

*For Windows Systems*

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

3020-3-R48(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-242C-AR97 Job Management Partner 1/Performance Management - Web Console version 09-00 (for Windows Server 2003)  
P-2A2C-AR97 Job Management Partner 1/Performance Management - Web Console version 09-00 (for Windows Server 2008)  
P-9S2C-AR92 Job Management Partner 1/Performance Management - Web Console version 09-00 (for Linux 5 (x86), Linux 5 Advanced Platform (x86), Linux 5 (AMD/Intel 64), Linux 5 Advanced Platform (AMD/Intel 64))  
P-242C-AC97 Job Management Partner 1/Performance Management - Agent Option for Platform version 09-00 (for Windows Server 2003)  
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#### ■ **Edition history**

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# Preface

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This manual explains the features of Job Management Partner 1/Performance Management - Agent Option for Platform, and the records it collects.

Note that in this manual, *Job Management Partner 1* is hereafter abbreviated as *JP1*.

## Intended readers

This manual is intended for the following users:

- Those who want to learn about the features of JP1/Performance Management - Agent Option for Platform and the records it collects
- Those who want to set up and operate a system that uses JP1/Performance Management to collect Windows performance data

This manual also assumes that the reader is familiar with Windows.

For details about setting up and operating a system that uses JP1/Performance Management, the reader is directed to the following manuals as well:

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

## Organization of this manual

This manual is organized into the parts listed below. Note that this manual applies to the following OSs: Windows Server 2003 (Windows Server 2003 (x86) and Windows Server 2003 (x64)) and Windows Server 2008. When there are differences in functionality between OSs, this manual provides a separate description for each OS.

### PART 1: Overview

Part 1 provides an overview of JP1/Performance Management - Agent Option for Platform.

### PART 2: Setup and Operation

Part 2 explains installation and setup of JP1/Performance Management - Agent Option for Platform, and how to collect user records.

### PART 3: Reference

Part 3 explains the monitoring templates, records, and messages for JP1/Performance Management - Agent Option for Platform.

### PART 4: Troubleshooting

Part 4 explains the actions to take when a problem occurs with JP1/Performance Management - Agent Option for Platform.

## Related publications

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

For JP1/Performance Management publications:

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

For Job Management Partner 1 publications:

- *Job Management Partner 1/Software Distribution Administrator's Guide Volume 1* (3020-3-S81(E)), for Windows systems

## Conventions: Abbreviations

This manual uses the following abbreviations for product names:

Abbreviation		Full name or meaning
AIX		AIX 5L V5.3
		AIX V6.1
HP-UX	HP-UX 11i	HP-UX 11i V2 (IPF)
		HP-UX 11i V3 (IPF)
Internet Explorer		Microsoft(R) Internet Explorer
		Windows(R) Internet Explorer(R)
IPF		Itanium(R) Processor Family
JP1/IM	JP1/IM - Manager	Job Management Partner 1/ Integrated Management - Manager

Abbreviation			Full name or meaning
	JP1/IM - View		Job Management Partner 1/ Integrated Management - View
JP1/NETM/DM			Job Management Partner 1/ NETM/DM Client
			Job Management Partner 1/ NETM/DM Manager
			Job Management Partner 1/ NETM/DM SubManager
Linux	Linux (IPF)	Linux 5 Advanced Platform (IPF)	Red Hat Enterprise Linux(R) 5 Advanced Platform (IPF)
		Linux 5 (IPF)	Red Hat Enterprise Linux(R) 5 (IPF)
		Linux AS 4 (IPF)	Red Hat Enterprise Linux(R) AS 4 (IPF)
	Linux (x64)	Linux 5 Advanced Platform (AMD/Intel 64)	Red Hat Enterprise Linux(R) 5 Advanced Platform (AMD/Intel 64)
		Linux 5 (AMD/Intel 64)	Red Hat Enterprise Linux(R) 5 (AMD/Intel 64)
	Linux (x86)	Linux 5 Advanced Platform (x86)	Red Hat Enterprise Linux(R) 5 Advanced Platform (x86)
		Linux 5 (x86)	Red Hat Enterprise Linux(R) 5 (x86)
	NNM	HP NNM	
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

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

Abbreviation		Full name or meaning
	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
Solaris	Solaris 9	Solaris 9 (SPARC)
	Solaris 10	Solaris 10 (SPARC)
		Solaris 10 (x64)
		Solaris 10 (x86)
Win32		Win32(R)
Windows Server 2003	Windows Server 2003 (x64) or 2003 (x64)	Microsoft(R) Windows Server(R) 2003, Enterprise x64 Edition
		Microsoft(R) Windows Server(R) 2003, Standard x64 Edition
		Microsoft(R) Windows Server(R) 2003 R2, Enterprise x64 Edition
		Microsoft(R) Windows Server(R) 2003 R2, Standard x64 Edition
	Windows Server 2003 (x86) or 2003 (x86)	Microsoft(R) Windows Server(R) 2003, Enterprise Edition
		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)

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

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

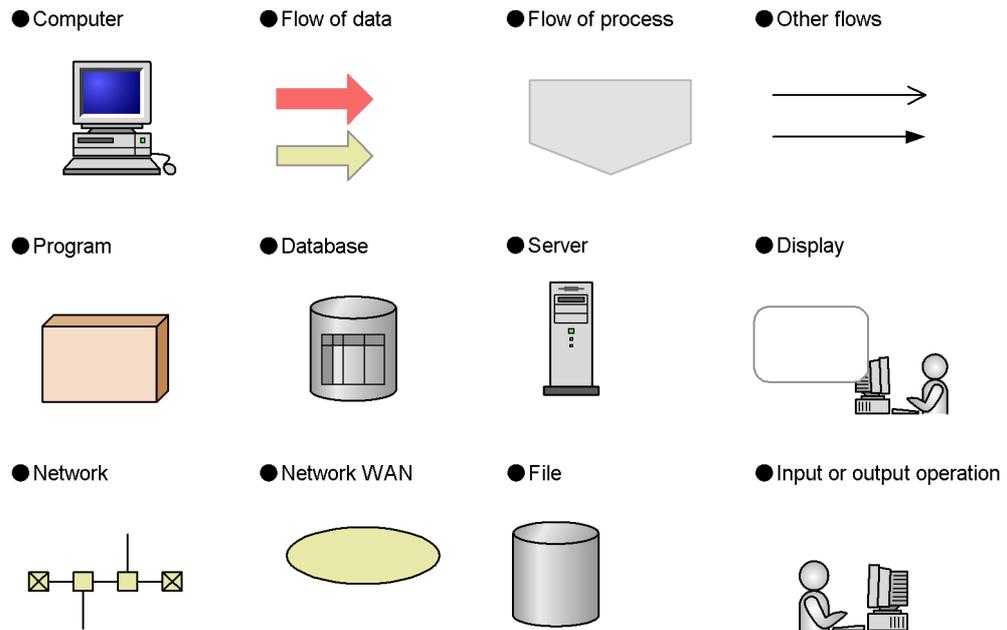
This manual also uses the following abbreviations:

Abbreviation	Full name or meaning
API	Application Programming Interface
CPU	Central Processing Unit
FQDN	Fully Qualified Domain Name
FTP	File Transfer Protocol
HTML	Hyper Text Markup Language
HTTP	Hyper Text Transfer Protocol
ICMP	Internet Control Message Protocol
IMAP	Internet Message Access Protocol
IP	Internet Protocol
IPv4	Internet Protocol Version 4
IPv6	Internet Protocol Version 6
IPX	Internetwork Packet eXchange
LAN	Local Area Network
LDAP	Lightweight Directory Access Protocol
MAPI	Messaging API
MDB	Mailbox Data Base
MTA	Message Transfer Agent
NAPT	Network Address Port Translation

<b>Abbreviation</b>	<b>Full name or meaning</b>
NAT	Network Address Translation
NBT	NetBIOS over TCP/IP
NIC	Network Interface Card
NNTP	Network News Transfer Protocol
ODBC	Open Database Connectivity
OS	Operating System
RAS	Remote Access Service
RPC	Remote Procedure Call
SCM	Service Control Manager
SMTP	Simple Mail Transfer Protocol
SNMP	Simple Network Management Protocol
SPX	Sequenced Packet eXchange
TCP	Transmission Control Protocol
TCP/IP	Transmission Control Protocol/Internet Protocol
UDP	User Datagram Protocol
URL	Uniform Resource Locator
WAN	Wide Area Network
Web	World Wide Web
WINS	Windows Internet Name Service
WOW64	Windows On Windows 64

## Conventions: Diagrams

This manual uses the following conventions in diagrams:



## Conventions: Fonts and symbols

Font and symbol conventions are classified as:

- General font conventions
- Conventions in syntax explanations

These conventions are described below.

### General font conventions

The following table lists the general font conventions:

Font	Convention
<b>Bold</b>	<p>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:</p> <ul style="list-style-type: none"> <li>• From the <b>File</b> menu, choose <b>Open</b>.</li> <li>• Click the <b>Cancel</b> button.</li> <li>• In the <b>Enter name</b> entry box, type your name.</li> </ul>

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

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

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

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

### Conventions in syntax explanations

Syntax definitions appear as follows:

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

The following table lists the conventions used in syntax explanations:

Example font or symbol	Convention
<code>StoreDatabase</code>	Code-font characters must be entered exactly as shown.
<i>database-name</i>	This font style marks a placeholder that indicates where appropriate characters are to be entered in an actual command.
<b>SD</b>	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.
	Only one of the options separated by a vertical bar can be specified at the same time.
...	An ellipsis (...) indicates that the item or items enclosed in ( ) or [ ] immediately preceding the ellipsis may be specified as many times as necessary.

Example font or symbol	Convention
( )	Parentheses indicate the range of items to which the vertical bar ( ) or ellipsis (...) is applicable.

### Conventions for mathematical expressions

The following table lists the conventions used in mathematical formulas:

Symbol	Meaning
x	Multiplication sign
/	Division sign

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

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

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

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

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

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

### Conventions: Formats of commands in this manual

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

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

Example:

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

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

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

## Conventions: KB, MB, GB and TB

This manual uses the following conventions:

- 1 KB (kilobyte) is 1,024 bytes.
- 1 MB (megabyte) is 1,024<sup>2</sup> bytes.
- 1 GB (gigabyte) is 1,024<sup>3</sup> bytes.
- 1 TB (terabyte) is 1,024<sup>4</sup> bytes.

## 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 folders

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

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

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

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

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

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

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

Default installation folder for PFM - Web Console

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

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

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

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

## **Conventions: Version numbers**

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

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

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

## **NNM products supported by Performance Management**

Performance Management supports linkage with the following products:

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

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

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

- HP Network Node Manager i Software v8.10

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## **Chapter**

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# **1. Overview of PFM - Agent for Platform**

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

- 1.1 Features of PFM - Agent for Platform
- 1.2 Overview of collecting and managing performance data
- 1.3 Example of performance monitoring operation

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## 1.1 Features of PFM - Agent for Platform

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PFM - Agent for Platform is a program for collecting and managing performance data to monitor the performance of a system running under Windows. This program is installed and used on the host to be monitored.

PFM - Agent for Platform has the following features:

- Analysis of Windows operating status

From the Windows system being monitored, you can use PFM - Agent for Platform to collect and summarize performance data, such as CPU usage and the number of active processes. By displaying the trends in graphs, you can easily analyze Windows operating status.

- Early detection of problems in Windows operation and provision of information for troubleshooting

If a problem, such as a system resource shortage, occurs in the Windows system being monitored, PFM - Agent for Platform can send an email notification, for example, to the user to ensure early detection of the problem. Furthermore, by graphically displaying the information related to the problem, PFM - Agent for Platform can provide troubleshooting information.

PFM - Agent for Platform requires PFM - Manager and PFM - Web Console.

*Reference note:*

In addition to PFM - Agent for Platform, PFM - RM for Platform is another product that can analyze Windows operation statuses for Performance Management. PFM - RM for Platform does not need to be installed on the monitored host, allowing host performance data to be monitored without any modification to the monitored host environment (called *agentless monitoring*). Note that PFM - RM for Platform collects fewer types of performance data when compared to PFM - Agent for Platform, but a single instance of PFM - RM for Platform can monitor performance data for multiple hosts.

Consider installing PFM - RM for Platform to implement agentless monitoring or collect and manage performance data for multiple monitored hosts.

PFM - Agent for Platform is explained in detail below.

### 1.1.1 Collect Windows performance data

You can use PFM - Agent for Platform to collect Windows performance data, such as system resource usage.

PFM - Agent for Platform lets you use performance data in the following ways:

- Graphically displaying Windows operating status

Using PFM - Web Console, you can process performance data into a graphical format called *report* and display it. Reports make it easy to analyze the Windows operating status.

The following types of reports are available:

- Real-time report

This report shows the current status of the Windows system being monitored. It is used primarily for checking the system's current status and problems. The real-time performance data collected is used to directly display a real-time report.

- Historical report

This report shows the status of the Windows system being monitored from past to present. The report is used primarily for analyzing system trends. Performance data stored in the database of PFM - Agent for Platform is used to display a historical report.

- Using performance data to determine whether a problem has occurred

If the performance data value collected indicates some sort of error, an action can be taken, such as notifying the user.

### 1.1.2 Collect performance data according to its characteristics

Performance data is collected in the form of a *record*. Each record is further divided into units called *fields*. Records and fields are generically referred to as *data models*.

According to their characteristics, records can be classified into two types. The kind of performance data to be collected by each type of record is defined by PFM - Agent for Platform. Using PFM - Web Console, the user can select the kinds of performance data to be collected as records.

The following record types are available in PFM - Agent for Platform:

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

Performance data for a specific duration (interval), such as the number of active processes during every minute, is collected as a PI record. Use the PI record type when you want to analyze the changes and trends in the system status over time.

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

Performance data that indicates the system status at a given point in time, such as detailed information on the processes that are currently active, is collected as a PD record. Use the PD record type when you want to determine the system status at a given point in time.

For details about these record types, see 5. *Records*.

### 1.1.3 Save performance data

By saving the collected performance data in the database of PFM - Agent for Platform called the *Store database*, you can save the performance data up to the present and analyze the trends in the Windows operating status. To analyze trends, you use historical reports.

Using PFM - Web Console, the user can select the performance data records to be saved in the Store database. For details about how to select records in PFM - Web Console, see the chapter explaining creation of reports for operation analysis in the manual *Job Management Partner 1/Performance Management User's Guide*.

### 1.1.4 Notify about problems in Windows operations

Performance data collected by PFM - Agent for Platform can be displayed as a report on Windows performance, and can warn the user when a Windows operation problem or error occurs.

For example, when the amount of available system resources falls to 10% of its capacity, an email notification can be sent to the user. To accomplish this, available system resource level of less than 10% is set as the threshold, and PFM - Agent for Platform can be set to send an e-mail notification when this threshold is reached. The operation that occurs when the threshold is reached is called an *action*. The following types of actions are available:

- Email transmission
- Command execution
- SNMP trap issuance
- JP1 event issuance

Thresholds and actions are defined in a unit called an *alarm*. A table in which one or more alarms are collected is called an *alarm table*. After you define an alarm table, you associate it with PFM - Agent for Platform. The operation of associating an alarm table with PFM - Agent for Platform is called *binding*. Once binding occurs, when the performance data collected by PFM - Agent for Platform reaches the threshold defined in the alarm, the user can be notified.

By defining alarms and actions in this way, you can detect Windows operational problems early and take the necessary corrective measures.

For details about how to specify alarms and actions, see the chapter explaining how to use alarms to monitor operations in the manual *Job Management Partner 1/Performance Management User's Guide*.

### 1.1.5 Easily define alarms and reports

PFM - Agent for Platform provides a *monitoring template*, which contains reports and alarms in which necessary information is already defined. The monitoring template facilitates preparation for monitoring Windows operating statuses without complex definitions. The monitoring template can also be customized to suit the user environment. For details about how to use the monitoring template, see the chapter explaining the creation of reports for operation analysis or operation monitoring by alarms in the manual *Job Management Partner 1/Performance Management User's Guide*. For details about the monitoring template, see *4. Monitoring Templates*.

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## 1.2 Overview of collecting and managing performance data

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The methods of collecting and managing performance data differ depending on the type of record that stores performance data. Records in PFM - Agent for Platform are classified into the following types:

- PI record type
- PD record type

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

- Performance data collection methods

For details about the performance data collection methods, see the chapter providing an overview on the data handled by Performance Management in the manual *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

For details about the performance data values that are collected, see 5. *Records*.

- Performance data management methods

For details about how to manage performance data, see the chapter explaining how to manage operation monitoring data in the manual *Job Management Partner 1/Performance Management User's Guide*.

You use PFM - Web Console to select which records collected and managed by PFM - Agent are to be used as performance data. For details about how to perform selection, see the chapter explaining how to manage operation monitoring data in the manual *Job Management Partner 1/Performance Management User's Guide*.

Note that, in addition to the default performance data, PFM - Agent for Platform can collect other types of performance data and store the data in records. These records are called *user-defined records*. For details about how to collect user-defined records, see 3. *User-Defined Record Collection*.

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## 1.3 Example of performance monitoring operation

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To maintain stable system operation, it is important to monitor performance in order to have a good understanding of the status of a system. This section explains how to use PFM - Agent for Platform to monitor performance.

### 1.3.1 Overview of performance monitoring

This subsection provides an overview of performance monitoring.

#### (1) *Objective of performance monitoring*

The monitoring of performance is an important task in the creation and management of a system environment.

You can achieve the following major performance monitoring objectives by using PFM - Agent for Platform:

- Determine the causes of bottlenecks (by analyzing performance data).
- Understand load characteristics and their impact on the corresponding system resources (by analyzing performance data trends).
- Verify whether the system is operating correctly (by monitoring it).

Certain types of bottlenecks can affect the operating performance of the entire system, such as bottlenecks produced by the following causes:

- Insufficient memory
- Monopolization of specific resources by programs
- A damaged subsystem
- An incorrect subsystem configuration (for example, 10 Mbps is set for a 100-Mbps NIC)
- Unbalanced subsystem loads

By monitoring performance under different conditions (such as different numbers of users connected concurrently) and by monitoring performance continuously, you can check the load characteristics and the impact on the corresponding system resources in the system environment. The benefits of such monitoring are as follows:

- Changing and adjusting the system configuration are simplified.
- System resource upgrades can be planned.

Checking whether a production system is operating correctly is extremely important. You can check whether the system environment is operating correctly by using the following types of monitoring together with performance monitoring:

## 1. Overview of PFM - Agent for Platform

- Monitoring of the operation of processes that provide system functionality
- Monitoring of the operation of services that are prerequisite for the system
- Monitoring the system for invalid processes

Using PFM - Agent for Platform as described above to correctly monitor performance is vital for stable system operation.

This section explains how you can use PFM - Agent for Platform to monitor performance to ensure stable system operation.

This section uses examples to explain the various methods of performance monitoring. Note, however, that the thresholds used in the examples are not applicable in all situations. Accordingly, actual thresholds must be determined only after baselines are selected. In addition, other settings will be dependent on the operating requirements of the system.

### **(2) Most important system resources in need of performance monitoring**

The performance monitoring performed by PFM - Agent for Platform treats the following system resources as being the most important:

- Processor
- Memory
- Disks
- Network
- Processes
- Services

In addition, PFM - Agent for Platform uses the following information, which is useful for detecting problems with the OS and abnormal processes:

- Event logs

PFM - Agent for Platform provides a monitoring template containing these important items. This section focuses on explaining how monitoring templates are used to perform monitoring. This section also provides related information for advanced monitoring.

### **(3) Determining baselines**

Determining baselines is a task in which system values unlikely to affect normal system operation are determined from the performance measurement results.

PFM products use baseline values as thresholds for monitoring system operation. The determination of baselines is therefore an important task for successfully monitoring performance.

Note the following recommendations when you determine baselines:

- Measure system performance at peak load (for example, when a high-load test is run for the operating environment).
- Thresholds depend greatly on the system configuration. Therefore, performance should be measured again to redetermine the baselines if system resources and the operating environment have been changed.

### 1.3.2 How to monitor performance

The following explains how to monitor performance for each system resource, and provides examples of performance data collection.

- Record IDs are used as record names, and PFM - View names are used as field names. For details about the formal record names and field names, see *5. Records*.
- Fields are not explained in detail. For details about fields, see *5. Records*.
- If you want to monitor information from multiple programs together, see *3.2.4 Settings for collecting workgroup information*.
- If you want to monitor information about the application operating status, see *3.2.5 Settings for collecting application operation and non-operation information*.

