**
	Damping	Not specified
Alarm conditions	Record name (record ID)	`Health Check Detail (PD_HC)`
	Abnormal condition	`Agent Op Status Change = "-1"` `AND (Agent = "*" AND Agent Op Status = "*")`
	Warning condition	`Agent Op Status Change = "1"AND (Agent =` `"*" AND Agent Op Status = "*")`
Actions	Email	--
	Command	--
	SNMP	**Abnormal** or **Warning**

Associated report

    Reports/HealthCheck/Troubleshooting/Recent Past/ System
    Overview

(5) Abnormal Status (A)

Synopsis

The Abnormal Status (A) alarm monitors the health check status of agents. The alarm is issued once for each agent that enters an abnormal status (any status other than *Not Supported* or *Running*). Use this alarm when you want to detect abnormal health check statuses on an agent level. This alarm is disabled by default.

The severity of the alarm is *Warning* if the agent has entered *Incomplete* status, and *Abnormal* if the agent has entered *Stopped*, *Unconfirmed*, or *Host Not Available* status.

Main settings

Alarm properties in PFM - Web Console		Setting
Item	**Details**	**Setting**
Main Information	Product	`HealthCheck(3.0)`
	Message text	`Status of %CVS2 changed to %CVS3`
	Enable alarm	Not selected
	Always notify	Selected
	Evaluate all data	Selected
	Monitoring time range	**Always monitor**
	Damping	Not specified
Alarm conditions	Record name (record ID)	`Health Check Detail (PD_HC)`
	Abnormal condition	`Agent Op Status Change = "1"AND (Agent = "*" AND (Agent Op Status = "*" AND Agent Op Status by Num > "8"))`
	Warning condition	`Agent Op Status Change = "1"AND (Agent = "*" AND (Agent Op Status = "*" AND Agent Op Status by Num > "4"))`
Actions	Email	--
	Command	--
	SNMP	**Abnormal** or **Warning**

Associated report

```
Reports/HealthCheck/Troubleshooting/Recent Past/ System
Overview
```

(6) Abnormal Status (S)

Synopsis

The Abnormal Status (S) alarm monitors the health check status of agents. The alarm is issued only once during any polling period where there are agents in abnormal status (any status other than *Not Supported* or *Running*). Use this alarm when you want to detect abnormal health check statuses on a system-wide level. This alarm is enabled by default.

The severity of the alarm is *Warning* if one or more agents has entered *Incomplete*

status, and *Abnormal* if one or more agents has entered *Stopped*, *Unconfirmed*, or *Host Not Available* status.

Main settings

Alarm properties in PFM - Web Console		Setting
Item	Details	
Main Information	Product	`HealthCheck(3.0)`
	Message text	`Transition to abnormal status was detected`
	Enable alarm	Selected
	Always notify	Selected
	Evaluate all data	Not selected
	Monitoring time range	**Always monitor**
	Damping	Not specified
Alarm conditions	Record name (record ID)	`Health Check Detail (PD_HC)`
	Abnormal condition	`Agent Op Status Change = "1"AND Agent Op Status by Num > "8"`
	Warning condition	`Agent Op Status Change = "1"AND Agent Op Status by Num > "4"`
Actions	Email	--
	Command	--
	SNMP	**Abnormal** or **Warning**

Associated report

```
Reports/HealthCheck/Troubleshooting/Recent Past/ System
Overview
```

(7) Host Status Change

Outline

The Host Status Change alarm monitors for variations in the operating statuses of the monitored agents. The alarm is issued once for each agent host whose operating status has changed. Use this alarm when you want to notify the change of the host's operating status by reporting an alarm. This alarm is disabled by default. The severity of the alarm is always *Warning*, regardless of the operating

status of the host.

Main settings

Alarm properties in PFM - Web Console		Setting
Item	**Details**	**Setting**
Main Information	Product	HealthCheck(4.0)
	Message	Host status of %CVS2 changed to %CVS3
	Enable alarm	None
	Always notify	Selected
	Evaluate all data	Selected
	Monitoring time range	**Always monitor**
	Damping	Not specified
Conditional expression	Record name (record ID)	Host Detail(PD_HOST)
	Abnormal condition	Status Change = "-1" AND (Host = "*" AND Status = "*")
	Warning condition	Status Change = "1" AND (Host = "*" AND Status = "*")
Actions	Email	None
	Command	None
	SNMP	**Abnormal** or **Warning**

Associated report

Reports/HealthCheck/Troubleshooting/Real-Time/Host Status (Real-Time) (4.0)

(8) Host Not Available

Outline

The Host Not Available alarm monitors the operating status of the target agent host. The alarm is issued once for each agent host that enters a *Stopped* status. You can use this alarm to detect operating hosts that have terminated. This alarm is disabled by default. The severity of the alarm is *Abnormal*.

Main settings

Alarm properties in PFM - Web Console		Setting
Item	**Details**	**Setting**
Main Information	Product	`HealthCheck(4.0)`
	Message	`Host status of %CVS2 changed to Not Available`
	Enable alarm	None
	Always notify	Selected
	Evaluate all data	Selected
	Monitoring time range	**Always monitor**
	Damping	Not specified
Conditional expression	Record name (record ID)	`Host Detail(PD_HOST)`
	Abnormal condition	`Status Change = "1" AND (Host = "*" AND Status by Num= "1")`
	Warning condition	`Status Change = "1" AND (Host = "*" AND Status by Num = "1")`
Actions	Email	None
	Command	None
	SNMP	**Abnormal** or **Warning**

Associated report

Reports/HealthCheck/Troubleshooting/Real-Time/Host Status (Real-Time) (4.0)

(9) Service Status Change

Outline

The Service Status Change alarm monitors for variations in the health check statuses of the monitored agents. The alarm is issued once for each agent whose health check status has changed. This alarm is disabled by default.