#### (1) Processor

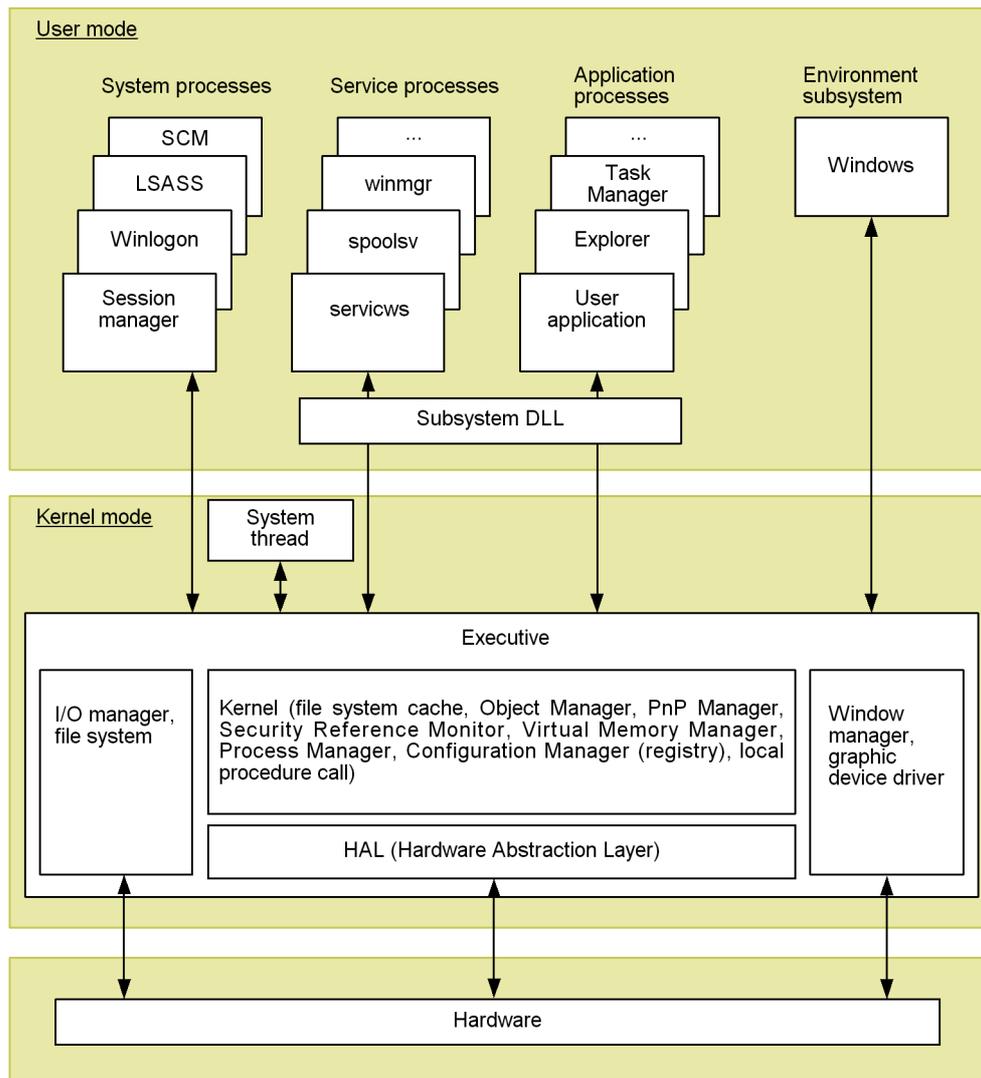
This subsection explains how to monitor processor performance.

##### (a) Overview

By monitoring processor performance, you can check performance trends for the entire system.

In Windows, as illustrated in the following figure, processes are executed in two processor access modes: user mode and kernel mode. This figure provides an overview of the Windows architecture.

Figure 1-1: Overview of the Windows architecture



You can also check performance trends for the entire system by monitoring the number of queued jobs.

Jobs, such as processes, are executed by the CPU according to the schedule determined by the OS. The number of queued jobs is the number of jobs that are waiting to be executed by the CPU. When the overall system load is high, the number of queued jobs tends to increase.

The monitoring templates provide functionality such as CPU Usage alarms and CPU

### Status (Multi-Agent) reports.

To monitor processor performance with more detail than with the monitoring templates, the processor usage per processor, processor usage per process, processor queue count, and processor interrupts from hardware can also be monitored.

The following table lists and describes the principal records and fields related to processor monitoring.

*Table 1-1: Principal records and fields related to processor monitoring*

Record	Field	Description (example)
PI_PCSR	CPU %	The CPU usage for a processor. If the value of this field continues to be at or above the threshold (normally 85%), the processor might be a system bottleneck.#
	Privileged CPU %	The percentage of time that the workgroup was using the processor in privileged mode. If the value of the CPU % field in the PI_PCSR record continues to be at or above the threshold, there might be a problem with a specific application process (including a service) or system process (including a service).#
	User CPU %	The CPU usage for a processor executed in the user mode. If the value of the CPU % field in the PI_PCSR record continues to be at or above the threshold, there might be a problem with a specific application process (including a service).#
PI_SVRQ	Queue Length	The current length of the CPU server operation queue. If the value of this field continues to be at or above the threshold (2), the processor is busy.
PI	Processor Queue Length	The number of threads ready to be executed in the processor queue. If this value continues to be at or above threshold (2), this indicates that the processor is congested.
	CPU %	The processor usage (%). That is, the percentage of time that the processor was executing non-idle threads. The maximum value is 100, even in a multi-processor environment.
	Privileged CPU %	The CPU usage in the kernel mode. If the value of the CPU % field in the PI record continues to be at or above the threshold, there might be a problem with a specific application process (including a service) or system process (including a service).
	User CPU %	The CPU usage in the user mode. If the value of the CPU % field in the PI record continues to be at or above the threshold, there might be a problem with a specific application process (including a service).
	Total Interrupts/sec	The number of hardware interrupts processed per second. If the value of this field has increased substantially when there are no system activities, there might be a hardware problem (for example, there is a slow device burdening the processor with hardware interrupts).

Record	Field	Description (example)
PI_PCSR	Interrupts/sec	The number of hardware interrupts processed by a processor per second. This field is used when the Total Interrupts/sec field in the PI record is monitored for each processor.

#

This field is used when monitoring is to be performed for each processor.

In a multi-processor environment, the system CPU usage is represented by the average usage of all CPUs. Therefore, check the CPU usage for each CPU.

To identify processes that are causing a bottleneck, check the CPU usage for each process.

The following table lists and describes the principal records and fields related to the process monitoring in a multi-processor environment.

*Table 1-2: Principal records and fields related to processor monitoring in a multi-processor environment*

Record	Field	Description (example)
PD_PDI	CPU %	The CPU usage for a processor. If the value of this field continues to be at or above the threshold, the processor might be a processor bottleneck.#
	Privileged CPU %	The percentage of time that the workgroup was using the processor in privileged mode. If the value of the CPU % field continues to be at or above the threshold and the Privileged CPU % value is close to the CPU % value, an API function issued by the process might be a processor bottleneck.#
	User CPU %	The CPU usage for a process executed in the user mode. If the value of the CPU % field continues to be at or above the threshold and the User CPU % value is close to the CPU % value, the process's processing might be a processor bottleneck.#

#

In a multi-processor environment, the maximum usage value that can be displayed is equal to the number of processors x 100 (%).

**(b) Monitoring methods**

- **Monitoring processor usage**

System-wide processor usage can be monitored using the CPU Usage alarm provided by the monitoring templates.

The processor usage (the CPU % field of the PI record) allows you to monitor the

processor load status. For details, see *1.3.3(1)(a) Monitoring template*.

- **Monitoring processor congestion**

In addition to processor usage, you can monitor processor congestion (the number of queued requests) to monitor the processor load status.

Monitoring both processor congestion and processor usage is an effective way to monitor the processor load status.

If a value at or above the threshold is displayed for the processor usage and queue length (`Queue Length` field in the `PI_SVRQ` record), the processor is probably congested.

Note that the threshold for the number of threads in the queue (`Processor Queue Length` field in the `PI` record) is about 2. If a value of 10 or more is displayed for this value, the system capacity is being exceeded. This value can be used as a guideline for determining whether to upgrade the processor or whether to add processors.

For definition examples, see *1.3.3(1)(b) Definition examples other than for monitoring templates*.

- **Checking processes whose processor usage is high**

If you decide that a bottleneck might have occurred after monitoring processor usage and process congestion, use a real-time report (the `CPU %` field of the `PD_PDI` record) to find processes that are monopolizing the processor.

If no such processes exist, the system environment is inadequate for the processing. In this case, you might need to upgrade the processor or add processors.

For definition examples, see *1.3.3(1)(b) Definition examples other than for monitoring templates*.

## (2) **Memory**

This subsection explains how to monitor memory performance.

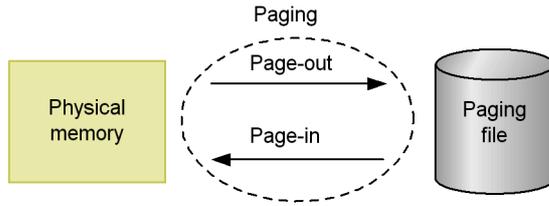
### (a) **Overview**

You can monitor memory performance to detect physical memory shortages and incorrect process operations.

Memory consists of physical memory and a paging file, as illustrated below. However, because the causes of bottlenecks are not limited to a small amount of physical memory or a small paging file, the paging status, page faults, and other items related to efficient memory usage must be monitored as well.

The following figure illustrates the configuration of the memory space.

Figure 1-2: Conceptual diagram of the memory space



Insufficient physical memory degrades overall system performance. Memory areas not accessed by programs for a long time are saved to the paging file, and are loaded into physical memory on demand. Physical memory is efficiently used in this manner. Note, however, that paging file access is markedly slower than physical memory access. Therefore, frequent paging or frequent page faults will considerably delay system processing.

- Paging

Paging is the movement of code and data between physical memory and a page file. Loading from the paging file into physical memory is referred to by the term *page-in*, and saving from physical memory to the paging file is referred to by the term *page-out*.

- Page fault

A page fault is an attempt to access to an area that does not exist in physical memory.

Because paging often occurs even in normal processing, measure performance when the system is operating stably before attempting to determine proper thresholds.

The Available Memory alarm is provided by the monitoring templates. If you want to perform more detailed monitoring, see the following table, which lists and describes the principal records and fields related to memory monitoring.

Table 1-3: Principal fields related to memory monitoring

Record	Field	Description (example)
PI	Pages/sec	The number of operations that caused paging per second. If the value of this field continues to be at or above the threshold (5), memory might be a system bottleneck. Note, however, that if this status is temporary, the maximum allowable value can be 20, depending on the case.
	Page Faults/sec	The number of page faults occurring per second. If the value of this field continues to be at or above the threshold (5), memory might be a system bottleneck.

Record	Field	Description (example)
	Data Map Hits %	The percentage of the number of requests that mapped a page to the file system cache. If the value of this field continues to be low, memory might be a system bottleneck.
	Total Physical Mem Mbytes	The amount of physical memory.
	Available Mbytes	The amount of available physical memory.
	Used Physical Mem Mbytes	The amount of physical memory in use.
	% Physical Mem	Physical memory usage.
	Commit Limit Mbytes	The amount of virtual memory.
	Non Committed Mbytes	The amount of available virtual memory.
	Committed Mbytes	The amount of virtual memory in use. If the value of this field continues to be at or above the threshold (the Total Physical Mem Mbytes field value of the PI record), a larger amount of memory might be required.
	% Committed Bytes in Use	Virtual memory usage. If the value of this field continues to be at or above the threshold (determined by the system load status), the paging file might need to be expanded.
PD_PAGF	% Usage	Paging file usage. If the value of this field continues to be at or above the threshold (determined by the system load status), the paging file might need to be expanded.

The cause of a system memory shortage is not always physical memory itself. A problem with a program can also cause a shortage. By monitoring memory usage for each process, you can identify the cause of shortages. If there is a process improperly occupying memory or if the amount of memory used by a process continues to increase steadily, the program running the process is likely to be defective.

The following table lists and describes the principal records and fields related to monitoring the memory usage of a specific process.

*Table 1-4: Principal fields related to the memory monitoring for each process*

Record	Field	Description (example)
PI	Pool Nonpaged Bytes	The amount of physical memory that is being used and cannot be paged out. If the value of this field continues to increase even when server activities are not increasing, a process causing a memory leak might exist.

Record	Field	Description (example)
PD_PDI	Page Faults/sec	The number of page faults occurring per second. A process causing a bottleneck can be detected from the frequency of process-specific page faults.
	Pool Nonpaged Kbytes	The amount of other types of memory and the number of handles being used. If the value of any of these fields continues to increase, a process causing a memory leak might exist.
	Pool Paged Kbytes	
	Working Set Kbytes	
	Page File Kbytes	
	Private Kbytes	
	Handle Count	

### (b) Monitoring methods

- **Monitoring the amount of available physical memory**

The unused size for physical memory (`Available Mbytes` field in the PI record) can be monitored using the Available Memory alarm provided by the monitoring templates.

For details, see *1.3.3(2)(a) Monitoring template*.

- **Monitoring the usage status of virtual memory**

You can use the usage status of virtual memory as a guideline for determining whether to increase physical memory.

Even when memory usage is temporarily high, if the high load status does not persist, performance degradation might be permissible. Therefore, monitoring both the load status of virtual memory and the usage status of virtual memory is recommended.

If the amount of used virtual memory (the `Committed Mbytes` field of the PI record) is larger than the total amount of physical memory (the `Total Physical Mem Mbytes` field of the PI record), more memory might be required.

For definition examples, see *1.3.3(2)(b) Definition examples other than for monitoring templates*.

- **Monitoring the load status of virtual memory**

You can use the load status of virtual memory as a guideline for determining whether to increase physical memory.

Even though memory usage is temporarily high, if the high load status does not persist, performance degradation might be permissible. Therefore, monitoring both the load

status of virtual memory and the usage status of virtual memory is recommended.

If the number of page faults (the `Page Faults/sec` field of the `PI` record) is at or above the threshold, the amount of memory allocated on the server might be less than the amount of memory secured by applications.

If the paging frequency (the `Pages/sec` field of the `PI` record) is at or above the threshold, the amount of physical memory might be insufficient.

For definition examples, see *1.3.3(2)(b) Definition examples other than for monitoring templates*.

- **Checking whether a memory leak has occurred**

A memory leak, which decreases the amount of available memory, might prevent the entire system from operating correctly. You can detect memory leaks by checking the line graph of a historical report for whether the amount of nonpaged-pool memory (the `Pool Nonpaged Bytes` field of the `PI` record) is increasing steadily.

If the amount of nonpaged-pool memory (the `Pool Nonpaged Bytes` field of the `PI` record) is increasing steadily even when the number of active processes has not changed, a process causing a memory leak might exist.

For definition examples, see *1.3.3(2)(b) Definition examples other than for monitoring templates*.

- **Monitoring the amount of memory used by processes**

If you think a memory leak has occurred, you can identify the process that is causing the memory leak.

To do so, in a status in which server activities are not increasing, use a real-time report to monitor the amount of memory used by each process for a period from a few to some tens of minutes. For this monitoring, you can use, for example, the `Working Set Kbytes` field of the `PD_PDI` record. Then, in the displayed line graph, check for a process whose memory usage is increasing.

If you identify a process causing a memory leak, you can contact the vendor or take other appropriate action.

For definition examples, see *1.3.3(2)(b) Definition examples other than for monitoring templates*.

### **(3) Disks**

This subsection explains how to monitor disk performance.

#### **(a) Overview**

You can monitor disk performance to detect disk resource shortages and bottlenecks caused by a disk. Continuous monitoring of disk performance allows you to check for trends in increased disk space usage so that you can determine an appropriate

configuration for the system or determine when the system configuration should be expanded.

A disk stores programs, the data used by the programs, and other data. If the amount of free disk space becomes insufficient, data might be lost or the system response might slow down.

If a program that is performing a disk I/O operation must pause (that is, wait for a response), the disk is becoming a bottleneck.

A disk bottleneck can cause any of several types of performance degradation, such as slow process response. For this reason, it is important to check that disk performance is not degrading.

If you think a disk bottleneck has occurred, first make sure that the disk is not fragmented. Next, make sure that there is enough free disk space by making sure that no invalid files are occupying disk space. If invalid files exist, you must identify the programs that created the files and take appropriate action.

The Disk Space alarm is provided by the monitoring templates. If you want to perform more detailed monitoring, see the following table, which lists and describes the principal records and fields related to the monitoring of disk performance.

*Table 1-5: Principal fields related to disk monitoring*

Record	Field	Description (example)
PI_LOGD, PI_PHYD	% Disk Time	The disk busy rate. If the value of this field continues to be at or above the threshold (50% or more, or close to 100%), the load on the disk is high.
	Current Disk Queue Length	The number of queued requests. If the value of this field continues to be at or above the threshold (3), the disk is congested.
	Avg Disk Bytes/Xfer	The number of bytes transferred between disks in one I/O operation. The larger the value of this field, the more efficiently the system is operating.
	Disk Bytes/sec	The number of bytes transferred between disks per second. The larger the value of this field, the more efficiently the system is operating.
PI_LOGD	% Free Space	The percentage of free disk space. If the percentage is low, the amount of free disk space is insufficient.
	Free Mbytes	The amount of available disk space. If the value of this field is small, the amount of free disk space is insufficient.

**(b) Monitoring methods**

- **Monitoring the percentage of free logical-disk space**

The percentage of the amount of free space on a logical disk can be monitored using the Disk Space alarm provided by the monitoring templates.

When the percentage of free logical-disk space is near or at the threshold value (the % Free Space field of the PI\_LOGD record), file defragmentation might be affected.

If the disk capacity is large, the system might operate normally even when the percentage of free logical-disk space is near or at threshold value. Therefore, monitoring the amount of free logical-disk space, as well as the percentage, is recommended.

For details, see *1.3.3(3)(a) Monitoring template*.

- **Monitoring the amount of free logical-disk space**

The amount of free space on a logical disk can be monitored using the Logical Disk Free alarm provided by the monitoring templates.

You can effectively detect a low disk space level by using an alarm to monitor the amount of free logical-disk space.

The threshold for the amount of free logical-disk space (the Free Mbytes field of the PI\_LOGD record) can be used as a guideline for determining whether to take action, such as deleting unnecessary files, compressing files, or adding a disk.

For details, see *1.3.3(3)(a) Monitoring template*.

- **Monitoring the disk busy rate**

You can use the Disk Busy % alarm provided by the monitoring template to monitor the disk busy rate.

You can monitor the disk busy rate by using an alarm to check whether excessive paging (reading and writing of pages by processes) is occurring.

If the disk busy rate (the % Disk Time field of the PI\_PHYD or PI\_LOGD record) continues to be at or above the threshold, you might need to take action. For example, you might need to identify the processes that frequently request disk I/O operations, and then distribute the processing of these processes.

When you monitor the disk busy rate, monitoring disk congestion is also recommended.

For details, see *1.3.3(3)(a) Monitoring template*.

- **Monitoring disk congestion**

Disk congestion can be monitored using the Logical Disk Queue alarm or Physical Disk Queue alarm provided by the monitoring templates.

You can monitor disk congestion by using an alarm to check whether I/O requests have been excessive.

If the disk congestion level (the `Current Disk Queue Length` field of the `PI_PHYD` or `PI_LOGD` record) continues to be at or above the threshold, you might need to take action. For example, you might need to identify those processes that frequently request disk I/O, and then distribute the processing of the processes.

When you monitor disk congestion, monitoring the disk busy rate is also recommended.

For details, see *1.3.3(3)(a) Monitoring template*.

#### (4) Network

This subsection explains how to monitor network performance.

##### (a) Overview

You can monitor network information to check the response time of system functionality.

Continuous monitoring of network data traffic allows you to plan network reconfiguration or expansion.

The following table lists and describes the principal records and fields related to monitoring of the network performance.

*Table 1-6: Principal fields related to network monitoring*

Record	Field	Description (example)
PI_NETI	Bytes Total/sec	The amount of data sent and received per second. In an environment that always uses an NIC, if the value of this field frequently falls below the threshold (the larger the value, the better), the NIC might be a bottleneck. <sup>#</sup>
	Bytes Sent/sec	The amount of data sent per second. In an environment that always uses an NIC, if the value of this field frequently falls below the threshold (the larger the value, the better), the NIC might be a bottleneck. <sup>#</sup>
PI	Bytes Rcvd/sec	The amount of data received per second. Compare the number of bytes that the server receives from the network to the total bandwidth of the NIC (the maximum amount of data that can be transferred per unit of time over the network). If the number of bytes is equal to or greater than 50% of the total bandwidth, the network connection might be a bottleneck.

<sup>#</sup>

If the value of this field is large, a large amount of data has been transferred

successfully.

### (b) Monitoring methods

- **Monitoring for data traffic that exceeds the NIC bandwidth (the maximum amount of data that can be transferred per unit of time)**

You can use the Network Received alarm provided by the monitoring templates to monitor the bandwidth of a network interface card.

You can monitor network traffic by using an alarm to monitor the bandwidth of a network interface card (NIC).

If the data traffic continues to be at or above the threshold, you might need to upgrade the NIC or the physical network.

For details, see *1.3.3(4)(a) Monitoring template*.

## (5) Processes and services

This subsection explains how to monitor process performance and service performance.

### (a) Overview

Because system functionality is provided by individual processes and services, understanding the operating status of processes and services is essential for stable system operation.

If one of the processes or services that provide system functionality terminates abnormally, the system stops with serious consequences. In order to detect such an abnormal condition early and take appropriate action, it is necessary to monitor the status of processes and services including their generation and disappearance.

Note that PFM - Agent for Platform performs a process check at the same intervals that information is collected. Accordingly, the time that the disappearance of a process is detected is the time that PFM - Agent for Platform collects information, not the actual time that the process disappeared.

The following table lists and describes the principal records and fields related to the monitoring of processes and services.

*Table 1-7: Principal fields related to the monitoring of processes and services*

Record	Field	Description (example)
PI_WGRP	Process Count	The number of processes. If the value of this field is the threshold or less (the minimum number of processes that need to be activated), some or all of the required processes are inactive. <sup>#</sup>
PD_PDI	Program	The name of a process. If this record is not collected, the process is inactive.

Record	Field	Description (example)
PD_SVC	Service Name	The name and status of a service. If the status of the application service (process) is not <code>RUNNING</code> , the service is inactive.
	Display Name	
	State	

#

The collection data addition utility must be set up to collect this record.

### (b) Monitoring methods

- **Monitoring process disappearance**

You can use the Process End alarm provided by the monitoring templates to monitor process disappearance.

If a process terminates abnormally, the system stops with serious consequences. You can monitor the disappearance of processes by using an alarm, enabling prompt recovery of the system.

For details, see *1.3.3(5)(a) Monitoring template*.

- **Monitoring process generation**

You can use the Process Alive alarm provided by the monitoring templates to monitor process generation.

You can use an alarm to monitor the generation of processes for each application or the status of scheduled processes, enabling you to check the operating status of the production system.

By using the `PI_WGRP` record and specifying the workgroup settings of the collection data addition utility, you can perform several types of monitoring. For example, you can monitor the following items: process generation, process disappearance, the number of processes that have the same name, the number of processes for each application, and the number of processes activated for each user.

For details, see *1.3.3(5)(a) Monitoring template*.

- **Monitoring for service stoppages**

Service stoppage can be monitored using the Service (Service Nm) alarm or Service (Display Nm) alarm provided by the monitoring templates.

If a service terminates abnormally, the production system stops with serious consequences.

You can monitor a service for stoppages by using an alarm, enabling prompt recovery of the system.

For details, see *1.3.3(5)(a) Monitoring template*.