As with the Status Change alarm, use this alarm when you require alarms to be issued as often as agent event (health check event) occurs. However, this alarm does not monitor remote agents. Therefore, this alarm is only useful for when you want to monitor PFM - Agent and PFM - RM that run as services when operating PFM - RM.

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The severity of the alarm is always *Warning*, regardless of the health check status that the agent has entered.

Main settings

Alarm properties in PFM - Web Console		Setting
Item	**Details**	**Setting**
Main Information	Product	HealthCheck(5.0)
	Message	Status of %CVS3 changed to %CVS4
	Enable alarm	None
	Always notify	Selected
	Evaluate all data	Selected
	Monitoring time range	**Always monitor**
	Damping	Not specified
Conditional expression	Record name (record ID)	Health Check Detail(PD_HC)
	Abnormal condition	Agent Category <> "Remote Agent" AND (Agent Op Status Change = "-1" AND (Agent = "*" AND Agent Op Status = "*"))
	Warning condition	Agent Category <> "Remote Agent" AND (Agent Op Status Change = "1"AND (Agent = "*" AND Agent Op Status = "*"))
Actions	Email	None
	Command	None
	SNMP	**Abnormal** or **Warning**

Associated report

Reports/HealthCheck/Troubleshooting/Recent Past/ System Overview

(10) Service Abnormal (A)

Outline

The Service Abnormal (A) alarm monitors the health check status of agents. The alarm is issued once for each agent that enters an abnormal status (any status other than *Not Supported* or *Running*). This alarm is disabled by default.

As with the Abnormal Status (A) alarm, use this alarm when you want to detect abnormal health check statuses on an agent level. However, this alarm does not monitor remote agents. Therefore, this alarm is only useful for when you want to monitor PFM - Agent and PFM - RM that run as services when operating PFM - RM.

The severity of the alarm is *Warning* if the agent has entered an *Incomplete* status, and *Abnormal* if the agent has entered a *Stopped*, *Unconfirmed*, or *Host Not Available* status.

Main settings

Alarm properties in PFM - Web Console		
Item	**Details**	**Setting**
Main Information	Product	`HealthCheck(5.0)`
	Message	`Status of %CVS3 changed to %CVS4`
	Enable alarm	None
	Always notify	Selected
	Evaluate all data	Selected
	Monitoring time range	**Always monitor**
	Damping	Not specified
Conditional expression	Record name (record ID)	`Health Check Detail(PD_HC)`
	Abnormal condition	`Agent Category <> "Remote Agent" AND (Agent Op Status Change = "1"AND (Agent = "*" AND (Agent Op Status = "*"AND Agent Op Status by Num > "8")))`
	Warning condition	`Agent Category <> "Remote Agent" AND (Agent Op Status Change = "1"AND (Agent = "*" AND (Agent Op Status = "*"AND Agent Op Status by Num > "4")))`
Actions	Email	None
	Command	None
	SNMP	**Abnormal** or **Warning**

Associated report

Reports/HealthCheck/Troubleshooting/Recent Past/ System Overview

(11) Service Abnormal (S)

Outline

The Service Abnormal (S) alarm monitors the health check status of agents. The alarm is issued only once during any polling period where there are agents in abnormal status (any status other than *Not Supported* or *Running*). This alarm is enabled by default.

As with the Abnormal Status (S) alarm, use this alarm when you want to detect abnormal health check statuses on a system-wide level. However, this alarm does not monitor remote agents. Therefore, this alarm is only useful for when you want to monitor PFM - Agent and PFM - RM that run as services when operating PFM - RM.

The severity of the alarm is *Warning* if the agent has entered an *Incomplete* status, and *Abnormal* if the agent has entered a *Stopped*, *Unconfirmed*, or *Host Not Available* status.

Main settings

Alarm properties in PFM - Web Console		Setting
Item	**Details**	**Setting**
Main Information	Product	`HealthCheck(5.0)`
	Message	`Transition to abnormal status was detected`
	Enable alarm	Selected
	Always notify	Selected
	Evaluate all data	None
	Monitoring time range	**Always monitor**
	Damping	Not specified
Conditional expression	Record name (record ID)	`Health Check Detail(PD_HC)`
	Abnormal condition	`Agent Category <> "Remote Agent" AND (Agent Op Status Change = "1"AND Agent Op Status by Num > "8")`

Alarm properties in PFM - Web Console		Setting
Item	**Details**	
	Warning condition	`Agent Category <> "Remote Agent" AND (Agent Op Status Change = "1"AND Agent Op Status by Num > "4")`
Actions	Email	None
	Command	None
	SNMP	**Abnormal** or **Warning**

Associated report

Reports/HealthCheck/Troubleshooting/Recent Past/ System Overview

H.4 Monitoring template (report)

(1) Format of report explanations

Reports are listed in alphabetical order and described under the following headings.

Report name

Shows the name of the report in the monitoring template.

Synopsis

Provides a summary of the information that can be viewed in the report.

Location

Shows the location of the report.

Records

Shows the type of performance data records on which the report is based. Before you can display a historical report, you must set up the Performance Management to collect the records indicated here. Before displaying the report, display the agent properties in the **Agents** page of PFM - Web Console, and make sure that **Log = Yes** is set for these records. This setting is not required for the records in a real-time report.

Fields

Shows a table of the fields used in the report.

Drilldown reports (field level)

Shows a table of the reports in the monitoring template that are associated with the fields in the report. You can display these drilldown reports by clicking a

graph, list, or table in the report window of PFM - Web Console. By displaying a drilldown report from a time item in a historical report, you can narrow down the time period of the data in the report. Only some reports have drilldown reports.

For details on drilldown reports, see the chapter that explains creation of reports for operation analysis in the *Job Management Partner 1/Performance Management User's Guide*.

(2) Organization of report folders

The health check agent report folders are organized as follows. The items in angle brackets are folder names.

```
<HealthCheck>
 +-- <Monthly Trend>
        +-- System Summary (4.0)
        +-- Hosts Availability (4.0)
            +-- <Drilldown Only>
                  +-- Host Availability (4.0)
 +-- <Status Reporting>
                  +-- System Overview (Historical)
                  +-- System Overview (Status Change)
                  +-- System Summary (4.0)
                  +-- Hosts Availability (4.0)
                  +-- <Drilldown Only>
                        +-- Host Availability (4.0)
 +-- <Troubleshooting>
        +-- <Real-Time>
                  +-- System Overview (Real-Time)
                  +-- Hosts Status (Real-Time) (4.0)
            +-- <Drilldown Only>
                  +-- Agent Detail (Real-Time)
                  +--
        +-- <Recent Past>
                  +-- System Overview (Historical)
                  +-- System Overview (Status Change)
            +-- <Drilldown Only>
                  +-- Agent Detail (Historical)
                  +-- Agent Overview (Historical)
                  +-- Agent Overview (Status Change)
```

The folder contents are as follows.

- `Status Reporting` folder

  Folder for reports with data aggregated every day or week, used for surveying general system trends.

- `Troubleshooting` folder

Folder for reports with troubleshooting data, used for identifying the cause of problems that occur in the system.

- `Real-Time` folder

  Folder for real-time reports used to check the current system status.

- `Recent Past` folder

  Folder for historical reports with data aggregated for each minute of the past hour.

These folders might contain some of the following subfolders. Which of these folders appears depends on the parent folder. The subfolders are as follows:

■ `Advanced` folder

Folder for reports that use records for which the default setting of **Log = No** is set in the agent properties. To display the reports in this folder, you need to set **Log = Yes** for these records in PFM - Web Console.

■ `Drilldown Only` folder

Folder for reports displayed as drilldown report (field level) reports. These reports are used to display detailed information about fields in the parent report.

(3) List of reports

The following table lists the reports defined in the monitoring template in alphabetical order.

Table H-2: List of reports

Report name	Displayed information
Agent Detail (Historical)	Detailed health check results
Agent Detail (Real-Time)	Detailed health check results
Agent Overview (Historical)	Summary of health check results
Agent Overview (Status Change)	Summary of health check results
Host Availability (4.0)	Information such as running time and rate of hosts that make up the system (drilldown report)
Hosts Availability (4.0)	Information such as running time and rate of hosts that make up the system
Hosts Status (Real-Time) (4.0)	Operating status of hosts that make up the system
System Overview (Historical)	Summary of health check results
System Overview (Real-Time)	Summary of health check results

Report name	Displayed information
System Overview (Status Change)	Summary of health check results
System Summary (4.0)	Operating status of hosts that make up the system

(4) System Overview (Historical)

Synopsis

The System Overview (Historical) report displays an overview of the health check results. You can use this report to check the operating status of each agent in table format, or view a line graph that shows how the status of each agent has changed over time. Because higher numerical values in the graph represent higher severity levels, you can visually check the source of any problems that may occur. By drilling down to another report, you can concentrate on a specific agent or host, or switch to a detailed report that describes the operating status of a specific agent.

Location

Reports/HealthCheck/Status Reporting/Daily Trend

Reports/HealthCheck/Troubleshooting/Recent Past

Records

Health Check Detail (PD_HC)

Fields

Field name	Description
Polling Date and Time	Polling time
Agent	PFM - Agent or PFM - RM name
Host	PFM - Agent or PFM - RM host name
Agent Op Status	Operating status of the agent
Message Text	Detailed information about the agent operating status

Drilldown reports (field level)

Report name	Description
Agent Overview (Historical)	Shows the operating status of the selected agent in detail. Display this report by clicking the **Agent** or **Host** field.
Agent Detail (Historical)	Shows the operating status of the selected agent in detail. Display this report by clicking the **Agent Op Status** or **Agent Op Status by Num** field.

(5) System Overview (Real-Time)

Outline

The System Overview (Real-Time) report displays an overview of the latest health check results. You can use this report to check the operating status of each agent in table format, or drill down to a detailed report that describes the operating status of a specific agent.

Location

Reports/HealthCheck/Troubleshooting/Real-Time

Records

Health Check Detail (PD_HC)

Field

Field name	Description
Polling Date and Time	Polling time
Agent	PFM - Agent or PFM - RM name
Host	PFM - Agent or PFM - RM host name
Agent Op Status	Operating status of the agent
Message Text	Detailed information about the agent operating status

Drilldown reports (field level)

Report name	Description
Agent Detail (Real-Time)	Shows the operating status of the selected agent in detail. Display this report by clicking the **Agent Op Status** field.