## (6) Event logs

This subsection explains how to monitor event logs.

### (a) Overview

The OS and applications output errors, warnings, and other types of events to Event Viewer. By monitoring the Event Viewer event logs, you can detect a problem with the OS or an abnormal process operation, enabling prompt recovery of the system.

The following table lists and describes the principal records and fields related to the monitoring of the event logs.

*Table 1-8: Principal fields related to the event log monitoring*

Record	Field	Description (example)
PD_ELOG	Log Name	The event log type. Event logs include the following types of logs: Application, Security, and System
	Event Type Name	The event type identification name, such as Error or Warning.
	Source Name	The name of the application that output the event. This information identifies the application that output the event.
	Event ID	The event ID. This information uniquely identifies each logged event for an application.
	Description	The description (details) of the event.

### (b) Monitoring methods

- **Monitoring all error and warning events output to the event logs**

All errors and warnings output to the event log can be monitored using the Event Log (all) alarm provided by the monitoring templates.

You can use an alarm to monitor the error and warning events output to the event logs.

For details, see *1.3.3(6)(a) Monitoring template*.

- **Monitoring an MSCS cluster**

The operation of an MSCS cluster can be monitored using the Event Log (System) alarm provided by the monitoring templates.

You can use an alarm to monitor the events output by MSCS.

For details, see *1.3.3(6)(a) Monitoring template*.

## (7) Active Directory monitoring examples

The following explains how to monitor Active Directory on PFM - Agent for Platform,

and gives monitoring examples.

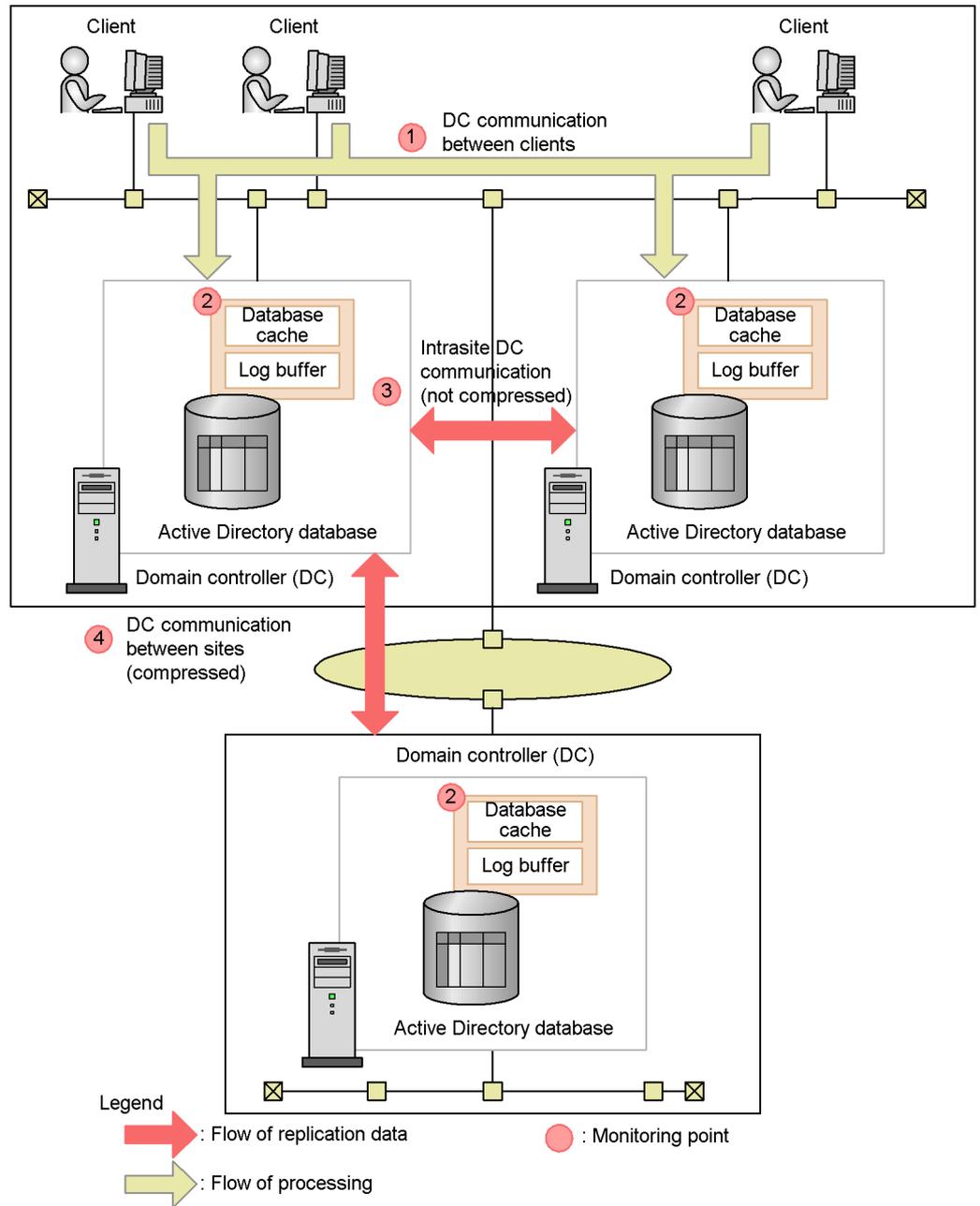
**(a) Active Directory monitoring information**

For versions 08-11 and later of PFM - Agent for Platform, Active Directory Overview (PI\_AD) records can be used to collect Active Directory monitoring information. PI\_AD records can be referenced to monitor the execution status and results for replication, session connection status, database cache hit rate, and wait time required for database log output. This allows users to check load, and that Active Directory is operating normally.

The following explains the Active Directory configuration and monitoring information used for each monitoring objective.

The following figure shows the configuration for Active Directory.

Figure 1-3: Active Directory configuration



The following explains the monitoring information for each monitoring objective,

according to the numbers in the figure.

*Table 1-9:* Monitoring information for monitoring point 1

<b>Monitoring objective</b>	<b>Bottleneck</b>	<b>Monitoring method and countermeasure example</b>	<b>PI_AD record monitoring field</b>
Monitoring whether any invalid login attempts have been performed	User login	If the number of authentication requests is significantly larger than the number of currently logged-in users, this might be due to invalid login attempts (users for which login fails continuously). If invalid login is a possibility, take appropriate measures.	Kerberos Authentications, NTLM Authentications, LDAP Client Sessions
Preventing degraded performance when distributing request from users across multiple domain controllers		Obtain the number of connection sessions to each domain controller, and compare it with the number of logins. Based on the comparison, redistribute the users on each domain controller, to spread the load.	LDAP Client Sessions

*Table 1-10:* Monitoring information for monitoring point 2

<b>Monitoring objective</b>	<b>Bottleneck</b>	<b>Monitoring method and countermeasure example</b>	<b>PI_AD record monitoring field</b>
Monitoring for databases significantly impacting Active Directory performance	Active Directory database cache	In the following cases, increase the amount of memory allocated to the cache. <ul style="list-style-type: none"> <li>The value of the Cache % Hit field or Table Open Cache % Hit field is at or below the baseline.</li> <li>The value of the Cache Page Fault Stalls/sec field or Table Open Cache Misses/sec field is at or above the baseline.</li> </ul>	Cache % Hit, Cache Page Fault Stalls/sec, Cache Page Faults/sec, Cache Size, Table Open Cache % Hit, Table Open Cache Hits/sec, Table Open Cache Misses/sec, Table Opens/sec

Monitoring objective	Bottleneck	Monitoring method and countermeasure example	PI_AD record monitoring field
	Active Directory database log buffer	If the value of the Log RecordStalls/sec field is at or above the baseline, increase the amount of memory allocated to the log buffer.	Log Record Stalls/sec, Log Threads Waiting, Log Writes/sec

Table 1-11: Monitoring information for monitoring point 3

Monitoring objective	Bottleneck	Monitoring method and countermeasure example	PI_AD record monitoring field
Monitoring the replication status to prevent large amounts of communication between domain controllers due to replication	Intrasite DC communication	Fields related to traffic are monitored to see whether they are at or above the baseline. Consider the following countermeasures if the fields are at or above the baseline: <ul style="list-style-type: none"> <li>• Increase the speed of the network.</li> <li>• Reschedule intrasite replication for when CPU usage is low.</li> </ul>	DRA In Total/sec, DRA Out Total/sec
Preventing loss of Active Directory functionality performance due to replication, as well as file loss or damage due to folder contention		If the value of the DRA Sync Requests Made field minus the value of the DRA Sync Requests Successful field increases monotonically, Active Directory functionality might be degraded. <sup>#1</sup> In this case, reschedule intrasite replication for when CPU usage is low.	DRA In Total/sec, DRA Out Total/sec

Monitoring objective	Bottleneck	Monitoring method and countermeasure example	PI_AD record monitoring field
Preventing large amounts of intrasite network traffic from occurring		If the SAM Password Changes/sec field is at or above the baseline, password change requests might be causing a network traffic bottleneck. <sup>#2</sup> In this case, redistribute the users on each domain controller, to spread the load.	SAM Password Changes/sec

#1

Degradation in response time is often the cause of increased amounts of requests waiting for file replication. When monitoring DRA-related fields, if the value of the DRA Sync Requests Made field minus the value of the DRA Sync Requests Successful field does not increase consistently, this can be deemed normal, as file replication is not failing.

#2

Large amounts of password change requests cause increased network traffic. The SAM Password Changes/sec field is monitored, and if it is less than the number of password changes expected for users, these should be no issues.

Table 1-12: Monitoring information for monitoring point 4

Monitoring objective	Bottleneck	Monitoring method and countermeasure example	PI_AD record monitoring field
Monitoring network traffic between sites	DC communication between sites	If the byte count is at or above the baseline after compression, consider the following countermeasures: <ul style="list-style-type: none"> <li>Reschedule replication between sites to when CPU usage is low.</li> <li>Integrate the sites.</li> </ul>	DRA In Total/sec, DRA Out Total/sec

Monitoring objective	Bottleneck	Monitoring method and countermeasure example	PI_AD record monitoring field
	Zone transfer	Monitor to check whether zone transfer is consuming network bandwidth between sites. If network bandwidth between sites is being consumed, consider integrating the sites.	Zone Transfer Failure, Zone Transfer Request Received, Zone Transfer SOA Request Sent, Zone Transfer Success
Monitoring the replication status to prevent large amounts of communication between domain controllers due to replication	DC communication between sites	Fields related to traffic are monitored to see whether they are at or above the baseline. Consider the following countermeasures if the fields are at or above the baseline: <ul style="list-style-type: none"> <li>• Increase the speed of the network.</li> <li>• Reschedule replication between sites to when CPU usage is low.</li> </ul>	DRA In Total/sec, DRA Out Total/sec

### (b) Prerequisites for collecting Active Directory monitoring information

To obtain performance data about Active Directory, first install Active Directory. Active Directory monitoring information cannot be obtained for environments in which Active Directory is not enabled. For details about how to perform installation, see *Installing Active Directory* in 5. Records.

### (c) Monitoring Active Directory

To determine whether Active Directory is running properly, several basic performance information alarms are created to perform constant monitoring. If the status of these alarms is **Abnormal** or **Warning**, issues can be resolved by analyzing detailed reports. The following explains monitoring for basic performance information.

- **Monitoring the operation status of the domain controller on which Active Directory is running**

The basic performance of a server on which Active Directory is running is greatly affected by the performance of Active Directory itself. The following shows the alarm and reports for monitoring the operation status of servers on which Active Directory is running:

- CPU Usage alarm  
Monitors processor usage.
- Available Memory alarm

Monitors the unused size of physical memory.

- Disk Space alarm

Monitors hard disk free space.

- Server Activity Summary (Multi-Agent) report

Monitors network traffic load.

*Reference note:*

These alarms and reports are provided by the monitoring templates. For details about these alarms and reports, see the chapter explaining creation of reports for operation analysis, and using alarms for operation monitoring in the manual *Job Management Partner 1/Performance Management User's Guide*.

- **Monitoring performance information specific to Active Directory**

The following shows the PI\_AD record fields for monitoring performance information specific to Active Directory.

- Table Opens/sec field

This field indicates the number of database tables open per second, and can be used as an index for Active Directory database load.

- DRA In Total/sec field

This field indicates the total number of bytes per second for input replication, and can be used as an index for replication load.

- DRA Out Total/sec field

This field indicates the total number of bytes per second for output replication, and can be used as an index for replication load.

- DS Notify Queue Size field

This field indicates the number of update notifications for held and registered in the queue, but not yet send to clients. It can be used as an index for domain service load.

- LDAP Successful Binds/sec field

This field indicates the number of LDAP bindings per second, and can be used as an index for LDAP load.

*Reference note:*

For details about alarm creation, see the chapter explaining operation monitoring by alarm in the manual *Job Management Partner 1/Performance Management User's Guide*.

**(d) Active Directory monitoring example**

When performance related to Active Directory degrades, PI\_AD records can be collected and monitored to help resolve issues. The following describes the items monitored to identify bottlenecks when various problems occur:

- When the domain controller load is constantly high  
Monitor the status of log writes for the Active Directory database cache or Active Directory database.
- When logins are concentrated on a specific domain  
Monitor the session status for the Active Directory servers.
- When intrasite network load is high  
Monitor the intrasite replication traffic.
- When network load between sites is high  
Monitor the replication traffic between sites.

The following explains monitoring examples for when the above problems occur. Note that these monitoring examples are for reference, and might differ depending on the user environment. Adjust the thresholds and other settings to suit the user environment.

- **When the domain controller load is constantly high**

High load on a domain controller is often due to frequent disk access by the Active Directory database. In this case, the issue can be resolved by revising the memory cache or buffer allocation.

Monitoring the Active Directory database cache

With Active Directory databases, records can be accessed without incurring file operations on disk by setting an appropriate cache size. This cache usage can be monitored to adjust the cache, and increase database access performance. The following table describes the fields monitored for database cache usage.

*Table 1-13:* Fields monitored for database cache usage

Field	Description
Cache % Hit	The percentage of database file page requests performed without incurring file operations, by using the database cache.
Cache Page Fault Stalls/sec	The number of page faults per second for which service could not be received, because there was no page allocated from the database cache.

Field	Description
Cache Page Faults/sec	The number of database file page requests per second required because the database cache manager allocated a new page from the database cache.
Cache Size	The amount of system memory used to maintain information frequently used by the database cache manager from database files.
Table Open Cache % Hit	The percentage of database tables opened using cached schema information.
Table Open Cache Hits/sec	The number of database tables opened per second using cached schema information.
Table Open Cache Misses/sec	The number of database tables opened per second without using cached schema information.
Table Opens/sec	The number of database tables opened per second.

### Monitoring examples

When the following conditions are satisfied, performance might degrade due to insufficient cache capacity:

- Cache % Hit and Table Open Cache % Hit fall below the baseline.
- Cache Page Fault Stalls/sec rises above the baseline.

### Countermeasure example

Increase the amount of memory allocated to the Active Directory database cache.

### Monitoring the status of database log writes

The wait time for writing logs can be reduced by monitoring the buffer usage status for database logs, and adjusting the capacity of the log buffer accordingly. Unlike the information from Active Directory database cache monitoring, this is information about log buffer performance.

*Table 1-14:* Fields for monitoring the status of database log writes

Field	Description
Log Record Stalls/sec	The number of log records per second that could not be added per second due to lack of log buffer space.
Log Threads Waiting	The number of threads standing by for writing log buffer data to log files, while waiting for database update to complete.

Field	Description
Log Writes/sec	The number of times per second that log buffer data is written to log files.

#### Monitoring examples

When the following condition is satisfied, performance might degrade due to insufficient log buffer space:

- Log Record Stalls/sec rises above the baseline.

#### Countermeasure example

Increase the amount of memory allocated to the log buffer.

- **When logins are concentrated on a specific domain**

Check the following fields to determine the number of sessions currently being used due to Active Directory.

*Table 1-15: Fields for monitoring the number of current sessions*

Field	Description
AB Client Sessions	The number of client sessions for the connected address book.
LDAP Client Sessions	The number of session for the connected LDAP client.

#### Monitoring example

When the following condition is satisfied, logins are likely concentrated on a specific domain:

- LDAP Client Sessions rises above the baseline.

#### Countermeasure example

- Even out the number of users allocated to each domain controller.
- Distribute the number of users, such as by increasing the number of domain controllers.

- **When intrasite network load is high**

Intrasite network load might be high because Active Directory is performing large-scale replication within the site. The following table lists the fields for monitoring intrasite replication.

*Table 1-16: Fields for monitoring intrasite replication traffic*

Field	Monitoring target	Description
DRA In Not Compress	Inbound replication	The number of bytes for uncompressed data (amount of input).
DRA In Not Compress/sec		The number of bytes per second for uncompressed data (input frequency).
DRA Out Not Compress	Outbound replication	The number of bytes for uncompressed data (amount of output).
DRA Out Not Compress/sec		The number of bytes per second for uncompressed data (output frequency).

**Monitoring example**

When the following conditions are satisfied, intrasite network load might be high due to replication traffic within the site:

- DRA In Not Compress/sec and DRA Out Not Compress/sec rise above the baseline.

**Countermeasure example**

Distribute the load, such as by increasing the number of domain controllers.

- **When network load between sites is high**

The network load between sites might be high because Active Directory is performing large amount of replication between sites. Unlike intrasite replication, communication for replication between sites involves compression. The replication operation itself does not change. The following fields are for monitoring replication traffic between sites.

*Table 1-17: Fields for monitoring replication traffic between sites*

Field	Monitoring target	Description
DRA In After Compress	Inbound replication	The number of bytes for compressed data (amount of input).
DRA In After Compress/sec		The number of bytes per second for compressed data (frequency of input).

Field	Monitoring target	Description
DRA In Before Compress	Outbound replication	The number of bytes for uncompressed data (amount of input).
DRA In Before Compress/sec		The number of bytes per second for uncompressed data (frequency of input).
DRA Out After Compress		The number of bytes for compressed data (amount of output).
DRA Out After Compress/sec		The number of bytes per second for compressed data (frequency of output).
DRA Out Before Compress		The number of bytes for uncompressed data (amount of output).
DRA Out Before Compress/sec		The number of bytes per second for uncompressed data (frequency of output).

#### Monitoring example

When the following conditions are satisfied, network load might be high between sites due to replication traffic between sites.

- DRA In After Compress/sec, DRA In Before Compress/sec, DRA Out After Compress/sec, and DRA Out Before Compress/sec rise above the baseline.

#### Countermeasure example

- Schedule replication between sites when CPU usage is low.
- Consider integrating the sites, to reduce communication between the sites.

*Hint:*

*Replication* is functionality for distributing the load of a database management system. If multiple copies of the database are distributed across the network, the load on lines and machines is reduced. Replication functionality can be used with Active Directory to provide advanced directory services while distributing load across machines.

Replication is an important part of directory services using Active Directory. By monitoring replication traffic, the current load can be better understood to determine any necessary steps to be taken.

Active Directory operates on the assumption that the network connection within a site is fast and reliable. Accordingly, data is not compressed when intrasite replication is performed, which avoids the overhead of compression processing.

However, when replication is performed between the domain controllers of sites, costs can be incurred due to the distances involved in normal communication between sites. This is why data is compressed when replication is performed between sites.

**(8) Example of collecting information about used ports**

PFM - Agent for Platform provides functionality to convert user-specific performance data output by users to text files (user-created data) into a format that can be stored in records provided by PFM - Agent for Platform (user data files). For details about user-specific performance data, see *3.2.6 Settings for collecting user-specific performance data*.

The following shows an example for collecting used port information in `PI_UPIB` records as user-specific performance data. The following table describes the format in which used port information is stored.

*Table 1-18:* Format for user-created data

Option	Value
tt	TCP
ks	The host name
lr	The total number of TCP ports for the host
lr	The number of currently active TCP ports for the host
lr	The number of listening TCP ports for the host

To collect information:

1. Create a batch operation for collecting information about used ports.

In this example, a batch operation is used to collect information about used ports, as shown below.

```
Batch creation example in Windows 2003 (D:\homework\sample.bat):
@echo off
echo Product Name=PFM-Agent for Platform (Windows) >
D:\homework\userdata.tcp
echo FormVer=0001 >> D:\homework\userdata.tcp
echo tt ks lr lr lr >> D:\homework\userdata.tcp
hostname > D:\homework\userdata.tmp
netstat -ap tcp | find "TCP" /C >> D:\homework\userdata.tmp
netstat -ap tcp | find "ESTABLISHED" /C >>
D:\homework\userdata.tmp
netstat -ap tcp | find "LISTENING" /C >>
D:\homework\userdata.tmp
(
set /p ks=
set /p lr1=
set /p lr2=
set /p lr3=
) < D:\homework\userdata.tmp
del D:\homework\userdata.tmp
echo TCP %ks% %lr1% %lr2% %lr3% >> D:\homework\userdata.tcp
```

*Note:*

As the example batch operation shown here was created for Windows 2003, it might not operate correctly in other OSs, and might not always operate correctly on Windows 2003 due to differences in environments.

2. Execute the batch operation created in step 1.

The following shows the user-created data created as a result of batch execution.

```
User-created data (D:\homework\userdata.tcp):
Product Name=PFM-Agent for Platform (Windows)
FormVer=0001
tt ks lr lr lr
TCP jp1ps05 15 3 12
```

3. Convert the user-created data created in step 2 to a user data file.

The following shows example of executing the `jpcuser` command to convert user-created data into a user data file.

```
Example of jpcuser command execution:
"C:\Program Files\HITACHI\jp1pc\agtt\agent\jpcuser\jpcuser"
PI_UPIB
-file D:\homework\userdata.tcp
```

4. Use PFM - Agent for Platform to collect the user data file output in step 3.

When PFM - Agent for Platform collects records, the contents of the user data file are stored in user records.

**(9) Example of collecting performance data from multiple hosts on which PFM products are not installed**

You can use the user-created data collection functionality provided by PFM - Agent for Platform to collect performance data specific to hosts on which PFM products are not installed. You can also monitor the status of multiple hosts at the same time by converting the performance data for the hosts into a single user data file. In this case, a script such as a shell script needs to be prepared because user-created data will be created on each host on which PFM products have not been installed. The following shows an example for collecting performance data from hosts on which PFM products are not installed, and outputting it as PFM - Agent for Platform record information.