(6) System Overview (Status Change)

Synopsis

The System Overview (Status Change) report displays an overview of the health check results. The information in this report is the same as the System Overview (Historical) report, with the exception that the System Overview (Status Change) report only displays fields that have changed. It does not contain a graph. By drilling down to another report, you can concentrate on a specific agent or host, or switch to a detailed report that describes the operating status of a specific agent.

Location

```
Reports/HealthCheck/Status Reporting/Daily Trend
```

```
Reports/HealthCheck/Troubleshooting/Recent Past
```

Records

Health Check Detail (PD_HC)

Fields

Field name	Description
Polling Date and Time	Polling time
Agent	PFM - Agent or PFM - RM name
Host	PFM - Agent or PFM - RM host name
Agent Op Status	Operating status of the agent
Message Text	Detailed information about the agent operating status

Drilldown reports (field level)

Report name	Description
Agent Overview (Status Change)	Shows the operating status of the selected agent in detail. Display this report by clicking the **Agent** or **Host** field.
Agent Detail (Historical)	Shows the operating status of the selected agent in detail. Display this report by clicking the **Agent Op Status** field.

(7) System Summary (4.0)

Outline

The System Summary (4.0) report shows the operating status of hosts that make up the system, based on the results of the health check. You can use this report to confirm the operating status of each host in table format, or view a line graph that shows how the total number of hosts and the number of running hosts has changed over time.

Note

Depending on when a host starts or stops operating, the number of operating hosts might have changed, even if Num of Available Hosts (Max) and Num of Available Hosts (Min) have not changed.

Location

Reports/HealthCheck/Monthly Trend

Reports/HealthCheck/Status Reporting/Daily Trend

Records

System Overview (PI_SYS)

Field

Field name	Description
Num of Hosts (Max)	Total number of hosts in the system (maximum)
Num of Available Hosts (Max)	Total number of running hosts in the system (maximum)
Num of Available Hosts (Min)	Total number of running hosts in the system (minimum)
% Available Hosts	Running rate of hosts (%) in the system

(8) Agent Overview (Historical)

Synopsis

The Agent Overview (Historical) report displays an overview of the health check results. You can use this report to check the operating status of each agent in table format, or view a line graph that shows how the status of each agent has changed over time. Because higher numerical values in the graph represent higher severity levels, you can visually check the source of any problems that may occur. You can also drill down to a detailed report that describes the operating status of a specific agent.

Location

Reports/HealthCheck/Troubleshooting/Recent Past/Drilldown Only

Records

Health Check Detail (PD_HC)

Fields

Field name	Description
Polling Date and Time	Polling time
Agent	PFM - Agent or PFM - RM name
Host	PFM - Agent or PFM - RM host name
Agent Op Status	Operating status of the agent
Message Text	Detailed information about the agent operating status

Drilldown reports (field level)

Report name	Description
Agent Detail (Historical)	Shows the operating status of the selected agent in detail. Display this report by clicking the **Agent Op Status** or **Agent Op Status by Num** field.

(9) Agent Overview (Status Change)

Synopsis

The Agent Overview (Status Change) report displays an overview of the health check results. The information in this report is the same as the Agent Overview (Historical) report, with the exception that the Agent Overview (Status Change) report only displays fields that have changed. It does not contain a graph. You can also drill down from this report to a detailed report that describes the operating status of a specific agent. This report is available as a drilldown report from the System Overview (Status Change) report.

Location

```
Reports/HealthCheck/Troubleshooting/Recent Past/Drilldown
Only
```

Records

Health Check Detail (PD_HC)

Fields

Field name	Description
Polling Date and Time	Polling time
Agent	PFM - Agent or PFM - RM name
Host	PFM - Agent or PFM - RM host name
Agent Op Status	Operating status of the agent
Message Text	Detailed information about the agent operating status

Drilldown reports (field level)

Report name	Description
Agent Detail (Historical)	Shows the operating status of the selected agent in detail. Display this report by clicking the **Agent Op Status** field.

(10) Host Availability (4.0)

Outline

The Host Availability (4.0) report shows information such as the running time and rate of hosts that make up the system, based on the results of the health check. You can use this report to confirm the operating status of each host in table format, or view a line graph that shows how the running rate of each host has changed over time. This report is available as a drilldown report from the Hosts Availability (4.0) report.

Location

Reports/HealthCheck/Monthly Trend/Drilldown Only

Reports/HealthCheck/Status Reporting/Daily Trend/Drilldown Only

Records

Host Availability (PI_HAVL)

Field

Field name	Description
Host	Host name
Availability	Running rate (%)
Total Available Time	Running time within the monitoring time (second)
Total Monitoring Time	Monitoring time (second)

(11) Hosts Availability (4.0)

Outline

The Hosts Availability (4.0) report shows information such as the available time and availability of hosts that make up the system, based on the results of the health check. You can use this report to confirm the operating status of each host in table format, or view a line graph that shows how the running rate of each host has changed over time. You can drilldown to concentrate on a detailed report for a specific host.

Location

Reports/HealthCheck/Monthly Trend

Reports/HealthCheck/Status Reporting/Daily Trend

Records

Host Availability (PI_HAVL)

Field

490

Field name	Description
Host	Host name
Availability	Running rate (%)
Total Available Time	Running time within the monitoring time (second)
Total Monitoring Time	Monitoring time (second)

(12) Hosts Status (Real-Time) (4.0)

Outline

The Hosts Status (Real-Time) (4.0) report displays the health check result, consolidating the hosts that make up the system.

Location

Reports/HealthCheck/Troubleshooting/Real-Time

Records

Host Detail (PD_HOST)

Field

Field name	Description
Polling Date and Time	Date and time of polling
Host	Host name
Status	Host status

(13) Agent Detail (Historical)

Synopsis

The Agent Detail (Historical) report displays detailed health check results. This report displays the detailed operating status of agents in list format. You can use this report to view detailed information about a specific agent.

This report is available as a drilldown report from the System Overview (Historical / Status Change) and Agent Overview (Historical / Status Change) reports.

Location

```
Reports/HealthCheck/Troubleshooting/Recent Past/Drilldown
Only
```

Records

Health Check Detail (PD_HC)

Fields

Field name	Description
Polling Date and Time	Polling time
Agent	PFM - Agent or PFM - RM name
Host	PFM - Agent or PFM - RM host name
Agent Op Status	Operating status of the agent
Collector Op Status	Operating status of Agent Collector and Remote Monitor Collector services
Collector Op Status Last-Updated	Time when the operating status of Agent Collector and Remote Monitor Collector services were last updated
Store Op Status	Operating status of Agent Store and Remote Monitor Store services
Store Op Status Last-Updated	Time when the operating status of Agent Store and Remote Monitor Store services were last updated
AH Op Status	Operating status of the Action Handler service
AH Op Status Last-Updated	Time when the operating status of the Action Handler service was last updated
Message Text	Detailed information about the agent operating status

(14) Agent Detail (Real-Time)

Synopsis

The Agent Detail (Real-Time) report displays detailed health check results. This report displays the detailed operating status of agents in list format. You can use this report to view detailed information about a specific agent. This report is available as a drilldown report from the System Overview (Real-Time) report.

Location

```
Reports/HealthCheck/Troubleshooting/Real-Time/Drilldown
Only
```

Records

Health Check Detail (PD_HC)

Fields

Field name	Description
Polling Date and Time	Polling time

Field name	Description
Agent	PFM - Agent or PFM - RM name
Host	PFM - Agent or PFM - RM host name
Agent Op Status	Operating status of the agent
Collector Op Status	Operating status of Agent Collector and Remote Monitor Collector services
Collector Op Status Last-Updated	Time when the operating status of Agent Collector and Remote Monitor Collector services was last updated
Store Op Status	Operating status of Agent Store and Remote Monitor Store services
Store Op Status Last-Updated	Time when the operating status of Agent Store and Remote Monitor Store services was last updated
AH Op Status	Operating status of the Action Handler service
AH Op Status Last-Updated	Time when the operating status of the Action Handler service was last updated
Message Text	Detailed information about the agent operating status

I. Version Changes

I.1 Changes in 09-00

■ The following program product was added to the Performance Management products. It is also targeted for remote monitoring:

PFM - RM

■ JP1 system events or agent events issue notification can now be used for all events that occur in the Performance Management services.

■ The product name display function was added. This allows the user to specify and display service keys and service IDs in a new format.

■ New commands were added. These commands are compatible with commands in version 08-11 or earlier. Option formats have also been unified.

■ The recent operating status of the entire system and all services can now be monitored in a View Summary window.

■ The tiling display function was added. This allows you to display the graphs of multiple historical reports as thumbnails.

■ The field search function was added. You can use this function to specify keywords with the information you want to set in alarms or reports, and search monitored items by the keyword.

■ The quick-guide function was added. This function allows you to display reports without performing the conventional procedures used to define reports. The procedures for defining alarms have also simplified.

■ The definitions of displayed reports can now be edited in the View Report window.

■ The procedures for changing the operating host name for Performance Management products have been simplified.

■ Starting and stopping PFM - Manager, PFM - Base, and PFM - Web Console services can now be linked.

■ Internet Explorer 7.0 and Firefox 3 are now supported as monitoring console browsers.

■ Mozilla was excluded as a supported browser for the monitoring console.

■ A monitoring agent for virtual environments was added.

■ Remote monitors for Windows, UNIX, Oracle, and Microsoft SQL Server were added.

- The name *solution set* was changed to *monitoring template*.

- The alarm table in the monitoring template of the health check agent was changed from version 8.11 to 8.50 and 09.00.

- The alarm table in the monitoring template of the health check agent has been renamed as follows:

  PFM HealthCheck Template Alarms

- Windows Server 2008 is now supported.

- Graph images for reports can now be displayed after time correction.

- Bookmarks and combination bookmarks can now be configured with the `jpcbdef` command.

- PFM services that previously stopped abnormally during operation can now be automatically restarted.

- Multiple alarm tables can now be bound to a monitoring agent.

- Performance Management can now be used in an environment containing multiple hosts having the same name.

- Performance Management setup was simplified.

- PFM - Web Console can now be used in a UNIX environment.

- A description was appended. The appended description now states Solaris patches must be installed for version 09-00 or later.

- The data model versions for the health check agent now include version 5.0. Because of this, PI_HAVL, PD_HOST, and PI_SYS records were added.

- The alarm table versions in the monitoring template for the health check agent now include version 09.00. Because of this, Host Status Change, Host Not Available, Service Status Change, Service Abnormal(A), and Service Abnormal(S) alarms were added.

- The monitoring template reports for the health check agent now includes Host Availability (4.0), Hosts Availability (4.0), Hosts Status (Real-Time) (4.0), and System Summary (4.0).