**(a) Collection data**

The following example obtains information using the user-created data created in (8) *Example of collecting information about used ports*.

**(b) Prerequisites**

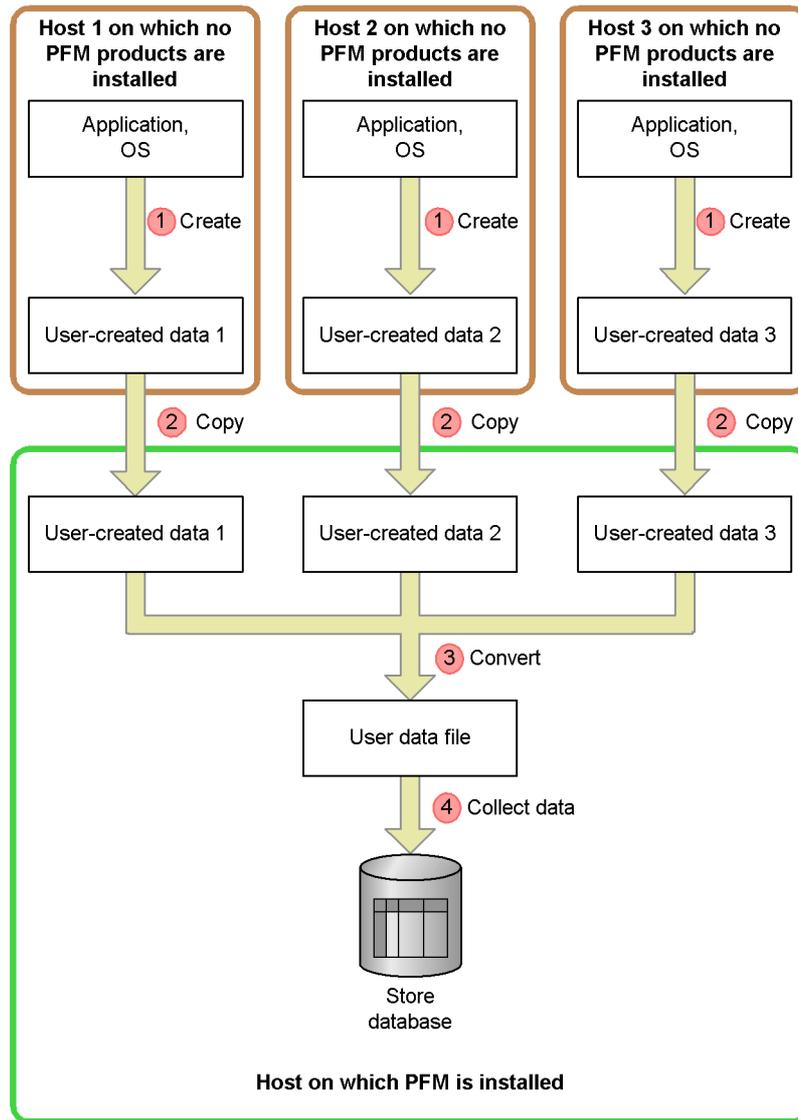
The prerequisites for collecting performance data from multiple hosts on which PFM products are not installed are as follows:

- Both hosts on which PFM products are installed and hosts on which PFM products are not installed are connected in a trusted environment to enable the exchange of files.
- The version of PFM - Agent for Platform on the hosts on which PFM products are installed is 08-11 or later.

**(c) Procedures for data collection**

The following figure shows the flow of data collection for hosts on which PFM products are not installed.

Figure 1-4: Flow of data collection for hosts on which PFM products are not installed



Legend  
 : Flow of data

The following uses the numbering in the figure to explain processing. To collect performance data from multiple hosts, perform these steps for each host.

To collect data:

1. Create user-created data for hosts on which PFM products are not installed.

Execute the script to collect performance data, and generate user-created data. The user-created data generated in (8) *Example of collecting information about used ports* is used here.

2. Copy files between remote hosts.

Copy the user-created data created in step 1 to the hosts on which PFM products are installed. Here, user-created data is copied to the `F:\nethome\` area shared between hosts, using network drive allocation. The following shows an example of the `copy` command.

Example of the `copy` command:

```
copy D:\homework\userdata.tcp F:\nethome\userdata.tcp
```

*Note:*

When collecting user-created data from multiple hosts, make sure that the file names are unique. If file names are duplicated, files might be overwritten during file copying.

3. Execute the `jpcuser` command on hosts on which PFM products are installed.

Execute the `jpcuser` command on hosts on which PFM products are installed to convert the user-created data copied in step 2 to user data files. The following shows an example in which the user-created data from hosts without PFM from steps 1 and 2 is converted into a single user data file.

Example `jpcuser` command:

```
"C:\Program Files\HITACHI\jplpc\agtt\agent\jpcuser\jpcuser"  
PI_UPIB  
-file user-created-data-1 -file user-created-data-2 -file  
user-created-data-3
```

4. Collect record data for hosts on which PFM products are installed.

For hosts on which PFM products are installed, collect the contents of the user data file output in step 3 as record data.

### 1.3.3 Definition examples

The following provides examples of definitions for the monitoring template and definitions for items not included in the monitoring template for each monitored resource. The following notes apply to reading the definition examples:

- In the examples, the PFM - Web Console check boxes are shown as follows:  
 (selected) and  (not selected)

- In the examples, the PFM - Web Console radio buttons are shown as follows:  
 (selected) and  (not selected)
- In the examples, *xxx*, *yyy*, *zzz*, and *dummy* are variables that the user replaces with the character strings appropriate for the system environment. For other definition items, the values should be changed as required.
- In the examples, the proper values for the frequency of occurrence settings (for example, ***m* occurrence(s) during *n* interval(s)**) differ depending on the system environment. Accordingly, specify the appropriate values. For example, assume that the status whose threshold has been exceeded for at least two minutes in the system environment is the high-load status. Further assume that the collection interval is 60 seconds and that the maximum for the number of times that the threshold can be exceeded is twice per five intervals. Under these conditions, an unacceptable high-load condition occurs when the threshold is exceeded at least three times per five intervals. The setting in this case is **3 occurrence(s) during 5 interval(s)**.

### (1) Processor

The following shows definition examples for the monitoring template and for items not included in the monitoring templates.

#### (a) Monitoring template

- **Processor-related monitoring template alarms**

Processor-related monitoring template alarms are stored in the alarm table for PFM Windows Template Alarms [CPU] 09.00.

Table 1-19: Processor-related monitoring template alarms

Monitoring template alarm	Record	Field	Error threshold	Warning threshold	Description
CPU Usage	PI	CPU %	>= 90	> 80	If the processor usage (%) continues to be high, the processor might be a system bottleneck. Any processes that are using the processor excessively must be found, and appropriate action taken. If no such processes exist, the system environment is not adequate for the processing. In this case, you might need to upgrade the processor or add other processors.

Monitoring template alarm	Record	Field	Error threshold	Warning threshold	Description
Processor Queue	PI	Processor Queue Length	>= 10	>= 2	If the number of request continues at or above the threshold, this indicates processor congestion.
SVR Processor Queue	PI_SVRQ	Queue Length	>= 3	>= 2	If the queue length continues at or above the threshold, this indicates significant load on the processor.

- **Processor-related monitoring template reports**

Table 1-20: Processor monitoring template reports

Report name	Displayed information
CPU Status (Multi-Agent)	An hourly summary of the CPU usage by multiple agents for the last 24 hours
CPU Trend	Daily CPU usage in the user mode and daily CPU usage in the kernel mode for the last month
CPU Trend (Multi-Agent)	Daily CPU usage by multiple systems for the last month
CPU Usage Summary	A summary of the CPU usage on a minute-by-minute basis for the last hour

For details about settings for existing reports, see 4. *Monitoring Templates*.

**(b) Definition examples other than for monitoring templates**

- **Real-time report for checking processes whose processor usage is high**

Table 1-21: Definition example

Item		Explanation	
Name and Type	Report name	PD_PDI - Memory	
	Product	Windows (6.0)	
	Report type	<input type="radio"/> Real-time (single agent)	<input checked="" type="radio"/> (Select)
		<input type="radio"/> Historical (single agent)	--
<input type="radio"/> Historical (multiple agents)		--	

Item		Explanation	
<b>Field</b>	<b>Record</b>	PD_PDI	
	<b>Selected fields</b>	Program PDI CPU % Privileged CPU % User CPU %	
<b>Filter</b>	<b>Conditional expression:</b>	<input checked="" type="radio"/> (Select <b>Simple</b> or <b>Complex</b> .) Program <> "_Total" AND PID <> "0"	
	<b>Specify when displayed</b>	<input type="checkbox"/> (Clear)	
<b>Indication settings</b>	<input type="checkbox"/> <b>Specify when displayed</b>	<input checked="" type="checkbox"/> (Select)	
	<input type="checkbox"/> <b>Indicate delta value</b>	<input type="checkbox"/> (Clear)	
	<b>Refresh interval</b>	<input type="checkbox"/> <b>Do not refresh automatically</b>	<input type="checkbox"/> (Clear)
		<b>Initial value</b>	30
		<b>Minimum value</b>	30
	<b>Display by ranking</b>	<b>Field</b>	CPU %
		<b>Display number</b>	10 <sup>#</sup>
<input type="checkbox"/> <b>In descending order</b>		<input type="checkbox"/> (Clear)	
<b>Components</b>	<b>Table</b>	All fields	
	<b>List</b>	--	
	<b>Graph</b>	Privileged CPU % User CPU %	
	<b>Display key</b>	<b>Field</b>	(None)
		<b>In descending order</b>	--
<b>Graph</b>	<b>Graph type</b>	Stacked bar graph	
	<b>Series direction</b>	Row	
	<b>Axis labels</b>	<b>X-axis</b> Process name (process ID)	

Item			Explanation
		Y-axis	CPU %
	Data label	Data label 1	Process name
		Data label 2	Process ID
Drilldown	Report drilldown		Arbitrary
	Field drilldown		Arbitrary

Legend:

--: Do not specify this item.

#

Specify a value appropriate for the circumstances.

## (2) Memory

The following shows definition examples for the monitoring templates and for items not included in the monitoring templates.

### (a) Monitoring template

- **Memory-related monitoring template alarms**

Table 1-22: Memory monitoring template alarms

Monitoring template alarm	Record	Field	Error threshold	Warning threshold	Description
Available Memory	PI	Available Mbytes	< 3	< 4	When the unused size is below the threshold, physical memory might be insufficient. Find any processes using excess memory, and perform the necessary countermeasures. If there are no process problems, perform the necessary countermeasures, such as increasing memory, as the system environment is exceeding its resources.
Committed Mbytes	PI	Committed Mbytes	>= 2046	>= 1024	If usage of the virtual memory area continues at or above the threshold (the Total Physical MemMbytes field in the PI record), physical memory might be insufficient.

Monitoring template alarm	Record	Field	Error threshold	Warning threshold	Description
Pages/sec	PI	Pages/sec	>= 5	>= 4	If the pages per second continues at or above the threshold, memory might be causing a system bottleneck. However, if the exceeded threshold is temporary, the monitored value might be allowed to reach 20.
Page Faults/sec	PI	Page Faults/sec	>= 5	>= 4	If the rate of page faults continues at or above the threshold, memory might be a bottleneck.

For details about settings for existing alarms, see *4. Monitoring Templates*.

- **Memory-related monitoring template reports**

*Table 1-23: Memory monitoring template reports*

Report name	Displayed information
Memory Available Trend (Multi-Agent)	The daily amount of available physical memory for multiple systems for the last month
Memory Paging	The number of times paging occurred on a minute-by-minute basis for the last hour
Memory Paging Status (Multi-Agent)	An hourly summary of memory page faults that occurred on multiple agents for the last 24 hours
OS Memory Usage Status (real-time report indicating memory usage)	Usage status of physical memory
OS Memory Usage Status (historical report indicating memory usage)	An hourly summary of the physical memory usage status for the last 24 hours
System Memory Detail	Details of system physical memory on a minute-by-minute basis for the last hour

- **System-related monitoring template reports (for memory)**

*Table 1-24: System monitoring template reports*

Report name	Displayed information
File System I/O Summary	A summary of the number of I/O operations on a minute-by-minute basis for the last hour

Report name	Displayed information
Process Trend	The number of processes executed by the system for the last month (by day)
System Overview (real-time report giving a system overview)	A summary of the status of the entire system
System Overview (historical report giving a system overview)	A summary of the system status on a minute-by-minute basis for the last hour
Workload Status	Data related to the system workload
Workload Status (Multi-Agent)	An hourly summary of the workload-related data for multiple systems for the last 24 hours

For details about settings for existing reports, see *4. Monitoring Templates*.

**(b) Definition examples other than for monitoring templates**

- **Historical report for checking whether a memory leak has occurred**

*Table 1-25: Definition example*

Item		Explanation	
Name and Type	Report name	PI - Memory	
	Product	Windows (6.0)	
	Report type	<input type="radio"/> Real-time (single agent)	--
		<input checked="" type="radio"/> Historical (single agent)	⦿ (Select)
<input type="radio"/> Historical (multiple agents)		--	
Field	Record	PI	

Item		Explanation	
	<b>Selected fields</b>	Pool Nonpaged Bytes Pool Paged Bytes Pages/sec Page Faults/sec Data Map Hits % Commit Limit Mbytes Committed Mbytes Non Committed Mbytes % Committed Bytes in Use Total Physical Mem Mbytes Used Physical Mem Mbytes Available Mbytes % Physical Mem Current Processes Current Threads	
<b>Filter</b>	<b>Conditional expression:</b>	<input checked="" type="radio"/> (Specify no filter condition.)	
<b>Indication settings</b>	<b>Specify when displayed</b>	<input type="checkbox"/> (Clear)	
	<input type="checkbox"/> <b>Specify when displayed</b>	<input checked="" type="checkbox"/> (Select)	
	<b>Settings for the report display period</b>	<b>Date range</b>	The value is specified when the report is displayed.
		<b>Report interval</b>	One minute
	<b>Peak time</b>	<b>Field</b>	(None)
	<b>Maximum number of records</b>		1440 <sup>#</sup>
<b>Component s</b>	<b>Table</b>		All fields
	<b>List</b>		--
	<b>Graph</b>		Pool Nonpaged Bytes
	<b>Display name</b>		--
	<b>Display key</b>	<b>Field</b>	(None)
		<b>In descending order</b>	--
<b>Graph</b>	<b>Graph type</b>		Line graph
	<b>Series direction</b>		Row

Item		Explanation	
	Axis labels	X-axis	Time
		Y-axis	Nonpaged pool
	Data label	Data label 1	(None)
		Data label 2	(None)
Drilldown	Report drilldown	Arbitrary	
	Field drilldown	Arbitrary	

Legend:

--: Do not specify this item.

#

Specify a value appropriate for the circumstances.

- **Real-time report for checking the memory usage of a process**

Table 1-26: Definition example

Item		Explanation	
Name and Type	Report name	PD_PDI - Memory	
	Product	Windows (6.0)	
	Report type	<input type="radio"/> Real-time (single agent)	<input checked="" type="radio"/> (Select)
		<input type="radio"/> Historical (single agent)	--
<input type="radio"/> Historical (multiple agents)		--	
Field	Record	PD_PDI	
	Selected fields	Select all fields.	
Filter	Conditional expression:	<input checked="" type="radio"/> (Select <b>Simple</b> or <b>Complex</b> .) Program <> "_Total" AND PID <> "0"	
	Specify when displayed	<input type="checkbox"/> (Clear)	
Indication settings	<input type="checkbox"/> Specify when displayed	<input checked="" type="checkbox"/> (Select)	

Item		Explanation	
	<input type="checkbox"/> Indicate delta value	<input type="checkbox"/> (Clear)	
Refresh interval	<input type="checkbox"/> Do not refresh automatically	<input type="checkbox"/> (Clear)	
	Initial value	30	
	Minimum value	30	
Display by ranking	Field	Pool Nonpaged Kbytes <sup>#</sup>	
	Display number	30 <sup>#</sup>	
	<input type="checkbox"/> In descending order	<input checked="" type="checkbox"/> (Select)	
Components	Table	Program PID Handle Count Page Faults/sec Pool Nonpaged Kbytes Pool Paged Kbytes Working Set Kbytes Page File Kbytes Private Kbytes CPU %	
	List	--	
	Graph	Pool Nonpaged Kbytes Pool Paged Kbytes Working Set Kbytes Page File Kbytes Private Kbytes	
	Display name	--	
	Display key	Field	(None)
		In descending order	--
Graph	Graph type	Line graph	
	Series direction	Row	
	Axis labels	X-axis Time	

Item		Explanation
	Y-axis	Memory usage
	Data label	Data label 1 (None)
	Data label 2	(None)
Drilldown	Report drilldown	Arbitrary
	Field drilldown	Arbitrary

Legend:

Do not specify this item.

#

Set the fields that you want to monitor.

### (3) Disks

The following shows definition examples for the monitoring templates.

#### (a) Monitoring template

- **Disk-related monitoring template alarms**

Disk-related monitoring template alarms are stored in the alarm table for PFM Windows Template Alarms [DSK] 09.00.

Table 1-27: Disk monitoring template alarms

Monitoring template alarm	Record	Field	Error threshold	Warning threshold	Description
Disk Space	PI_LOGD	% Free Space	< 5	< 15	If the free space is less than the threshold, disk capacity might be insufficient. Appropriate action, such as deleting unnecessary files, compressing files, defragmenting the disk, or adding a disk, might be required.
Logical Disk Free	PI_LOGD	ID	<> _Total	<> _Total	If there is little unused area, disk capacity might be insufficient.
		Free Mbytes	< 5120	< 10240	

Monitoring template alarm	Record	Field	Error threshold	Warning threshold	Description
Disk Busy %	PI_LOGD	ID	<> _Total	<> _Total	If the time elapsed continues at or above the threshold, this indicates high disk load.
		% Disk Time	>= 90	>= 50	
Logical Disk Queue	PI_LOGD	ID	<> _Total	<> _Total	If the number of requests continues at or above the threshold, this indicates that the logical disk is congested.
		Current Disk Queue Length	>= 5	>= 3	
Physical Disk Queue	PI_PHYD	ID	<> _Total	<> _Total	If the number of requests continues at or above the threshold, this indicates that the physical disk is congested.
		Current Disk Queue Length	>= 5	>= 3	

For details about settings for existing alarms, see *4. Monitoring Templates*.

- **Disk-related monitoring template reports**

*Table 1-28:* Disk monitoring template reports

Report name	Displayed information
Disk Time - Top 10 Logical Drives	10 logical disks with the highest disk usage
Free Megabytes - Logical Drive Status	Information about the free space on a logical disk
Free Space - Low 10 Logical Drives	10 logical disks with the smallest amount of free space
Free Space - Top 10 Logical Drives	10 logical disks with the largest amount of free space
Logical Drive Detail	Details of a specific logical disk

For details about existing reports, see *4. Monitoring Templates*.

#### **(4) Network**

The following shows definition examples for the monitoring template.

**(a) Monitoring template**

- **Network-related monitoring template alarms**

Network-related monitoring template alarms are stored in the alarm table for PFM Windows Template Alarms [NET] 09.00.

*Table 1-29: Network monitoring template alarms*

Monitoring template alarm	Record used	Field used	Abnormal condition	Warning condition	Meaning
Network Received	PI_NETWORK	Bytes Rcvd/sec	>= 3000	>= 2048	Compare the number of bytes received from the network by the server with the total bandwidth performance for the network card, and if the bandwidth (amount of data that can be transferred over the network in a fixed time) is at or above 50%, the network connection might be a bottleneck.

For details about existing alarms, see *4. Monitoring Templates*.

- **Network-related monitoring template reports**

*Table 1-30: Network monitoring template reports*

Report name	Displayed information
Access Failure Status (real-time report indicating system access errors)	The number of errors occurring in system access attempts
Access Failure Status (historical report indicating system access errors)	The cumulative number of errors occurring in system access attempts on an hourly basis for the last 24 hours
Server Activity Detail	Information about the status of communication with the network
Server Activity Summary (Multi-Agent)	An hourly summary of the status of communication with the network for the last 24 hours
Server Activity Summary (real-time report providing information about the status of communication over the network)	Information about the status of communication with the network

Report name	Displayed information
Server Activity Summary (historical report providing information about the status of communication over the network)	The status of communication with the network on a minute-by-minute basis for the last hour
Server Activity Summary Trend (Multi-Agent)	The status of data communication between the network and the servers of multiple systems on a daily basis for the last month
Server Sessions Trend (Multi-Agent)	The number of active sessions on the servers of multiple systems on a daily basis for the last month
System Utilization Status	The status of communication between the server and the network

For details about existing reports, see *4. Monitoring Templates*.

### (5) Processes and services

The following gives definition examples for monitoring templates.

#### (a) Monitoring template

- **Process-related monitoring template alarms**

Process-related monitoring template alarms are stored in the alarm table for PFM Windows Template Alarms [PS] 09.00.

*Table 1-31: Process monitoring template alarms*

Monitoring template alarm	Record used	Field used	Abnormal condition	Warning condition	Meaning
Process End	PD_PDI	Program	= jpcsto	= jpcsto	If performance data is not collected, this indicates the process has stopped.
Process Alive	PI_WGRP	Process Count	> 0	> 0	This indicates that the workgroup process is running.
		Workgroup	= workgroup	= workgroup	
Service(Service Nm)	PD_SVC	Service Name	= JP1PCAGT_TS	= JP1PCAGT_TS	If the application service (process) is not running ( <b>RUNNING</b> ), this indicates that the service has stopped.
		State	<> RUNNING	<> RUNNING	

Monitoring template alarm	Record used	Field used	Abnormal condition	Warning condition	Meaning
Service(Display Nm)	PD_SVC	Display Name	= PFM - Agent Store for Windows	= PFM - Agent Store for Windows	If the application service (process) is not running ( <b>RUNNING</b> ), this indicates that the service has stopped.
		State	<> RUNNING	<> RUNNING	

For details about existing alarms, see 4. *Monitoring Templates*.