I.2 Changes in 08-11

- The health check function is now supported. This allows you to monitor the operating statuses of monitoring agents or hosts that run monitoring agents.

- Tree view display in PFM - Web Console was improved.

- Reports from GUI can now be output in HTML format.

- Firefox is now supported as a monitoring console browser.

- You can specify a timeout to automatically log out after a set amount of time has passed without user operations or an automatic refresh.

- Properties specific to PFM - Agent can now be distributed as a batch.

- Registered reports in a bookmark and combination reports in a combination bookmark can now be output with commands.

- Store 2.0 is now supported.

- You can now use the `jpcrpt` command to output reports in HTML format.

- Multiple reports can now overlap.

- Action logs now can be output.

- File privileges for Windows were enhanced.

- PFM - Web Console now can now be used on Linux.

- UTF-8 can now be used as the LANG environment variable on Linux.

- Properties can now be distributed to agents.

- Reports registered in bookmarks and combination bookmarks can now be viewed as drilldown reports.

- Report definitions can now be viewed from the Reports tree.

- Reports can now be registered to bookmarks from the Agents tree.

- Monitoring agents associated with alarm tables can now be viewed.

I.3 Changes in 08-00

- PFM - Base has been added as the monitoring base.

- PFM - Web Console has been added as the monitoring console server.

- The status management function (Status Server service) has been added. This function manages the statuses of Performance Management services.

- The log file trapping function has been added. This function can convert the common message logs for Performance Management to JP1 events.

- The wrap-around file (`jpclogw`) method has been added as a storage method for common message logs output by Performance Management. The user can select one of the following two methods:

  - Sequential file (`jpclog`) method (conventional method)

  - Wrap-around file (`jpclogw`) method

- The Windows event log can be logged using the `jpcras` command.

I.4 Changes in 07-10

- For the JRE for the PFM-Manager's View Server, you can now specify a JRE installed in a location of your choosing.

I.5 Changes in 07-00

- Cluster systems are now supported.

- The OSs supported by PFM - Manager and PFM - View have been changed as follows:

Program name	Changes
PFM - Manager	Windows NT and Windows Server 2003 have been added.
PFM - View	Windows NT and Windows Server 2003 have been added.

- Operations in a network environment connected to multiple LANs are now supported.

- Starting of PFM - Agent in stand-alone mode is now supported.

- The installation log file to which installation failures are output has been added.

- The settings for specifying whether to collect PI records, and for specifying the collection interval, can now be changed.

- Index file creation processing for Store databases running during service startup is now performed during upgrade installation and database restoration.

- The monitoring time can now be set for report output processing.

J. Glossary

action

> An action is something that is automatically executed by Performance Management when monitored data reaches a threshold. An action might be any of the following:
>
> - Sending one or more emails
>
> - Executing one or more commands
>
> - Issuing one or more SNMP traps
>
> - Issuing one or more JP1 events

Action Handler

> One of the services provided by PFM - Manager or PFM - Base. This service executes an action.

administrative tools

> Various commands or functions in the GUI that are used to verify the service status or perform operations on performance data. The following can be done:
>
> - Configuring a service and displaying the status
>
> - Backing up and restoring performance data
>
> - Exporting performance data to a text file
>
> - Deleting performance data

Administrator Console

> Command prompt provided by Performance Management. If the UAC function of Windows Server 2008 is active, Administrator Console is used to execute commands that require administrator privileges.

agent

> PFM - Agent and PFM - RM services that collect performance data.

Agent Collector

> One of the services provided by PFM - Agent. This service collects or evaluates performance data by using thresholds set in alarms.

Agent monitoring

> For this operation, you first install an agent on the monitored server, and then monitor the server's operating status. Although you must install the agent on the monitored server, you can also use a rich variety of monitoring items to monitor the server's

operating status.

Agent Store

One of the services provided by PFM - Agent. This service stores performance data. The Agent Store service uses a database to record performance data. Each Agent Store service corresponds to a PFM - Agent.

alarm

Information that defines an action or event message executed when monitored data reaches a threshold.

alarm table

A table that includes one or more alarms for which the following information is defined:

- Object to be monitored (for example, process, TCP, or Web service)

- Information to be monitored (for example, CPU usage or number of received bytes per second)

- Conditions to be monitored (threshold)

baseline

An object that serves as historical reference data for a report. You can display a baseline as reference data on the same graph as a combination report.

binding

To associate an alarm with an agent. When an alarm and agent are bound, a user can be notified when performance data collected by the agent reaches the threshold defined in the alarm.

cluster system

Cluster systems are used to link multiple servers and run them as a single system. There are two types of cluster systems: HA (High Availability) cluster systems, and load-balancing cluster systems.

HA cluster systems are cluster systems that provide high availability. The objective of an HA cluster system is to be able to continue operations even if a failure occurs. If a failure occurs on a server that is executing a job, a different server that has been standing by can continue the job processing. This can prevent the transaction from being suspended when a failure occurs, and improves availability.

Load-balancing cluster systems balance and execute the processing load among multiple nodes. The objective is to increase the processing performance by balancing and executing the processing load among multiple nodes. Even if a failure occurs and the node stops, the availability of the system can be enhanced by switching processes to a different node.

This manual uses the term *cluster system* (by itself) to refer to an HA cluster system.

combination bookmark

An object that stores and manages multiple registered reports and baselines. You can display a combination report from a combination bookmark.

combination report window

A report window in which a registered report in a combination bookmark is displayed together with a baseline.

Correlator

One of the services provided by PFM - Manager. This service controls event sending between services. The service evaluates alarm statuses and, if a status exceeds a threshold, sends an alarm to the Trap Generator service and PFM - Web Console.

data group

A data collection that collects records at one time. One or more records exist in a single data group.

data model

A generic term for records or fields for each PFM - Agent or PFM - RM. Data models are managed by the version.

database ID

An ID, given to each record in PFM - Agent and PFM - RM, that indicates the database where records are stored. A database ID indicates the type of record stored in the appropriate database. The database IDs are as follows:

- PI

   Database for records of the PI record type.

- PD

   Database for records of the PD record type.

device ID

An identifier containing characters (1-255 bytes) that indicate the host on which this service has been started in the Performance Management system. A device ID is one part of a service ID.

drilldown report

Report that is associated with a report or a field of a report. A drilldown report is used to display detailed or related information for a particular report.

executing node

> The node that is executing jobs in each server system that makes up the cluster system (a node whose logical host is active).

failover

> To take over server job-execution processing from the executing node to the standby node when a failure occurs in the cluster system.

field

> An item (a column) in a record related to one type of performance data (such as the CPU usage percentage), which can have one or more pieces of performance data associated with it.

function ID

> A one-byte identifier that indicates the function type for services of Performance Management programs. A device ID is one part of a service ID.

HA cluster system

> A cluster system that provides high availability. The objective of an HA cluster system is to be able to continue operations even if a failure occurs. If a failure occurs in a server that is executing a job, a different server that has been standing by can continue the job processing. This can prevent the transaction from being suspended when a failure occurs, and improves availability.
>
> This manual uses the term *cluster system* (by itself) to refer to an HA cluster system.

health check

> A function that monitors the operating statuses of the following services or hosts:
>
> - PFM - Agent or PFM - RM services
>
> - Hosts running PFM - Agent or PFM - RM
>
> - Monitored hosts of PFM - RM
>
> This function is provided by PFM - Manager.

health check agent

> An agent that monitors the operating statuses of the following services or hosts:
>
> - PFM - Agent or PFM - RM services
>
> - Hosts running PFM - Agent or PFM - RM
>
> - Monitored hosts of PFM - RM

historical report

> These types of reports display the operating status of the monitored target from past to

present.

instance

This manual uses the term *instance* as follows:

- To indicate the format of a record

  A record that is recorded in a single line is called a *single-instance record*, a record that is recorded in multiple lines is called a *multi-instance record*. Each line in a multi-instance record is called an *instance*.

- To indicate the startup method of PFM - Agent and PFM - RM

  An agent monitoring a monitoring target on the same host by using a single agent is called a *single-instance agent*. An agent monitoring a monitoring target on the same host by using multiple agents is called a *multi-instance agent*. Each agent service of the multi-instance agent is called an *instance*.

instance number

An identifier that is a one-byte control number used by internal processing. A device ID is one part of a service ID.

lifetime

The period in which the integrity of performance data collected in each record is assured.

load-balancing cluster system

A system that balances and executes the processing load among multiple nodes. The objective is to increase processing performance by balancing and executing the processing load among multiple nodes. Even if a failure occurs and the node stops, the availability of the system can be enhanced by switching processes to a different node.

logical host

A logical server that is the execution environment for JP1 during operation on a cluster system. A system is switched between logical hosts when a failure occurs. A logical host has a dedicated IP address, and that IP address is taken over when failover occurs. Therefore, even if the physical server is switched due to a failure, clients can continue to access the same IP address and the system appears as if a single server were always working.

Master Manager

One of the services provided by PFM - Manager. This is the main service PFM - Manager provides.

Master Store

One of the services provided by PFM - Manager. This service manages the alarm

events issued from each PFM - Agent. The Master Store service uses a database to hold the event data.

Monitoring template

Defined alarms and reports prepared for PFM - Agent and PFM - RM. By using a monitoring template, you can easily monitor the operation status of PFM - Agent and PFM - RM without using complex definitions.

multi-instance agent

An Agent using a method that monitors monitoring targets on the same host by using multiple agents.

-> See *Instance*

multi-instance record

A record recorded in multiple lines. This record has a unique ODBC key field.

-> See *Instance*

Name Server

One of the services provided by PFM - Manager. This service manages service configuration information in a system.

ODBC key field

The ODBC key field is required when you use SQL to utilize the record data stored in the Store database in PFM - Manager or PFM - Base. For the ODBC key field, there are two types of keys; one is common to all records and the other is unique to each record.

open interface

A function that can link with JP1/IM or with a product compliant with ODBC or SNMP.

PD record type

-> See *Product Detail record type*

performance data

Operation status data for the resources collected from the system being monitored.

Performance Management

A generic term for the set of software required for monitoring and analyzing problems regarding system performance. Performance Management is made up of the following five program products:

- PFM - Manager

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- PFM - Web Console

- PFM - Base

- PFM - Agent

- PFM - RM

Performance Management ODBC driver

The ODBC driver prepared for the Open Data Access component of Performance Management. Including this driver enables you to access the data for Agent Store and Remote Monitor Store services from Microsoft ODBC-compliant application programs.