- **Process-related monitoring template reports**

Table 1-32: Process monitoring template reports

Report name	Displayed information
CPU Usage - Top 10 Processes	The 10 processes with the highest CPU usage
Process Detail	Details about system resource consumption by a specific process
Page Faults - Top 10 Processes	The 10 processes with the highest page fault frequency

For details about existing reports, see 4. *Monitoring Templates*.

## (6) Event logs

The following gives definition examples for monitoring templates.

### (a) Monitoring template

- **Event log-related monitoring template alarms**

Monitoring template alarms related to event logs are stored in the alarm table for PFM Windows Template Alarms [LOG] 09.00.

Table 1-33: Event log monitoring template alarms

Monitoring template alarm	Record used	Field used	Abnormal condition	Warning condition	Meaning
Event Log(all)	PD_ELOG	Log Name	<> dummy	<> dummy	This indicates that an error or warning has occurred for the application.
		Event Type Name	= Error	= Warning	
		Source Name	<> dummy	<> dummy	

Monitoring template alarm	Record used	Field used	Abnormal condition	Warning condition	Meaning
		Event ID	<> 0	<> 0	
		Description	<> dummy	<> dummy	
Event Log(System)	PD_ELOG	Log Name	= System	= System	This indicates that an error or warning has occurred for MSCS.
		Event Type Name	= Error	= Warning	
		Source Name	= ClusSvc	= ClusSvc	
		Event ID	<> 0	<> 0	
		Description	<> dummy	<> dummy	

For details about existing alarms, see 4. *Monitoring Templates*.

- **Event log-related monitoring template reports**

N/A

### 1.3.4 Operation on virtualized systems

The following explains how to use PFM - Agent for Platform to monitor performance on virtualized systems.

#### (1) **Objectives of operation on virtualized systems**

The following explains the advantages of virtualized systems, and the objectives in running PFM - Agent for Platform on a virtualized system.

##### (a) **Advantages of virtualized systems**

Virtualized systems are attracting attention as a technology that makes the most of excess system resources. For example, with the current one-server, one-application paradigm, most servers consistently have excess resources. Specifically, except for times of server job congestion, usually only 5% to 7% of resources are used. Virtualized systems are a way to solve this issue.

Virtualized systems also have the following advantages:

- Operating systems and devices can be shared and centrally managed.
- Several old servers can be made into a virtual server, and run as one new server.
- The number of servers can be reduced, cutting electricity and air conditioning costs.

## **(b) Objectives of performance monitoring**

As discussed above, the advantages of a virtualized system are greatest when system resources are used in the proper amount. Virtualized systems cannot be used effectively if system resources are overconsumed, or on the other extreme, hardly used at all.

In situations like these, the status of resource consumption can be monitored to determine whether the current system is set up effectively.

At a basic level, PFM - Agent for Platform is designed to collect information about a single physical operating system. However, it can be used creatively to monitor performance information that depends on virtualized systems.

The main objectives of using PFM - Agent for Platform to monitor virtualized system performance monitoring are as follows:

- Analyzing performance data trends to better understand impact on load allocation and the affected system resources.
- Analyzing performance data to spot bottleneck causes.
- Monitoring whether the operating system is running properly on the virtualized system.

In virtualized systems, specific bottlenecks might adversely affect performance for the entire virtualized system. The following might cause such bottlenecks:

- Insufficient memory in the logical partition
- Load allocation between virtualized systems
- Monopolization of specific resources by a program

The following explains methods for using PFM - Agent for Platform to monitor the performance of virtualized systems. Note that the thresholds shown here for performance monitoring are just reference values. Use the appropriate values based on the system configuration and usage.

## **(2) Monitoring resources on virtualized systems**

### **(a) Overview**

The following are the most important system resources to be monitored for performance:

- Processors
- Memory
- Disks
- Networks

- Processes

In a virtualized system, some performance data for the above resources might not be collected or might become meaningless when changed dynamically. Performance changes for each OS, or by each virtualized system.

### **(b) Installing PFM - Agent for Platform on a virtualized system**

On a virtualized system, each type of resource is basically managed by virtualized functionality (software or hardware), and configured by being allocated to different logical partitions. The managed resources include processors, memory, disks, and networks.

These resources can be obtained as performance data on the logical partition on which PFM - Agent for Platform is installed.

Some virtualized systems distinguish between guest operating systems and host operating systems, as is the case with VMWare, Virtage, and other software-based virtualizations. The host OS manages the guest OS, and the guest OS runs on the host OS. In such cases, PFM - Agent for Platform is installed on the guest OS to monitor performance.

PFM - Agent for Platform collects performance data on the installed logical partition, or guest OS.

*Precautionary note:*

Because the host OS for VMWare is a special OS for managing virtualized functionality, application operation is not guaranteed. Because Virtage creates an off-disk management area called an *SVP frame*, data collected by PFM - Agent for Platform cannot be saved as a database in this management area.

### **(c) Setting up PFM - Agent for Platform on a virtualized system**

The procedures for collecting information for an installed instance of PFM - Agent for Platform are the same for virtualized systems. The existing settings can be used as is.

When a virtual machine is set up using a virtualized system, and PFM - Agent for Platform is installed on the machine, PFM - Agent for Platform collects performance data about the virtual machine.

## **(3) Usage examples of PFM - Agent for Platform on virtualized systems**

The following gives simple examples of usage on a virtualized system.

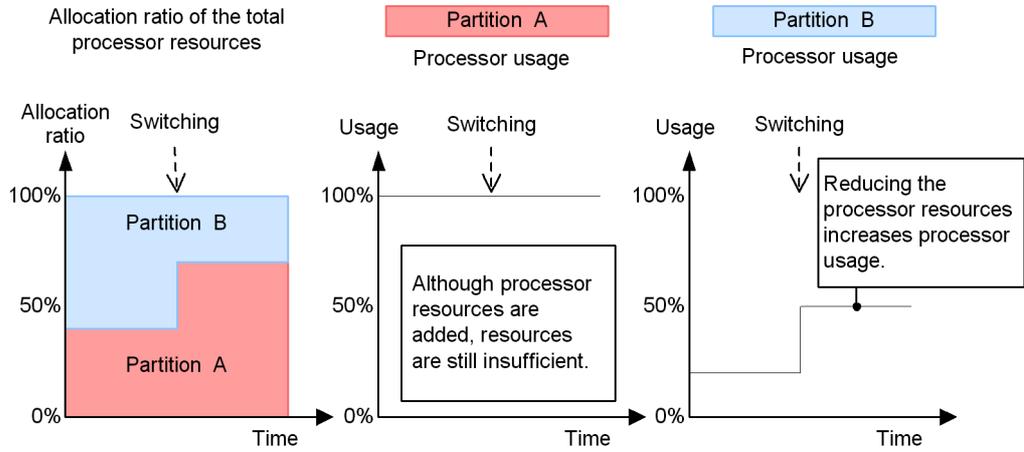
### **(a) Determining whether to change virtualized system settings**

If there are extra physical resources despite the consumption of a significant amount of resources on a specific guest OS or logical partition, we recommend that you change the virtualized system settings.

PFM - Agent for Platform can be used as a tool to determine these kinds of situations.

The following graph shows a case in which the allocation of processor resources is not sufficient.

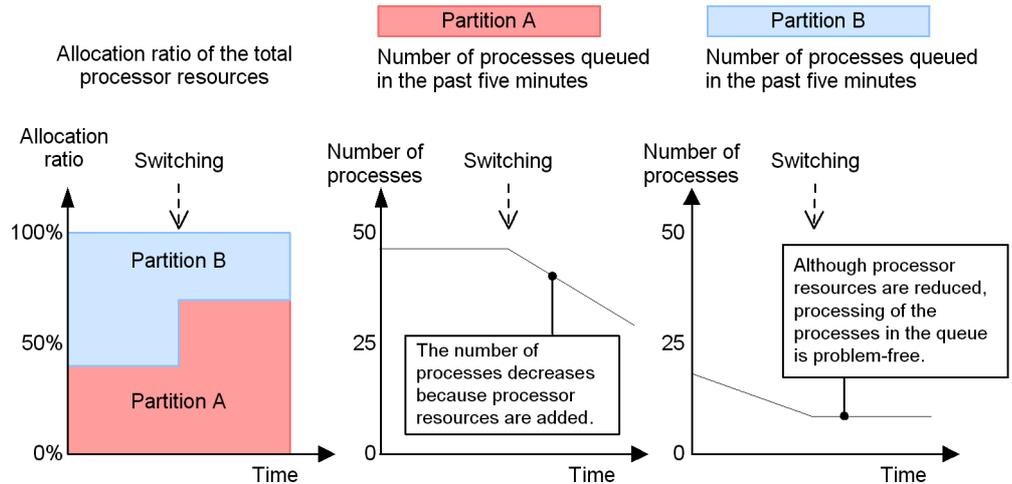
*Figure 1-5: Case in which processor resource allocation is not sufficient (during processor usage monitoring)*



Because the processor usage for logical partition A is 100%, the allocation ratio is being switched. However, the processor usage for logical partition A does not decrease, while the processor for logical partition B is not fully used. In cases like this, change the allocation ratio settings.

The following graph shows a case in which the allocation of processor resources is sufficient.

*Figure 1-6:* Case in which processor resource allocation is sufficient (during processor usage monitoring)



The processor resource ratio is being switched while there are many processes in the queue for logical partition A. As a result, the number of processes in the queue for logical partition A is decreasing.

#### (b) Determining whether additional physical resources are needed

If physical resources always seem to be under load, consider adding another physical resource.

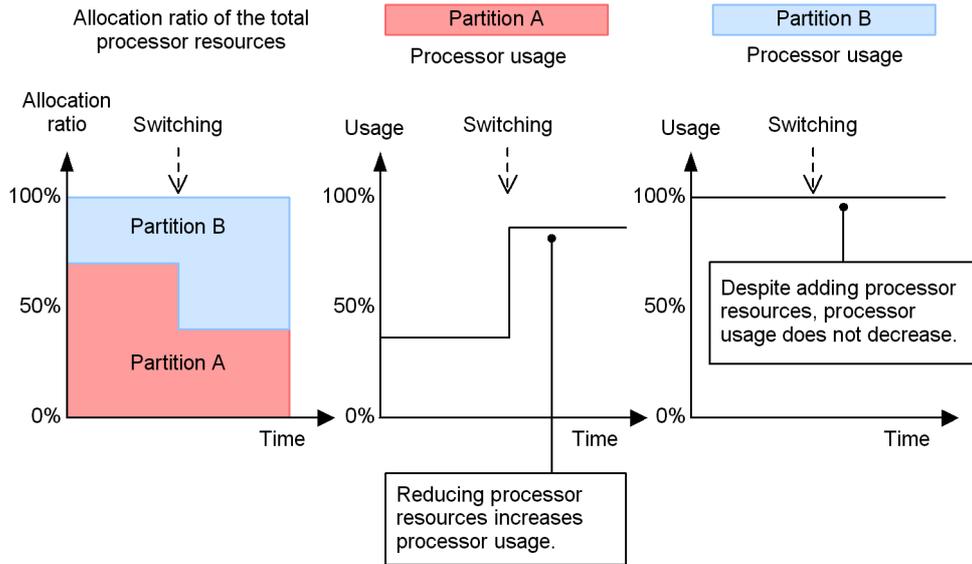
Note, however, that, even when a single guest OS or logical partition is under high load on a virtualized system, the system-wide load might seem low. Therefore, check whether all guest operating systems or all logical partitions are under high load.

When using PFM - Agent for Platform to check the load status in a virtualized system, you might require a different perspective from the one you use for an ordinary environment.

A virtualized system contains resources that can be changed dynamically, such as processors and memory. Therefore, when monitoring processor and memory usage, also monitor the items not easily affected by dynamic changes in resources, such as the current queue length and paging frequency.

The following graph gives an example of processor resources.

*Figure 1-7: Case in which additional processor resources are recommended (during processor usage monitoring)*



In the figure example, the allocation ratio is being switched due to the high load of processor usage for logical partition B, but usage is high for both logical partitions A and B. In this kind of case, physical resources are insufficient.

**(4) Precautions regarding usage of PFM - Agent for Platform on virtualized systems**

The performance data collected by PFM - Agent for Platform in a virtualized system is specific to each virtual machine. Therefore, PFM - Agent for Platform should be installed on each virtual machine.

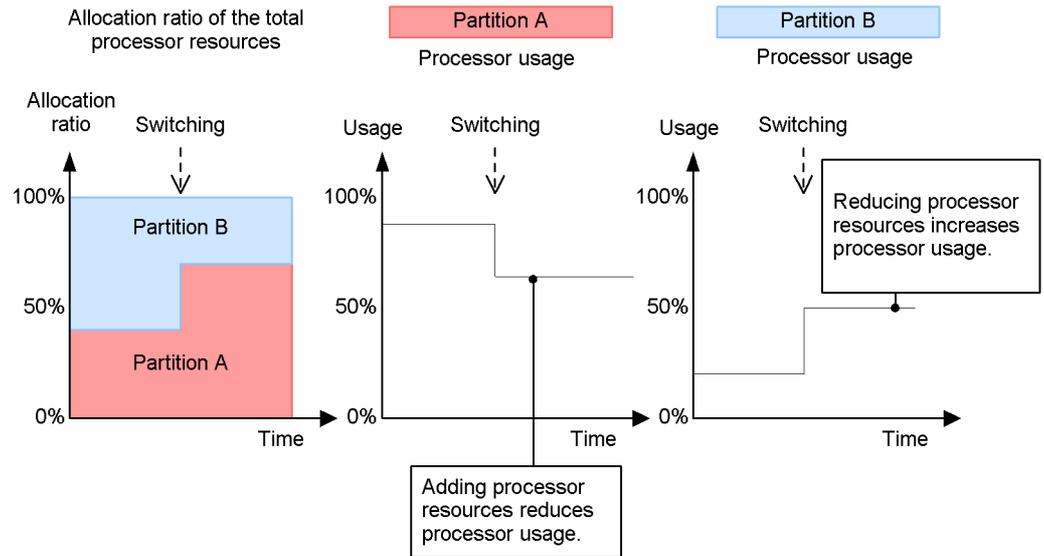
Performance data about each virtual machine cannot be collected from the overall virtualized system, or from the management machine.

The following are precautions regarding the collection of information for each resource.

**(a) Precautions regarding collection of processor information**

The processor usage collected in a virtualized system might not yield the intended values. This is because the virtualized system divides up processor resources and dynamically allocates them to other logical partitions. For example, if significant amounts of processor resources are being used for a specific logical partition due to high load, only limited processor resources can sometimes be used on other logical partitions.

*Figure 1-8:* Case in which collected values differ due to dynamic resource changes



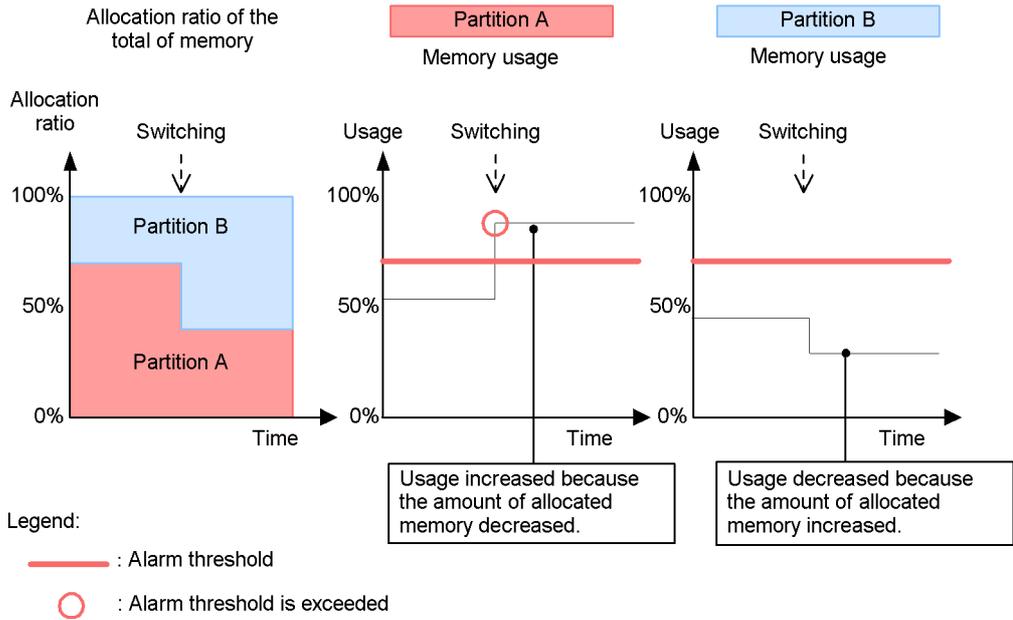
Note that if an application on a given logical partition is using a physical processor, jobs on other logical partitions are cause to wait due to operation. In this case, processor usage cannot be accurately ascertained.

#### (b) Precautions regarding collection of memory information

As with processors, information about memory usage on a virtualized system might also differ from the system-wide ratio, due to dynamic resource changes.

For example, when 256 MB of memory area is allocated, and only 64 MB of it is used, PFM - Agent for Platform displays a value of 25% for the memory usage allocation. In this case, when the memory allocation area is dynamically changed from 256 MB to 128 MB, PFM - Agent for Platform displays 50% for the memory usage. Keep in mind that an unexpected warnings might occur when a memory resource is specified for an alarm.

Figure 1-9: Case in which memory resources are built into an alarm



**(c) Precautions regarding collection of disk information**

As with processor resources, sometimes disk busy rates cannot be accurately ascertained. For example, on a virtualized system, some jobs might be using physical disk resources while others are waiting due to operation.

**(d) Precautions regarding collection of network information**

PFM - Agent for Platform measures only incoming and outgoing packets for network information. Therefore, operation on a virtualized system is the same as normal usage, but in some cases virtual network information is displayed for network information. This is not an issue, because PFM - Agent for Platform collects network information recognized by the OS running on the virtual machine.

**(e) Precautions regarding collection of process information**

Process-related performance data consists of items that show the process count and items that show the amount of resources used by processes. In both cases, since data on the logical partition is obtained for virtualized systems, this process information does not reflect the entire virtualized system.

PFM - Agent for Platform collects both the number of processes on each logical partition, and the amount of resources being used by the processes.

**(5) Virtualized system functionality and collected performance data**

In virtualized systems, the setup of provided resources differs depending on how the system is implemented. Also, resource changes might or might not require temporary stoppage of a logical partition. If a logical partition needs to be stopped, this should not affect much because PFM - Agent for Platform is also stopped. However, if a logical partition does not need to be stopped, and the system resources change dynamically, the performance data obtained by PFM - Agent for Platform might be significantly affected. In this case, we recommend collecting performance data not significantly affected by dynamic resource changes.

The following table lists the resources that can be collected for each virtualized system.

*Table 1-34: Resources for each virtualized system*

Virtualized system	Resource			
	Processor count	Memory	Disk	Network
VMware ESX Server 3.0	Required	Required	Required	Required
Virtage	Required	Required	--	Required

Legend:

Required: Requires temporary logical partition stoppage

--: Not supported

**(a) VMware ESX Server 3.0**

VMware is software that provides virtualized systems on the Intel architecture. Since it provides virtualized systems implemented in software, it is a general purpose implementation that can run flexibly on several environments.

- **VMware ESX Server functionality**

Like other virtualized systems, VMware provides the following functionality:

- Virtual networks
- Virtual processors
- Virtual memory
- Virtual disks

VMware manages combinations of the above functionality to create a virtual machine (VM). The created VM is recognized as a single host from other hosts, and can be treated the same as a physical machine.

Because multiple VMs can be created and run, operating systems like Linux and Windows can be run concurrently.

- **VMware ESX Server configuration**

VMware implements a virtualized system by creating a distinction between a host OS and a guest OS.

To set up a virtualized system:

1. Install Windows, Linux, or another OS on the actual hardware.
2. Install VMware on the installed host OS.

Here, the OS on which VMware is installed is called the *host OS*.

3. Use VMware to create a VM.
4. Install other operating systems on the created VM.

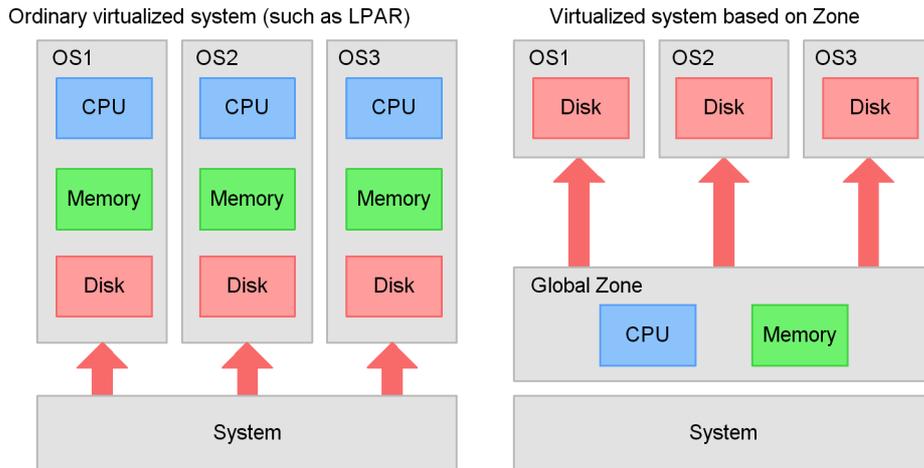
An operating system installed on the VM is called a *guest OS*.

As shown above, VMware uses a parent/child configuration to implement a virtualized system, in which the guest OS is executed on the host OS.

One feature of VMware ESX Server is that a specialized custom OS is used as the host OS instead of Windows or Linux. In other words, VMware ESX Server implements a virtualized system in which Windows or Linux is running on a specialized custom OS.

Depending on the type of VMware, the host OS can also be Windows or Linux instead of the custom OS.

Figure 1-10: VMware configuration



- **Using PFM - Agent for Platform on VMware ESX Server**

Keep the following in mind when using PFM - Agent for Platform on VMware ESX Server.

#### Installing PFM - Agent for Platform

To use PFM - Agent for Platform, install it on the guest OS. Because the host OS for VMware ESX Server is an optimized custom OS to implement virtualized systems with VMware, application operation is not guaranteed.