PFM - Agent

One of the Performance Management program products. PFM - Agent corresponds to the agent monitoring function. There are different types of PFM - Agent for applications, databases, and OSs. PFM - Agent has the following functions:

- Monitoring performance of the monitoring target

- Collecting and logging data about the monitored target

PFM - Base

One of the Performance Management program products. This provides base functions for monitoring operations in Performance Management. PFM - Base is a product required for running PFM - Agent and PFM - RM. PFM - Base has the following functions:PFM - Base has the following functions:

- Management tools such as various commands

- Common functions required for linking Performance Management with other systems

PFM - Manager

One of the Performance Management program products. PFM - Manager corresponds to the manager function. PFM - Manager has the following functions:

- Managing program products of Performance Management

- Managing events

PFM - Manager name

The name used for identifying fields stored in the Store database. This name is used in certain instances, such as when using commands to specify fields.

PFM - RM

One of the Performance Management program products. PFM - RM corresponds to the remote monitoring function. There are different types of PFM - RM for applications,

databases, and OSs. PFM - RM has the following functions:

- Monitoring performance of the monitoring target
- Collecting and logging data about the monitored target

PFM - View name

Another name for the PFM - Manager name. This name is more intuitive than the PFM - Manager name. For example, when the PFM - Manager name is INPUT_RECORD_TYPE, the corresponding PFM - View name will be Record Type. This name is used in certain instances, such as when specifying fields on the PFM - Web Console's GUI.

PFM - Web Console

One of the Performance Management program products. PFM - Web Console provides Web application server functionality to centrally monitor a Performance Management system by using a browser. PFM - Web Console has the following functions:

- GUI display
- Integrated monitoring and management function
- Defining reports and alarms

physical host

The environment specific to each server that makes up a cluster system. The physical host environment cannot be taken over to another server when failover occurs.

PI record type

-> See *Product Interval record type*

Primary host name

Operating host name of the group agent. The group agent monitors multiple monitoring targets as a batch. The host name of the monitored target that represents multiple monitoring targets is used as the host name of the group agent.

The default group agent, which is set to All, uses the operating host name of PFM - RM.

Product Detail record type

A record type that stores the performance data indicating the system status at a certain point, such as detailed information on currently running processes. The PD record type is used to display the following system statuses at a certain point:

- Operating status of the system
- Currently used file system space

product ID

A one-byte identifier that indicates which Performance Management program product provides the appropriate Performance Management program service is. The product ID is one part of a service ID.

Product Interval record type

A record type that stores performance data covering a certain time (interval), such as the number of processes per minute. The PI record type is used to analyze the following system statuses or system trends that change over time:

- Changes in the number of system calls that occurred within a certain time

- Changes in used file system space

real-time report

A report that indicates the current status of a monitoring target.

record

The format in which the collected performance data is stored. The type of record depends on each database of the Store database.

registered report

A report registered together with display conditions and agent information using the bookmark function. Once a report is registered, it is a straightforward process to display it.

Remote Monitor Collector

One of the services provided by PFM - RM. This service collects or evaluates performance data by using thresholds set in alarms.

Remote Monitor Store

One of the services provided by PFM - RM. This service stores performance data. The Remote Monitor Store service uses a database to record performance data. Each Remote Monitor Store service corresponds to a PFM - RM.

Remote monitoring

For this operation, because another host can be used to remotely monitor the server's operating status, you do not need to install the agent on the monitored server. This is useful for when you start monitoring a system that is already operating. Although fewer items are monitored than in agent monitoring, you can use a single PFM - RM to collect and manage performance data from multiple monitoring targets.

report

Definitions that define the information when the performance data collected by PFM - Agent or PFM - RM is graphically displayed. The following information is defined:

- Records to be displayed in the reports
- Items of performance data
- Display format of the performance data (for example, a table or graph)

series group

A way of grouping the objects in a combination bookmark by their display format. You can assign series groups when editing a combination bookmark.

service ID

A unique ID given to the service of a Performance Management program. When you use a command to verify the system configuration of Performance Management or to back up the performance data of an individual agent, specify the service ID for the Performance Management program that will execute the command. The service ID format depends on the settings for the product name display function. For details on service ID format, see *4.1.2 Displaying and specifying services*.

single-instance agent

An agent using a method that monitors a monitoring target on the same host by using a single agent.

-> See *Instance*.

single-instance record

A record that is recorded in one line. This record does not have a unique ODBC key field.

-> See *Instance*.

stand-alone mode

The state in which PFM - Agent or PFM - RM runs alone. You can still collect the performance data by starting only PFM - Agent or PFM - RM even when the Master Manager service and the Name Server service of PFM - Manager cannot run due to an error or other reasons.

standby node

A node that is standing by to be able to take over a job if the executing node fails, in each server system that makes up a cluster system.

Store database

A database that stores performance data collected by the Agent Collector and Remote Monitor Collector services.

Trap Generator

One of the services provided by PFM - Manager. This service issues SNMP traps.

UAC

Abbreviation for User Account Control. In Windows Server 2008, even if you log on as a member of the Administrator group, the administrator privileges are limited. When you attempt to run a program that requires administrator privileges, a UAC popup displays, prompting you to upgrade to administrator.

UAC popup

Popup window that prompts you to upgrade to administrator if the UAC function of Windows Server 2008 is active. When you upgrade, the applicable program launched has administrator privileges.

View Server

One of the services provided by PFM - Manager. This service connects PFM - Web Console and PFM - Manager.

WRP

Abbreviation for Windows Resource Protection. Files protected by WRP cannot be deleted or modified. This function is independent of UAC. You cannot delete or modify the files, even if you have administrator privileges.

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