#### Processor information

In a virtualized system, if sufficient resources are not allocated to the host OS, impact will extend to the operation of the host OS. In particular, processor resources are likely to involve overload, and it might be difficult to determine whether the processor resources allocated to the VM are insufficient, or whether the host OS processor resources are insufficient.

VMware also has a feature that allows upper and lower limits to be set for processor usage allocation, which can cause wide swings in usage because resource switching is automatically performed within the set range.

If this seems to be the case, monitor items that are not easily impacted by dynamic changes to processor resources, such as the current queue length.

#### Memory

Be careful when setting an alarm for memory as a resource that can be changed dynamically. Even when the amount of memory used is fixed, if the allocated memory resources are reduced, memory usage will grow, and might cause alarms to be notified unintentionally.

#### Devices

Disk performance data is only for logical partition groups on the guest OS. System-wide performance data that includes the host OS cannot be collected. For the network adapter information, information about network adapters allocated to the guest OS is obtained.

### (b) **Virtage**

- **Virtage functionality**

Like other virtualized systems, the functionality provided by Virtage includes the following:

- Virtual networks
- Virtual processors
- Virtual memory

Virtage manages the above functionality to implement a virtualized system. Whenever any resource is changed, the logical partition needs to be temporarily stopped.

- **Virtage configuration**

Like VMware, Virtage has a parent/child configuration.

To set up a virtualized system on Virtage:

1. Install Virtage on the SVP.
2. Start the installed instance of Virtage.
3. Create and set up a virtual machine.
4. Start the virtual machine.

- **Using PFM - Agent for Platform on Virtage**

Keep the following in mind when using PFM - Agent for Platform on Virtage.

Installing PFM - Agent for Platform

Because Virtage is configured in a special environment called an *SVP frame*, do not install PFM - Agent for Platform on an SVP frame.

Processor information

Because a virtualized system based on Virtage runs after the logical partition is set up, the number of processors is not changed while PFM - Agent for Platform is running. Accordingly, operation can be performed as usual, but the number of allocated processors might not match the number of processors that physically exist.

Memory

Because a virtualized system based on Virtage runs after the logical partition is set up, the amount of memory is not changed while PFM - Agent for Platform is running. Accordingly, operation can be performed as usual.

Devices

Disk performance data is only for logical partition groups. System-wide performance data that includes the host OS cannot be collected. For the network adapter information, information about network adapters allocated to the guest OS is obtained.

**(6) Range of data collected for each virtualized system**

The following table describes the range of data collected by PFM - Agent for Platform when it is used on a virtualized system.

*Table 1-35: Range of data collected for each virtualized system*

<b>Record</b>	<b>VMware and Virtage</b>
PD	Processes on the guest OS.
PD_APP	Processes on the guest OS.
PD_DEV	Devices for file system drivers and kernel drivers on the guest OS.
PD_ELOG	Event log on the guest OS.
PD_GEND	Used-defined performance data on the guest OS.
PD_PAGF	Performance data about paging file instances on the guest OS.
PD_PDI	Processes on the guest OS.
PD_PEND	Processes on the guest OS.
PD_SVC	Performance data about application services registered with the service control manager on the guest OS.
PD_UPD	User-specified performance data on the guest OS.
PD_UPDB	User-specified performance data on the guest OS.
PI	System values on the guest OS.
PI_AD	Active Directory performance data on the guest OS.
PI_BRSR	--
PI_GENI	User-defined performance data on the guest OS.
PI_ICM6	ICMP-related performance data on the guest OS.
PI_ICMP	ICMP-related performance data on the guest OS.
PI_IP	IP-related performance data on the guest OS.
PI_IP6	IP-related performance data on the guest OS.
PI_LOGD	Performance data about the logical partitions allocated to the guest OS.
PI_NBT	--
PI_NETI	TCP/IP-related performance data on the guest OS.
PI_PCSR	Information about processors allocated to the guest OS.
PI_PHYD	Performance data about total values or average values for logical partitions allocated to the guest OS.

1. Overview of PFM - Agent for Platform

Record	VMware and Virtage
PI_SVRQ	Performance data about the queue for the Server service provided by the guest OS.
PI_TCP	TCP-related performance data on the guest OS.
PI_TCP6	TCP-related performance data on the guest OS.
PI_UDP	UDP-related performance data on the guest OS.
PI_UDP6	UDP-related performance data on the guest OS.
PI_UPI	User-specified performance data on the guest OS.
PI_UPIB	User-specified performance data on the guest OS.
PI_WGRP	Processes on the guest OS.
PI_WINS	--

Legend:

--: N/A

## Chapter

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# 2. Installation and Setup

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This chapter explains how to install and set up PFM - Agent for Platform. For details about how to install and set up the entire Performance Management system, see the chapter explaining installation and setup in the manual *Job Management Partner 1/ Performance Management Planning and Configuration Guide*.

- 2.1 Installation and setup
- 2.2 Uninstallation and unsetup
- 2.3 Changing the system configuration of PFM - Agent for Platform
- 2.4 Changing the operation of PFM - Agent for Platform
- 2.5 Starting the command prompt
- 2.6 Backup and restoration
- 2.7 Settings for browsing manuals in a Web browser

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## 2.1 Installation and setup

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This section explains how to install and set up PFM - Agent for Platform.

### 2.1.1 Before installing and setting up PFM - Agent for Platform

Before installing and setting up PFM - Agent for Platform, make sure that the requirements described below are satisfied.

#### (1) **Required OS**

PFM - Agent for Platform can run on the following OSs:

- Windows Server 2003
- Windows Server 2008

#### (2) **Network environment setup**

The following explains the network environment that is necessary for Performance Management to operate.

##### (a) **IP address setup**

For the PFM - Agent host, you must set up an environment in which the IP address can be resolved using a host name. PFM - Agent cannot start in an environment in which the IP address cannot be resolved.

Actual host names or alias names can be used for a monitoring host name (the name used as the host name of a Performance Management system).

- When using an actual host name as a monitoring host name  
Execute the `hostname` command on a Windows system or `uname -n` command on a UNIX system to check the host name, and set up the environment so that it can resolve IP addresses. Note that on a UNIX system, the host name obtained by the `hostname` command can also be used.
- When using an alias name as a monitoring host name  
Set up the environment so that it can resolve the IP addresses for the set alias name.

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

Host names and IP addresses can be set using any of the following:

- The host information settings file for Performance Management (`jpchosts` file)
- `hosts` file

- DNS (Domain Name System)

*Note:*

- Performance Management can be run on a DNS environment, but does not support host names in the FQDN (Fully Qualified Domain Name) format. Accordingly, leave out the domain name when setting monitoring host names.
- If PFM - Agent for Platform is to be used in multiple LAN environments, set up the IP address in the `jpchosts` file. For details, see the chapter explaining installation and setup in the manual *Job Management Partner 1/Performance Management Planning and Configuration Guide*.
- Performance Management cannot be run on a host on which DHCP is used to assign dynamic IP addresses. Set fixed IP addresses on all hosts on which Performance Management is installed.

### (b) Port number setup

The default port numbers shown in the table below are assigned to Performance Management program services. For any other services or programs, port numbers currently not in use in the system are automatically assigned when the service or program is started. When you are using Performance Management in an environment with a firewall, assign fixed port numbers. For details about how to fix port numbers, see the chapter explaining installation and setup in the manual *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

*Table 2-1:* Default port numbers and Performance Management program services (for Windows)

Service explanation	Service name	Parameter	Port number	Remarks
Service configuration information management function	Name Server	<code>jp1pcnsvr</code>	22285	Port number used by the Name Server service of PFM - Manager. This port number is set for all hosts in Performance Management.
OpenView linkage facility	NNM Object Manager	<code>jp1pcovsvr</code>	22292	Port number used by the OpenView linkage facility of PFM - Manager and PFM - Base for communicating between a map manager and an object manager. This port number is set for hosts in which PFM - Manager and PFM - Base are installed.

## 2. Installation and Setup

<b>Service explanation</b>	<b>Service name</b>	<b>Parameter</b>	<b>Port number</b>	<b>Remarks</b>
Service status management function	Status Server	jp1pcstatsvr	22350	Port number used by the Status Server service of PFM - Manager and PFM - Base. This port number is set for hosts in which PFM - Manager and PFM - Base are installed.

Set up the network to enable these PFM - Agents to communicate using the assigned port numbers.

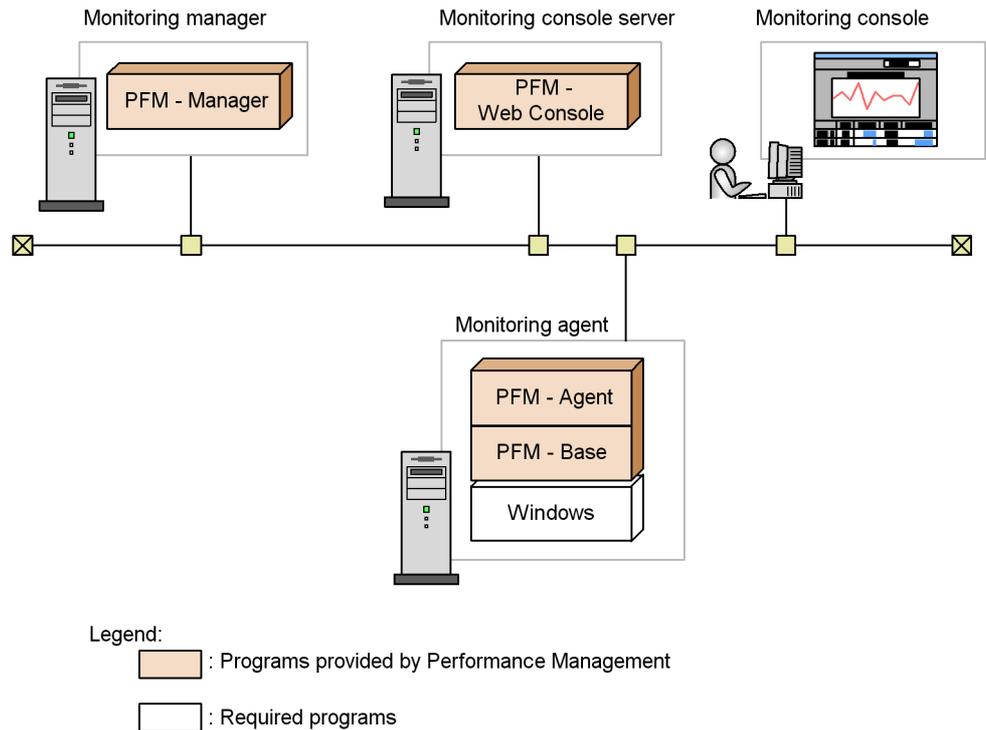
### **(3) OS user permission necessary for installation**

When installing PFM - Agent for Platform, you must execute the installation procedure from an account that has the Administrators permission.

### **(4) Prerequisite programs**

This subsection explains the prerequisite programs that are necessary for installing PFM - Agent for Platform. The figure below shows the program configuration.

Figure 2-1: Program configuration

**(a) Monitoring target programs**

PFM - Agent for Platform monitors the following programs:

- Windows Server 2003
- Windows Server 2008

These monitoring target programs and PFM - Agent for Platform must be installed on the same host.

**(b) Performance Management programs**

Install PFM - Agent and PFM - Base on the monitoring agent. PFM - Base is a prerequisite program for PFM - Agent. Even when installing multiple copies of PFM - Agent on the same host, you need only a single copy of PFM - Base.

However, if you are installing PFM - Manager and PFM - Agent on the same host, you do not need PFM - Base.

To use PFM - Agent for Platform to monitor the operation of Windows Server, you

need PFM - Manager and PFM - Web Console.

The following table lists the versions of PFM - Manager and PFM - Base supported by PFM - Agent for Platform 09-00.

Table 2-2: Supported version of PFM - Manager of PFM - Base

OS	Supported version of PFM - Manager or PFM - Base
Windows Server 2003	08-00 or later
Windows Server 2008	09-00 or later

**(5) Environment configuration required for collecting performance data**

To collect performance data on the network environment required for running PFM - Agent for Platform, all network services, protocols, servers, and products must be installed before the Agent Collector service is started. Note that if the environment for the installed products is not configured, or if additionally installed services are not running, performance data will be collected, but data might not be obtained field values might be displayed as 0.

To collect performance data for specific records in PFM - Agent for Platform, the prerequisites shown in the following table need to be satisfied before the Agent Collector service is started. Note that the following table does not include services required for OS operation, such as Event Logs (service name: **Eventlog**).

The following table describes the prerequisites for collecting performance data.

Table 2-3: Prerequisites for collecting performance data

Category	Record name (record ID)	Field name (PFM - View name)	Prerequisites
OS	Logical Disk Overview (PI_LOGD)	Page File Size Mbytes (PAGE_FILE_SIZE_BYTES)	Windows Management Instrumentation (service name: <b>WinMgmt</b> ) has started.
	System Overview (PI)	System Type (SYSTEM_TYPE)	<i>Note:</i> This is only required for Windows Server 2003 and Windows Server 2008.
Network services	Browser Overview (PI_BRSR)	All	Computer Browser (service name: <b>Browser</b> ) has started.
	WINS Server Overview (PI_WINS)	All	Windows Internet Name Service (WINS) has been installed, and subsequently added services have been started.

Category	Record name (record ID)	Field name (PFM - View name)	Prerequisites
	Server Work Queues Overview (PI_SVRQ)	All	Server (service name: <b>LanmanServer</b> ) has started.
	System Overview (PI)	Blocking Reqs Rejected (BLOCKING_REQUESTS_REJECTED)	
		Bytes Rcvd/sec (BYTES_RECEIVED_PER_SEC)	
		Bytes Total/sec (BYTES_TOTAL_PER_SEC)	
		Bytes Xmitd/sec (BYTES_TRANSMITTED_PER_SEC)	
		Context Blocks Queued/sec (CONTEXT_BLOCKS_QUEUED_PER_SEC)	
		Errors Access Permissions (ERRORS_ACCESS_PERMISSIONS)	
		Errors Granted Access (ERRORS_GRANTED_ACCESS)	
		Errors Logon (ERRORS_LOGON)	
		Errors System (ERRORS_SYSTEM)	
		File Directory Searches (FILE_DIRECTORY_SEARCHES)	
		Files Open (FILES_OPEN)	
		Files Opened Total (FILES_OPENED_TOTAL)	
		Logon Total (LOGON_TOTAL)	
		Logon/sec (LOGON_PER_SEC)	

2. Installation and Setup

Category	Record name (record ID)	Field name (PFM - View name)	Prerequisites
		Pool Nonpaged Failures (POOL_NONPAGED_FAILURES)	
		Pool Nonpaged Peak (POOL_NONPAGED_PEAK)	
		Pool Paged Failures (POOL_PAGED_FAILURES)	
		Pool Paged Peak (POOL_PAGED_PEAK)	
		Server Pool Nonpaged Bytes (SERVER_POOL_NONPAGED_BYTES)	
		Server Pool Paged Bytes (SERVER_POOL_PAGED_BYTES)	
		Server Sessions (SERVER_SESSIONS)	
		Sessions Errored Out (SESSIONS_ERRORED_OUT)	
		Sessions Forced Off (SESSIONS_FORCED_OFF)	
		Sessions Logged Off (SESSIONS_LOGGED_OFF)	
		Sessions Timed Out (SESSIONS_TIMED_OUT)	
		Work Item Shortages (WORK_ITEM_SHORTAGES)	

Category	Record name (record ID)	Field name (PFM - View name)	Prerequisites
Active Directory	Active Directory Overview (PI_AD)	Cache % Hit	Active Directory is enabled, and the Active Directory database performance counter has been installed. <i>Note:</i> On Windows Server 2003 (x64) and the 64-bit version of Windows Server 2008, the <code>wmiadap /f</code> command needs to be executed from the DOS prompt, and the OS needs to be restarted.
		Cache Page Fault Stalls/sec	
		Cache Page Faults/sec	
		Cache Size	
		Log Record Stalls/sec	
		Log Threads Waiting	
		Log Writes/sec	
		Table Open Cache % Hit	
		Table Open Cache Hits/sec	
		Table Open Cache Misses/sec	
		Table Opens/sec	
		Anything other than the above	Active Directory is enabled.

**(6) Notes**

Note the following points when installing and setting up Performance Management.

**(a) Precautions regarding the registry**

PFM - Agent for Platform can only be run on environments set up using the standard method provided by the OS. Despite the information provided by Microsoft technical support, if the OS environment is customized such as by using a registry editor to directly edit registry information, performance data might no longer be collected properly.

**(b) Precautions regarding environment variables**

Because Performance Management uses `JPC_HOSTNAME` as an environment variable, do not set it as a user-specific environment variable, as this will prevent Performance Management from operating properly.

**(c) Notes on installing and setting up multiple Performance Management programs on the same host**

With Performance Management, you can install PFM - Manager, PFM - Web Console, and PFM - Agent on the same host. When doing so, note the following points:

- If you are installing PFM - Manager and PFM - Agent on the same host, you do not need PFM - Base. In this case, because the prerequisite program for PFM - Agent is PFM - Manager, install PFM - Manager first, and then install PFM - Agent.
- You cannot install PFM - Base and PFM - Manager on the same host. To install PFM - Manager on the host on which PFM - Base and PFM - Agent are installed, first uninstall all Performance Management programs except PFM - Web Console, and then install PFM - Manager, followed by PFM - Agent. To install PFM - Base on the host on which PFM - Manager and PFM - Agent are installed, first uninstall all Performance Management programs except PFM - Web Console, and then install PFM - Base, followed by PFM - Agent.
- When you install PFM - Agent on a host on which PFM - Manager is installed, PFM - Manager of the local host becomes PFM - Manager for the connection destination. In this case, you cannot change PFM - Manager for the connection destination to PFM - Manager of a remote host. To connect to PFM - Manager of a remote host, make sure that PFM - Manager is not installed on the host on which you want to install PFM - Agent.
- When you install PFM - Manager on a host on which PFM - Agent is installed, PFM - Manager for the connection destination of PFM - Agent is reset to the local host name. Check the setting results that are output to the common message log.
- To install PFM - Agent on a host on which PFM - Web Console is installed, close all browser windows before installing PFM - Agent.
- When a Performance Management program is newly installed, the status management function is enabled as the default. However, if you upgrade from version 07-00 to 08-00 or newer, the settings for the status management function remain the same as they were in the older version. For details about how to change the settings for the status management function, see the chapter explaining error detection in Performance Management in the manual *Job Management Partner 1/Performance Management User's Guide*.

*Hint:*

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

**(d) Notes on version upgrade**

Note the following points when upgrading PFM - Agent from an older version to a newer one:

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

- Before installing a Performance Management program, stop all Performance Management programs and services of the local host. For details about how to stop services, see the chapter explaining how to start and stop Performance Management in the manual *Job Management Partner 1/Performance Management Planning and Configuration Guide*.
- When installing PFM - Agent on a host on which Performance Management programs are already installed, the installation path for PFM - Agent is the same as the installation path for the Performance Management programs, other than PFM - Web Console, that are already installed. To change the installation path, you need to delete all Performance Management programs, other than PFM - Web Console, that are already installed, and then reinstall them.
- You cannot install PFM - Base and PFM - Manager on the same host. To install PFM - Manager on the host on which PFM - Base and PFM - Agent are installed, first uninstall all Performance Management programs except PFM - Web Console, and then install PFM - Manager, followed by PFM - Agent. To install PFM - Base on the host on which PFM - Manager and PFM - Agent are installed, first uninstall all Performance Management programs except PFM - Web Console, and then install PFM - Base, followed by PFM - Agent.
- In Performance Management programs of version 08-00 or later, the locations of the Store execution programs (`jpcsto.exe` and `stpqlpr.exe`) have been changed. When PFM - Agent is upgraded to version 08-00 or later, the Store execution modules in the previous locations are deleted.
- During upgrade installation, because the existing Store database is automatically upgraded, twice as much disk capacity as that needed for the Store database is temporarily required. Before performing an upgrade installation, make sure that the disk on which the Store database is stored has sufficient free space.

**(e) Other notes**

- If you install PFM - Agent for Platform while another Performance Management program or service is running, or while another program (such as Windows Event Viewer) that might reference Performance Management files is running, a message prompting a system restart might be displayed. In this case, follow the

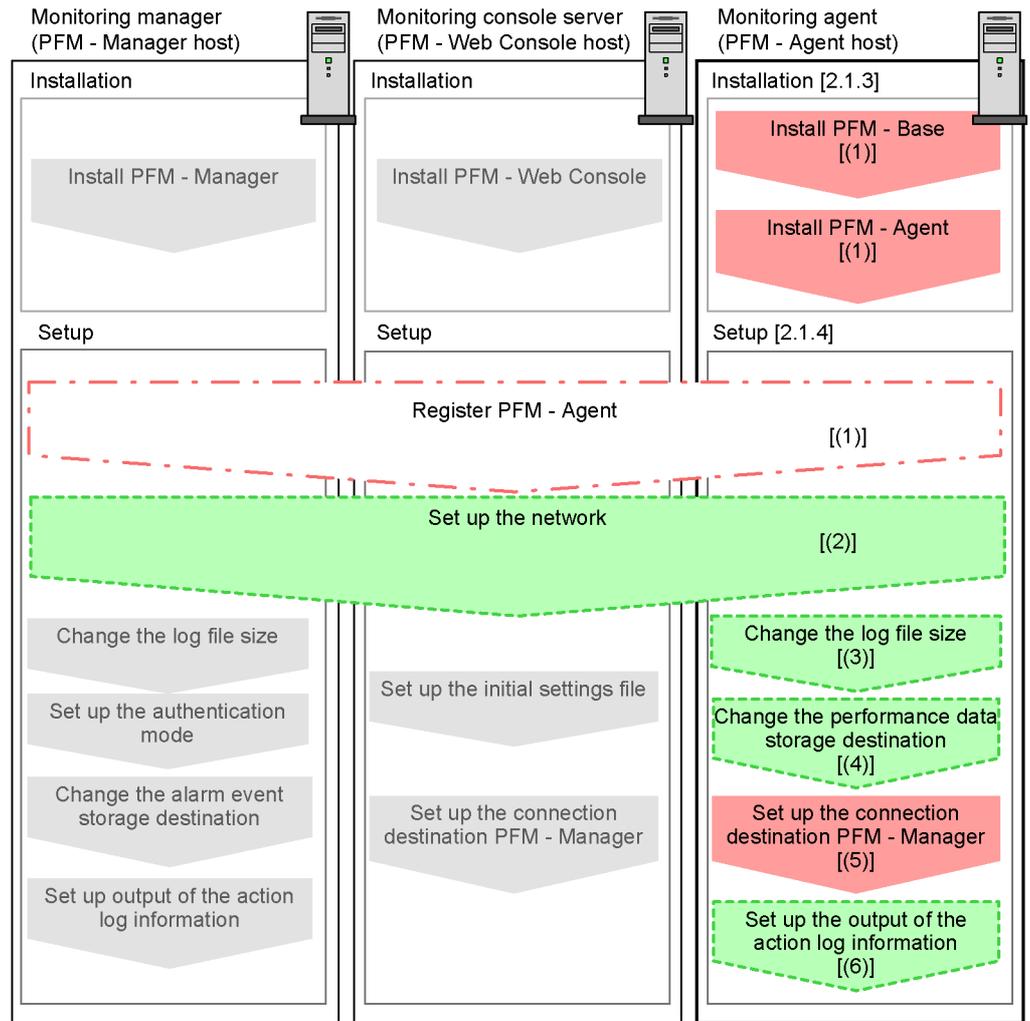
message and restart the system to complete the installation.

- If you install PFM - Agent for Platform while another Performance Management program or service is running, while another program (such as Windows Event Viewer) that might reference Performance Management files is running, while there is insufficient disk space, or while a folder permission is not valid, file expansion might fail. If any Performance Management programs or services are running, or if any other programs that reference Performance Management files are running, stop all these programs first, and then re-install PFM - Agent for Platform. If disk space shortage or invalid folder permission is a problem, resolve these issues first, and then reinstall.
- When installing the Performance Management program, check whether any of the following security-related programs are installed. If they are installed, perform the measures explained.
  - Security monitoring programs  
Stop or change the settings for security monitoring programs so that installation of the Performance Management program is not prevented.
  - Virus detection programs  
We recommend that any virus detection programs be stopped before the Performance Management program is installed.  
If a virus detection program is running during installation of the Performance Management program, the installation speed might suffer, and installation might not be executed, might not be performed correctly.
  - Process monitoring programs  
Stop or change the settings for any process monitoring programs, so that monitoring is not performed for Performance Management services or processes, and Common Component services or processes.  
If a process monitoring program starts or stops these services or processes during installation of the Performance Management program, installation might fail.

### 2.1.2 Installation and setup workflow

This section explains the flow for installing and setting up PFM - Agent for Platform.

Figure 2-2: Installation and setup flow



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

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

### 2.1.3 Installation procedure

This section explains the order in which to install PFM - Agent programs and how to install them from the CD-ROM provided.

#### (1) Program installation procedure

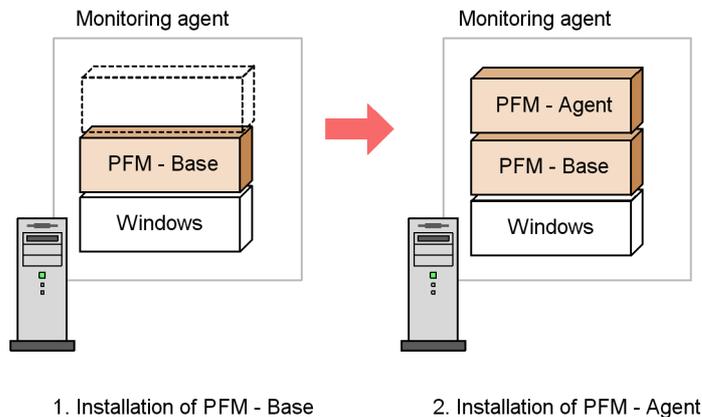
First install PFM - Base and then install PFM - Agent. You cannot install PFM - Agent on a host on which PFM - Base is not installed.

When installing PFM - Agent on the same host as PFM - Manager, install PFM - Manager first, followed by PFM - Agent.

When the Store database version is updated from 1.0 to 2.0, the setup procedure differs depending on the version of PFM - Manager or PFM - Base that is already installed. For details about how to set up version 2.0 of the Store database, see *2.4.2 Updating the Store version to 2.0*.

When installing multiple copies of PFM - Agent on the same host, the order in which the copies are installed does not matter.

Figure 2-3: Program installation procedure



#### (2) Program installation method

To install Performance Management programs on a Windows host, you can either use the CD-ROM provided, or remotely install them using JP1/Software Distribution. For details about how to use JP1/Software Distribution, see the manual *Job Management Partner 1/Software Distribution Administrator's Guide Volume 1 (for Windows systems)*.

### Precautions regarding all operating systems

If Performance Management programs and services are active on the host on which Performance Management programs are to be installed, stop all the active programs and services. For details about how to stop services, see the chapter explaining how to start and stop Performance Management in the manual *Job Management Partner 1/Performance Management User's Guide*.

### Precautions regarding installation on a Windows Server 2008 environment

If user account control functionality (UAC) is enabled on the operating system, the User Account Control dialog box might be displayed during installation. If this dialog box is displayed, click the **Continue** button to continue installation, or click the **Cancel** button to cancel installation.

To install Performance Management programs from the CD-ROM provided:

1. Use the Administrators permission to log onto the host on which Performance Management programs are to be installed.
2. Stop all Performance Management programs and services.

If Performance Management programs and services are active, stop them all.

3. Insert the CD-ROM into the drive.

Proceed with installation by following the instructions of the installer that starts.

During installation, you must define the following information:

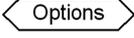
- User information  
Enter information such as a user name.
- Installation destination folder  
Specify the folder in which to install Performance Management programs.  
The installation destination folder is created when you select a directory in the Select Directory dialog box and click the **OK** button. If you create a folder by mistake, delete it after installation.
- Program folder  
Specify the program menu name that is to be registered under the **All Programs** menu, which opens when **Start** is clicked in Windows.  
By default, *Performance Management* is registered.

*Reference note:*

You can specify the installation destination folder and program folder for Performance Management programs, except PFM - Web Console, only the first time you install Performance Management programs on the host. During subsequent installation operations, Performance Management programs are installed or registered in the folder specified during the initial installation.

### 2.1.4 Setting up PFM - Agent for Platform

This section explains the set up procedure needed for using PFM - Agent for Platform.

 indicates setup items that might be required depending on the usage environment or optional setup items that are used for changing the default settings.

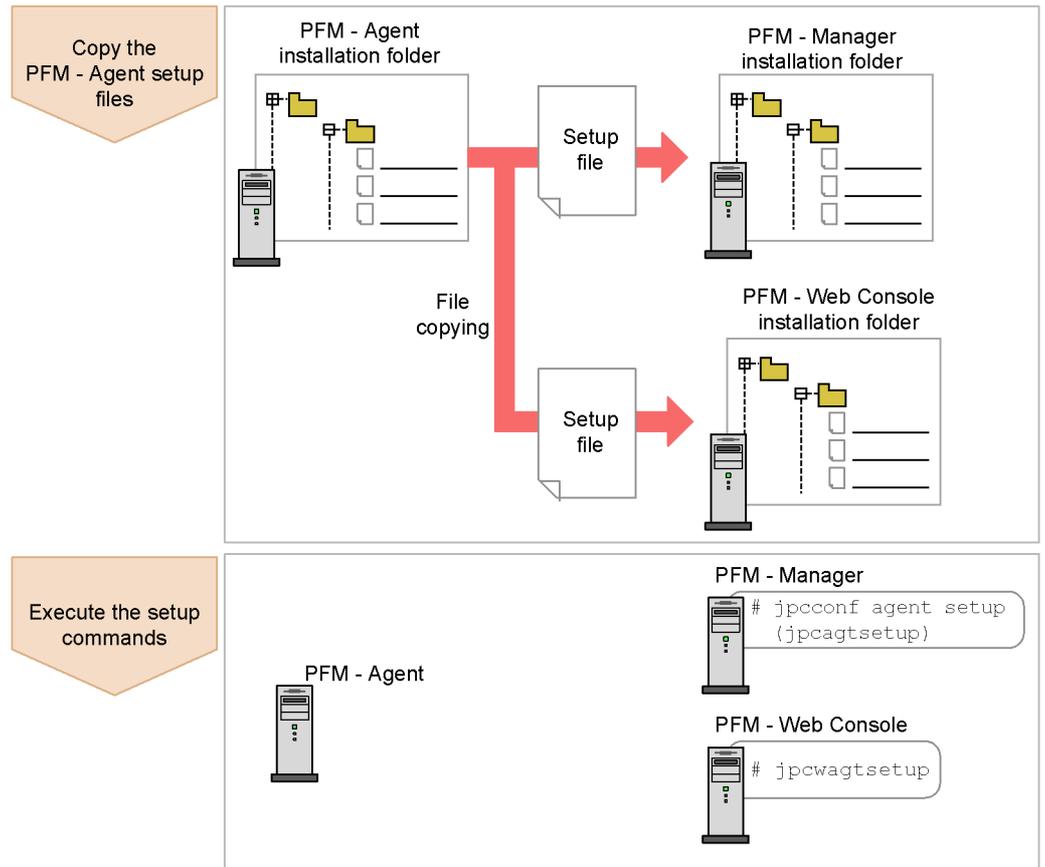
#### (1) Registering PFM - Agent for Platform

To use PFM - Manager and PFM - Web Console to centrally manage PFM - Agent, you need to register PFM - Agent for Platform in PFM - Manager and PFM - Web Console.

When the version of PFM - Manager is 09-00 and later, you do not need to perform the procedure explained here, because PFM - Agent is automatically registered. However, you must manually register the PFM - Agent instances whose data model version is not provided in the PFM - Manager release notes. For details about data model versions for PFM - Agent for Platform, see *H. Version Compatibility*.

The following figure shows the flow for registering PFM - Agent.

Figure 2-4: PFM - Agent registration flow



*Note:*

- If you add the same version of PFM - Agent for Platform to a Performance Management system on which PFM - Agent for Platform information is already registered, you need not register PFM - Agent.
- If the data model version of PFM - Agent for Platform is 3.0 or 4.0, setup for updating the data model version is not necessary.
- When installing PFM - Agent for Platform of differing versions on different hosts, set up the older version first and then the new version.
- When you install PFM - Agent on the same host as PFM - Manager, the `jpccconf agent setup (jpcagtsetup)` command is automatically executed. When the message `KAVE05908-I New agent setup ended successfully.` is output to the common message log, check the result. If the command was not executed correctly, re-execute it. For details about command execution, see the chapter on commands in the manual *Job Management Partner 1/Performance Management Reference*.

**(a) Copying the PFM - Agent for Platform setup files**

Copy the setup files located at the host on which PFM - Agent for Platform was installed to the host on which PFM - Manager and PFM - Web Console are installed.

To copy the setup files:

1. If PFM - Web Console is active, stop it.
2. Copy the PFM - Agent setup files in the binary mode.

The table below shows the file storage locations and copying destinations.

*Table 2-4: Setup files to be copied*

Copy destination			PFM - Agent setup files
PFM program name	OS	Copy destination folder	
PFM - Manager	Windows	<i>PFM-Manager-installation-folder\setup\</i>	<i>installation-folder\setup\jpcagttw.EXE</i>
	UNIX	<i>/opt/jp1pc/setup/</i>	<i>installation-folder\setup\jpcagttu.Z</i>
PFM - Web Console	Windows	<i>PFM-Web-Console-installation-folder\setup\</i>	<i>installation-folder\setup\jpcagttw.EXE</i>
	UNIX	<i>/opt/jp1pcwebcon/setup/</i>	<i>installation-folder\setup\jpcagttu.Z</i>

**(b) Executing the setup command on the PFM - Manager host**

In PFM - Manager, execute the following command to set up PFM - Agent for Platform:

```
jpccconf agent setup -key Windows (jpcagtsetup agtt)
```

*Note:*

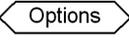
If you execute the `jpccconf agent setup (jpcagtsetup)` command when the Performance Management programs and services of the local host on which the command is being executed have not completely stopped, an error might occur. In this case, make sure the Performance Management programs and services have stopped completely, and then re-execute the `jpccconf agent setup (jpcagtsetup)` command.

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

In PFM - Web Console, execute the following command to set up PFM - Agent for Platform:

```
jpcwagtsetup
```

After this operation is finished, you might delete the PFM - Agent setup files located on the PFM - Web Console host.

**(2) Network setup** 

This is necessary only when you need to change the settings according to the network configuration that uses Performance Management.

In network setup, you can specify the following two items:

- IP addresses

Specify IP addresses when Performance Management is to be used in a network connected to multiple LANs. To specify multiple IP addresses, define host names and IP addresses in the `jpchosts` file. The same `jpchosts` file that is set up must be used throughout the entire Performance Management system.

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

- Port number

You can specify the port number to be used by Performance Management. To avoid operational confusion, use the same port number and service name throughout the entire Performance Management system.

For details about port number setup, see the chapter explaining installation and setup in the manual *Job Management Partner 1/Performance Management*

*Planning and Configuration Guide.*

**(3) Changing the log file size** 

The operational status of Performance Management is output to Performance Management's own log file. This log file is called the *common message log*. For the common message log, two files, each with 2,048 KB capacity by default, are used. You can change the file size if necessary.

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

**(4) Changing the performance data storage destination** 

This is necessary only if you want to change the storage destination for the database for storing the performance data managed by PFM - Agent for Platform, the backup destination, or the export destination folder.

By default, performance data is stored in the following locations:

- Save destination folder: *installation-folder\agtt\store\*
- Backup destination folder: *installation-folder\agtt\store\backup\*
- Partial backup destination folder: *installation-folder\agtt\store\partial\*
- Export destination folder: *installation-folder\agtt\store\dump\*
- Import destination folder: *installation-folder\agtt\store\import\*

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

**(5) Setting up PFM - Manager for the connection destination of PFM - Agent for Platform**

On the host on which PFM - Agent is installed, set up the PFM - Manager that manages that PFM - Agent. To set up PFM - Manager for the connection destination, use the `jpccconf mgrhost define (jpcnshostname)` command.

*Note:*

- Even when multiple copies of PFM - Agent are installed on the same host, you can specify only a single PFM - Manager as the connection destination. You cannot specify a different PFM - Manager for each PFM - Agent.
- When PFM - Agent and PFM - Manager are installed on the same host, PFM - Manager for the connection destination becomes the PFM - Manager of the local host. In this case, you cannot change the PFM - Manager for the connection destination to another PFM - Manager.

To set up PFM - Manager for the connection destination:

1. Stop Performance Management programs and services.

Before executing a setup operation, stop all Performance Management programs and services on the local host if they are active. For details about how to stop services, see the chapter explaining how to start and stop Performance Management in the manual *Job Management Partner 1/Performance Management User's Guide*.

If Performance Management programs and services are active when you attempt to execute the `jpccconf mgrhost define (jpcnshostname)` command, a message is displayed asking the user whether to stop those programs and services.

2. Specify the host name of the PFM - Manager host at the connection destination and execute the `jpccconf mgrhost define (jpcnshostname)` command.

For example, if the PFM - Manager host at the connection destination is on `host01`, specify the following:

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

## **(6) Setting up the action log**

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

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

---

## 2.2 Uninstallation and unsetup

---

The following explains how to perform uninstallation and unsetup for PFM - Agent for Platform.

### 2.2.1 Before uninstalling PFM - Agent for Platform

Note the following points when uninstalling PFM - Agent for Platform.

#### (1) Notes on the OS user permission required for uninstallation

- To uninstall PFM - Agent for Platform, you must do so from an account that has the Administrators permission.

#### (2) Notes on the network

- Even when you uninstall Performance Management programs, the port numbers defined in the `services` file are not deleted.

#### (3) Notes on programs

- If you uninstall PFM - Agent for Platform while another Performance Management program or service is running, or while another program (such as Windows Event Viewer) that might reference Performance Management files is running, files and folders of PFM - Agent might still remain. In this case, manually delete all files and folders under the installation folder.
- If you uninstall PFM - Agent for Platform while another Performance Management program or service is running, or while another program (such as Windows Event Viewer) that might reference Performance Management files is running, a message prompting a system restart might be displayed. In this case, follow the message and restart the system to complete the uninstallation.
- If PFM - Base and PFM - Agent are both installed on a host, you cannot uninstall PFM - Base until you uninstall PFM - Agent. In this case, first uninstall PFM - Agent and then PFM - Base. Likewise, if PFM - Manager and PFM - Agent are both installed on a host, you must first uninstall PFM - Agent and then PFM - Manager.

#### (4) Notes on services

If you uninstall only PFM - Agent, the information on the services that can be displayed using the `jpctool service list (jpcctrl list)` command is not deleted. For details about how to delete service information, see the section on service deletion in the chapter explaining installation and setup in the manual *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

**(5) Other notes**

- To uninstall Performance Management programs from a host on which PFM - Web Console is installed, close all browser windows before executing uninstallation.

**2.2.2 Unsetup procedures****(1) Deleting settings for PFM - Manager**

Log in to PFM - Manager in the PFM - Web Console, and delete the definitions related to the instance of PFM - Agent for Platform for which unsetup is to be performed.

To perform unsetup:

1. Delete the agent from PFM - Web Console.
2. Delete PFM - Manager agent information.

For example, execute a command such as the following to delete service information for PFM - Agent for Platform (Windows) on hosthost01.

```
jpctool service delete -id service-id -host host01 (jpcctrl
delete service-id host=host01)
```

For *service-id*, specify the service ID of the agent to be deleted.

3. Restart the PFM - Manager service.

For details about how to start the service, see the chapter explaining how to start and stop Performance Management in the manual *Job Management Partner 1/ Performance Management Planning and Configuration Guide*.

4. Restart PFM - Web Console.

To enable service information deletion in PFM - Web Console, restart the PFM - Manager service, and then restart PFM - Web Console.

**2.2.3 Uninstallation procedure**

To uninstall PFM - Agent for Platform:

1. Use the Administrators permission to log onto the host from which PFM - Agent for Platform is to be uninstalled.
2. Stop Performance Management programs and services on the local host.

Display service information to check whether any service is active.

If any Performance Management programs and services are active on the local host, stop them all. For details about how to display service information and to stop services, see the chapter explaining how to start and stop Performance Management in the manual *Job Management Partner 1/Performance*

*Management User's Guide.*

3. Select the Performance Management programs to be uninstalled.

From Windows **Control Panel**, choose **Add/Remove Programs**<sup>#</sup>, and select the Performance Management programs to be uninstalled.

<sup>#</sup>: This name might differ depending on the Windows version.

4. Click **Remove**, and then click the **OK** button.

The selected programs are uninstalled.

Precautions regarding uninstallation on a Windows Server 2008 environment

If user account control functionality (UAC) is enabled on the operating system, the User Account Control dialog box might be displayed during uninstallation. If this dialog box is displayed, click the **Continue** button to continue uninstallation, or click the **Cancel** button to cancel uninstallation.

---

## 2.3 Changing the system configuration of PFM - Agent for Platform

---

When the network configuration or host name of the monitoring target system changes, it is sometimes necessary to change the PFM - Agent for Platform system configuration as a result. This section explains how to change the PFM - Agent for Platform system configuration.

When changing the PFM - Agent for Platform system configuration, you also need to change the settings for PFM - Manager and PFM - Web Console. For details about how to change the Performance Management system configuration, see the chapter explaining installation and setup in the manual *Job Management Partner I/ Performance Management Planning and Configuration Guide*. Note that when a physical host name or alias name is changed, some instances of PFM - Agent will require specific addition operations, but PFM - Agent for Platform will not.

---

## 2.4 Changing the operation of PFM - Agent for Platform

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A change in the way collected operation monitoring data is used might sometimes change the PFM - Agent for Platform operation method. This section explains how to change the PFM - Agent for Platform operation method. For details about how to change the operation method for the entire Performance Management system, see the chapter explaining installation and setup in the manual *Job Management Partner 1/ Performance Management Planning and Configuration Guide*.

### 2.4.1 Changing the storage location of performance data

Performance data collected by PFM - Agent for Platform is managed in the Store database of the Agent Store service of PFM - Agent for Platform. The following explains how to change the storage location for performance data.

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

The Store database uses the following folders to manage the collected performance data. These folders can be changed by using the `jpccconf db define (jpcdbctrl config)` command. If you need the performance data collected before the Store database storage location is changed, execute the `jpccconf db define (jpcdbctrl config)` command with the `-move` option specified. For details about the `jpccconf db define (jpcdbctrl config)` command, see the manual *Job Management Partner 1/ Performance Management Reference*.

- Save destination folder
- Backup destination folder
- Partial backup destination folder<sup>#</sup>
- Export destination folder
- Import destination folder<sup>#</sup>

<sup>#</sup>: This folder can be set only when the Store version is 2.0.

The following table describes the options of the `jpccconf db define (jpcdbctrl config)` command, including the values that can be specified.

*Table 2-5: Options of the command that changes the performance data storage location*

Item	Option	Specifiable value (Store 1.0)#	Specifiable value (Store 2.0)#	Default
Save destination folder	sd	Folder name of 1-127 bytes	Folder name of 1-214 bytes	<i>installation-folder\agtt\store</i>
Backup destination folder	bd	Folder name of 1-127 bytes	Folder name of 1-211 bytes	<i>installation-folder\agtt\store\backup</i>
Partial backup destination folder	pbd	--	Folder name of 1-214 bytes	<i>installation-folder\agtt\store\partial</i>
Maximum backup generation number	bs	1 to 9	1 to 9	5
Export destination folder	dd	Folder name of 1-127 bytes	Folder name of 1-127 bytes	<i>installation-folder\agtt\store\dump</i>
Import destination folder	id	--	Folder name of 1-222 bytes	<i>installation-folder\agtt\store\import</i>

Legend:

--: This item cannot be set.

#

The folder name must be an absolute path name or a relative path name from the default Store database folder (*installation-folder\agtt\store*).

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

If the Store version is 1.0, you can directly edit the *jpcsto.ini* file to change the settings of the above items.

### **(a) Setting items in *jpcsto.ini***

The following table lists the label names for which information can be edited in the *jpcsto.ini* file, and other information such as the values that can be specified.

*Table 2-6:* Performance-data storage location settings (under [Data Section] in `jpcto.ini`)

Item	Label name	Specifiable value (Store 1.0)#1	Default
Save destination folder	Store Dir#2	Folder name of 1-127 bytes	<i>installation-folder\agtt\store</i>
Backup destination folder	Backup Dir#2	Folder name of 1-127 bytes	<i>installation-folder\agtt\store\backup</i>
Maximum backup generation number	Backup Save	1 to 9	5
Export destination folder	Dump Dir#2	Folder name of 1-127 bytes	<i>installation-folder\agtt\store\dump</i>

#1

- The folder name must be an absolute path name or a relative path name from the default Store database folder (*installation-folder\agtt\store*).
- Characters that can be specified are alphanumeric characters, symbols, and spaces, excluding the characters listed below:

`;, /, *, ?, ', ", <, >, |`

- If the specified value is invalid, the Agent Store service cannot start.

#2

You cannot specify the same folders for Store Dir, Backup Dir, and Dump Dir.

#### (b) Before editing the `jpcto.ini` file

- When changing the Store database folder, make sure that the folder after the change has already been created.
- When the Store database folder is changed, performance data collected before the change can no longer be used. If the performance data collected before the change is needed, carry the data over as follows:
  1. Use the `jpctool db backup (jpcctrl backup)` command to back up the performance data stored in the Store database.
  2. Change the Store database folder as shown in (c) *Editing the `jpcto.ini` file*.

- Use the `jpctool db restore (jpcresto)` command to restore the backed up data into the new folder.

### (c) Editing the `jpcsto.ini` file

To edit the `jpcsto.ini` file:

- Stop the PFM - Agent service.  
If PFM - Agent programs and services are active on the local host, stop them all.
- Use a text editor, for example, to open the `jpcsto.ini` file.
- Change the storage destination folder for performance data, for example.  
Modify the shaded areas below as needed.

```

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

```

*Note:*

- Do not insert a space at the beginning of the line or before or after the equal sign (=).
  - (.) in each label value indicates the default storage destination folder (*installation-folder\agtt\store*) for the Store database of the Agent Store service. To change the storage destination, specify a relative path from the storage destination folder, or specify an absolute path.
  - The `jpcsto.ini` file also describes definition information in addition to the database storage destination folder. Therefore, do not change the values other than those in the `[Data Section]` section. If you change the values other than those in the `[Data Section]` section, Performance Management might not operate normally.
- Save and close the `jpcsto.ini` file.
  - Start the Performance Management programs and services.

*Note:*

When you use this procedure to change the Store database folder, the performance data files are not deleted from the previous folder. If these files are no longer necessary, delete only the following files:

- All files with the .DB extension
- All files with the .IDX extension

## 2.4.2 Updating the Store version to 2.0

The Store database comes in two versions, 1.0 and 2.0. The difference between the two versions is the saving format. For details about Store 2.0, see the manual *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

Version 2.0 of the Store database is set up by default only in the following case: PFM - Agent for Platform 08-11 or a later version is installed as a new installation in an environment in which PFM - Base or PFM - Manager whose version is 08-11 or later is installed. In other cases, the Store version remains 1.0. If you want to use Store 2.0, you must use a setup command to update the version to 2.0.

If you have to restore Store 1.0 from Store 2.0, perform unsetup of Store 2.0.

The following table describes the installation conditions, whether Store 2.0 is available for the given conditions, and the procedure for enabling Store 2.0.

*Table 2-7: Availability of Store 2.0 and the procedure for enabling it*

Installation conditions		Whether Store 2.0 is available	Procedure for enabling Store 2.0
Version of installed PFM - Base or PFM - Manager	PFM - Agent installation type		
Earlier than 08-11	Overwrite installation	No	Update the version of PFM - Base or PFM - Manager to 08-11, and then execute the setup command.
	New installation		
08-11 or later	Overwrite installation	Available after setup	Execute the setup command.
	New installation	Yes	None

### (1) Setup of Store 2.0

The following shows the setup procedure required when the Store version is updated to 2.0.

1. Estimate the system resources and determine the retention period.

Check whether the system resources that Store 2.0 requires are suitable for the execution environment. The system resources to be considered are the following:

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

These can be adjusted by the retention period settings. When you specify the retention period, take into account the resources available in the execution environment. For details about estimating the system resources, see *A. Estimating System Requirements*.

2. Review the folder settings.

When the Store version is updated to 2.0, the Agent Store service might fail to start with the same folder settings that were available in Store 1.0. For this reason, you must review the settings of the folders used by the Agent Store service. You can use the `jpccconf db define (jpcdbctrl config)` command to view and change the settings of these folders.

The maximum length of the names of the save destination folder, backup destination folder, and other folders used by the Store database in Store 2.0 differs from the maximum length in Store 1.0. In particular, be careful when the folder settings have been changed to use a relative path name in Store 1.0. If the settings have been changed, confirm that the length of the absolute path name for the relative path name is no more than 214 bytes, which is the maximum length for folder names in Store 2.0. If the absolute path name is longer than the maximum, change the settings of each folder used by the Agent Store service before proceeding to the next step.

3. Execute the setup command.

Execute the following command to update the Store version to 2.0:

```
jpccconf db vrset -ver 2.0 -key Windows (jpcdbctrl setup -key agtt)
```

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

4. Set the retention period.

Specify the retention period that you determined in step 1. Start the Agent Store service, and then specify the retention period in PFM - Web Console.

## **(2) Unsetup of Store 2.0**

Use the `jpccconf db vrset -ver 1.0 (jpcdbctrl unsetup)` command to perform

unsetup of Store 2.0. When unsetup is performed, the entire Store database is initialized and the Store version reverts to 1.0.

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

### **(3) Precautions**

The following explains precautions regarding migration.

#### **(a) When migrating from Store version 1.0 to Store version 2.0**

When the Store database is migrated from Store version 1.0 to Store version 2.0, retention period settings for records of the PI record type are carried over. For records of the PD record type, however, the default number of retention days is set for each record regardless of the previously set value (number of retained records), and data collected before the number of retention days is deleted.

For example, in Store version 1.0, when the number of retained records is set to 1,000 for PD records for which **Collection Interval** is set to 3,600 seconds, 24 PD records are retained in a day. As a result, data for 1,000 / 24 (roughly 42) days is retained. After this Store database has been migrated to Store version 2.0, if the default number of retention days is set to 10, data from 11 or more days before is deleted and can no longer be viewed.

Before migrating to Store version 2.0, check the settings for the number of retained records for records of the PD record type. If data is set to be retained for the default number of retention days or more for Store version 2.0, use the `jpctool db dump (jpcctrl dump)` command to output the data in the database. For details about the default number of retention days in Store version 2.0, see *A.2(3)(a) Formulas for estimating disk space requirements, number of files, and number of directories*.

#### **(b) When returning from Store version 2.0 to Store version 1.0**

When unsetup is performed for Store version 2.0, data is initialized. Therefore, before changing to Store version 1.0, use the `jpctool db dump (jpcctrl dump)` command to output Store version 2.0 information.

## 2.5 Starting the command prompt

When OS user account control functionality (UAC) is enabled on a Windows Server 2008 environment, the command prompt can run under the following two permissions modes:

- Administrator permissions mode (administrator console)

This command prompt can perform all Windows operations.

- Standard permissions mode (standard console)

This command prompt can perform operations possible with user permissions.

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

Make sure that commands provided by Performance Management are executed in the administrator console.

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

*Table 2-8:* How to start the command prompt for each administrator user

Administrator group	Administrator user	Start method
Administrators	Administrator	When the command prompt is started, the administrator console is also started.
	Any user other than the above	When UAC is enabled <ul style="list-style-type: none"> <li>• When the command prompt is started, the standard console is also started.</li> <li>• When the administrator console is started, the User Account Control dialog box is displayed. Click the <b>Continue</b> button in this dialog box to start the administrator console. If the <b>Cancel</b> button is clicked, the command prompt does not start.</li> </ul> When UAC is disabled <ul style="list-style-type: none"> <li>• When the command prompt is started, the administrator console is also started.</li> </ul>

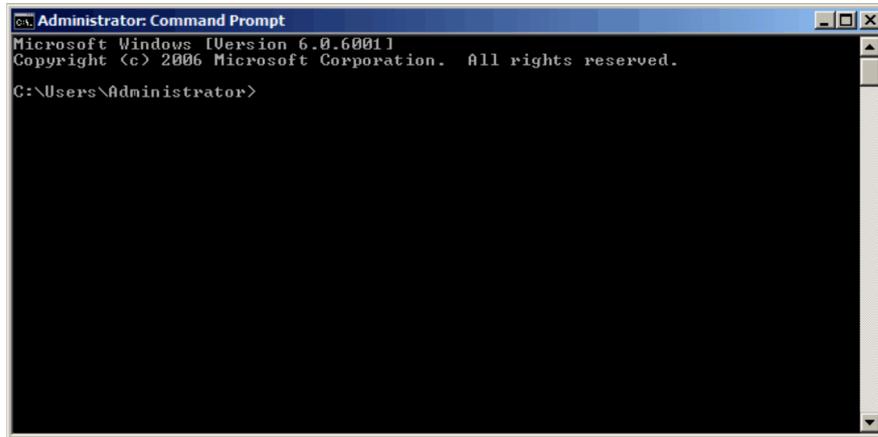
There are two kinds of administrator console: the one provided by the OS, and the one provided by PFM - Base. The following explains how to start each of them.

**(1) Starting the administrator console provided by the OS**

From the **Start** menu, choose **Programs**, and then **Accessories**, and then right-click **Command prompt**. Then choose **Run as administrator**.

Whether the started command prompt is an administrator console can be determined by whether **Administrator** is displayed in the title bar.

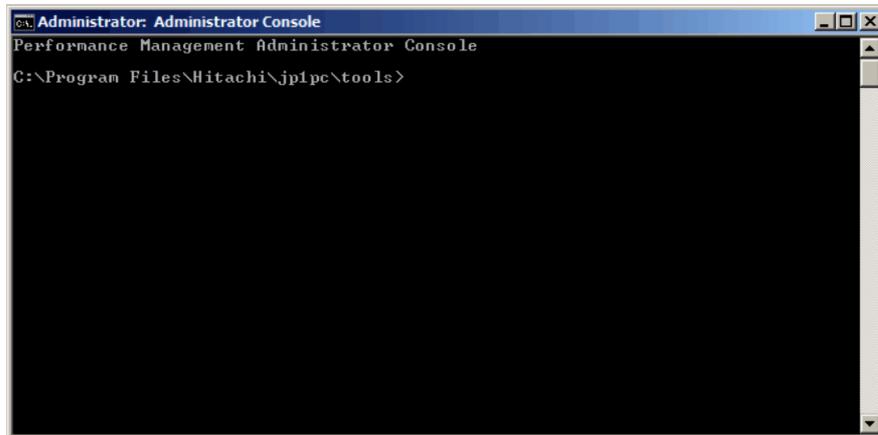
*Figure 2-5:* Screenshot of the administrator console provided by the OS



**(2) Starting the administrator console provided by PFM - Base**

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

*Figure 2-6:* Screenshot of the administrator console provided by PFM - Base



## 2.6 Backup and restoration

The following explains how to back up and restore PFM - Agent for Platform.

Back up the settings information for PFM - Agent for Platform, in case the system is corrupted due to failure. Also perform backup when changing the system, such as when setting up PFM - Agent for Platform.

For details about backup and restoration for an entire Performance Management system, see the chapter explaining backup and restoration in the manual *Job Management Partner 1/Performance Management User's Guide*.

### 2.6.1 Backup

Perform backup in any way desired, such as by copying files. When obtaining a backup, first stop all PFM - Agent for Platform services.

The following table lists the files to be backed up for PFM - Agent for Platform settings information.

*Table 2-9: Files to be backed up for PFM - Agent for Platform*

File name	Description
<i>installation-folder\agtt\agent\*.ini</i>	Settings files for the Agent Collector service
<i>installation-folder\agtt\store\*.ini</i>	Settings files for the Agent Store service
<i>installation-folder\agtt\agent\jpcapp#</i>	Application definition files
<i>installation-folder\agtt\agent\jpcuser\*.ini</i>	JPCUSER definition files

#

This file does not exist when application monitoring is not set.

*Note:*

When creating a backup for PFM - Agent for Platform, make sure that the product version number of the obtained environment is managed. For details about product version numbers, see the release notes.

### 2.6.2 Restoration

When restoring settings information for PFM - Agent for Platform, check the following prerequisites, and then copy the backed up files to their original locations. The backed up settings information files will overwrite the settings information files

on the host.

Prerequisites

- PFM - Agent for Platform is installed.
- PFM - Agent for Platform services are stopped.

*Note:*

When settings information for PFM - Agent for Platform is restored, the product version number of the backed up environment and restored environment must be identical. For details about product version numbers, see the release notes. The following gives examples for whether restoration is possible.

Cases for which restoration can be performed

Settings information backed up from PFM - Agent for Platform 09-00 is restored to PFM - Agent for Platform 09-00.

Cases for which restoration cannot be performed

- Settings information backed up from PFM - Agent for Platform 08-00 is restored to PFM - Agent for Platform 09-00.

- Settings information backed up from PFM - Agent for Platform 09-00 is restored to PFM - Agent for Platform 09-00-04.

---

## 2.7 Settings for browsing manuals in a Web browser

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The manual for Performance Management can be viewed in a Web browser by copying the manual from the CD-ROM shipped with the program product, to the host on which PFM - Web Console is installed. When running PFM - Web Console on a cluster, copy the manuals on each physical host for the active node and standby node.

### 2.7.1 Settings procedures

#### (1) When browsing the manual from the help section of PFM - Web Console

1. Follow the setup procedures for PFM - Web Console, and register PFM - Agent with PFM - Web Console (perform additional setup for PFM - Agent).
2. Create the directory into which the manual will be copied, on the host on which PFM - Web Console is installed.
  - For Windows:  
*Web-Console-installation-folder\doc\en\PFM-Agent-help-id*
  - For UNIX: */opt/jp1pcwebcon/doc/en/PFM-Agent-help-id*  
For details about the PFM - Agent help ID specified for *PFM-Agent-help-id*, see the list of IDs given in the appendix of this manual.
3. Copy the following files and directories from the manual CD-ROM to the directory created above.

For HTML manuals

For Windows: All *.htm* files and the *FIGURE* folder, in *cd-rom-drive\MAN\3020\materials-number* (such as *03004A0D*)

For UNIX: All *.htm* files and the *FIGURE* folder, in */cd-rom-mount-point/MAN/3020/materials-number* (such as *03004A0D*)

For PDF manuals

For Windows: PDF files in *cd-rom-drive\MAN\3020\materials-number* (such as *03004A0D*)

For UNIX: PDF files in */cd-rom-mount-point/MAN/3020/materials-number* (such as *03004A0D*)

When copying, make sure to copy the *index.htm* file for the HTML manual, or the PDF files for the PDF manual, is placed directly within the created directory. For details about how to copy manual files, see *readme.txt* on the manual CD-ROM.

4. Restart PFM - Web Console.

**(2) When browsing the manual from the hard disk drive on the local machine**

Perform installation using `setup.exe` on the CD-ROM, or by directly copying the `.htm` files, PDF files, and GIF files to the desired directory. For the HTML manual, use the following directory configuration:

html (.htm files and PDF files)

└─FIGURE (GIF files)

## 2.7.2 Browsing procedures

To browse the manual:

1. From the menu bar frame of the Main window for PFM - Web Console, click the **Help** menu to display a help selection window.
2. Click the manual name, or **PDF** next to the manual name.

When the manual name is clicked, the HTML manual is displayed. When **PDF** is clicked, the PDF manual is displayed.

Precautions regarding character display in Web browsers

In Windows, when the online manual is displayed from the **Start** menu, the HTML manual might be displayed in a Web browser window that is already open.

## Chapter

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# 3. User-Defined Record Collection

---

This chapter explains how to specify settings for using PFM - Agent for Platform to collect user-defined records.

- 3.1 Overview of user-defined record collection
- 3.2 Setting up user-defined record collection

### 3.1 Overview of user-defined record collection

PFM - Agent for Platform can collect performance data not provided by default and store it in a record. This record for storing performance data is called a *user-defined record*.

The following table lists the information for which user-defined records can be set, the records corresponding to type of information, and the means for setting user-defined records.

*Table 3-1:* Information that can be set for user records, the corresponding records, and how user records are set

Information supporting user-defined record collection	Records	How records are set
Performance console counter information	PD_GEND record	Collection data addition utility
	PI_GENI record	
Event log information	PD_ELOG record	
Workgroup information	PI_WGRP record	
Application operating status information	PD_APP record	PFM - Web Console
User-specific performance data	PD_UPD record	
	PD_UPDB record	
	PI_UPI record	
	PI_UPIB record	

Like other records, user-defined records specified on each host can be used for displaying reports on PFM - Web Console and issuing alarms based on monitoring.

When multiple pieces of performance data are collected into each record, a new line is added for each field in the user-defined record as each piece of performance data is collected. As a result, each user-defined record becomes a multi-line record. A multi-line record is a multi-instance record.

#### 3.1.1 Information that can be defined as user-defined records

This section explains the information that can be defined as user-defined records with the collection data addition utility.

### (1) Performance console counter information

PFM - Agent for Platform can collect performance data from fields other than those defined in the *Generic Data Detail* (PD\_GEND) and *Generic Data Interval* (PI\_GENI) records as performance console counter information.

User-defined records that can be defined as Generic Data Detail (PD\_GEND) and Generic Data Interval (PI\_GENI) records are similar to the information that is displayed in the following windows in Windows:

- **System Monitor** in the Performance window
- **Performance Logs and Alerts** in the Performance window

Because the Generic Data Detail (PD\_GEND) and Generic Data Interval (PI\_GENI) records have different record types as shown below, use them according to their intended purpose.

Table 3-2: PD\_GEND and PI\_GENI record types

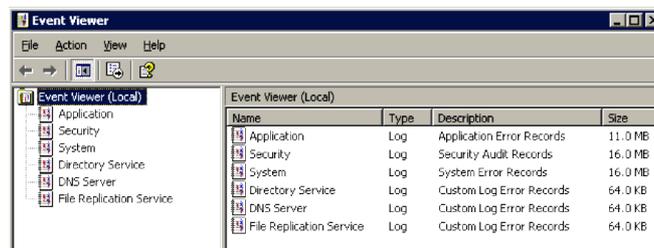
Record name	Record type	Purpose
Generic Data Detail (PD_GEND)	PD record type	Used for determining the system status at a given point in time
Generic Data Interval (PI_GENI)	PI record type	Used for analyzing the change in system status or trends over time

For details about PI and PD record types, see the chapter explaining the functions of Performance Management in the manual *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

### (2) Event log information

PFM - Agent for Platform can collect the various types of event log information in **Event Viewer** under Windows' **Administrative Tools** as user-defined records and manage them as Event Log (PD\_ELOG) records.

Figure 3-1: Event Viewer window



The various types of Windows event log information that can be defined as user-defined records can be classified into the following two types:

- Standard event logs (**Application, Security, and System**)
- Custom event logs (**Directory Service, DNS Server, and File Replication Service**, for example)

A custom event log is added when Active Directory, for example, is installed through Windows component addition.

When no user-defined record is specified for the event log information using the collection data addition utility, and if `Log=Yes` is specified for each record property in PFM - Web Console, standard event logs (**Application, Security, and System**) are unconditionally collected as `PD_ELOG` records.

Using the collection data addition utility, you can, for example, specify a custom event log to be collected and exclude the standard event logs from the collection targets.

### **(3) Workgroup information**

When multiple users or groups have activated Windows processes, these users and groups can be defined as workgroups, and PFM - Agent for Platform can collect and manage the process information related to these workgroups as the Workgroup Summary (`PI_WGRP`) record.

You can specify the following types of information for the workgroups to be defined in PFM - Agent for Platform:

- Process
- User
- Group

Based on the workgroup information defined by the collection data addition utility, the performance data in the Process Detail (`PD`) record pertaining to the applicable workgroups is summarized and stored in the Workgroup Summary (`PI_WGRP`) record.

### **(4) Information about the application operating status**

PFM - Agent for Platform can collect information about whether processes are operating under specified conditions and whether the number of processes is the expected number or less. PFM - Agent for Platform can then manage the collected information as the Application Summary (`PD_APP`) record. The processes to be monitored can be specified in PFM - Web Console.

### **(5) User-specific performance data**

PFM - Agent for Platform can collect user-specific performance data such as information that is not provided by PFM - Agent for Platform and information specific to a machine or environment. To collect user-specific performance data, you need to create scripts called *user commands*.

There are two kinds of records that store user-specific performance data for each of the

record types, PI and PD.

- User Data Detail (PD\_UPD)
- User Data Detail - Extended (PD\_UPDE)
- User Data Interval (PI\_UPI)
- User Data Interval - Extended (PI\_UPIB)

## 3.2 Setting up user-defined record collection

This section describes how to collect user-defined records.

### 3.2.1 Starting and stopping the collection data addition utility

The collection data addition utility is used to set the following types of information as user-defined records: performance console counter information, event log information, and workgroup information.

#### (1) Starting the collection data addition utility

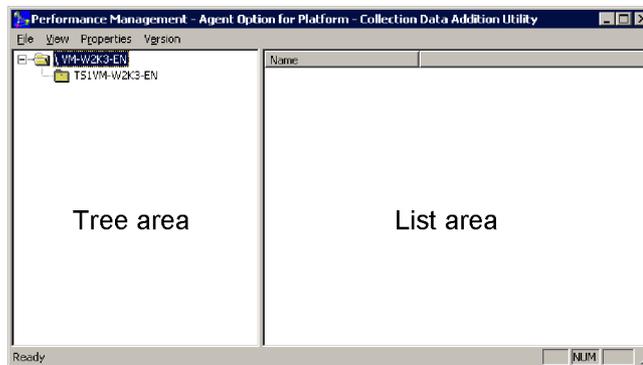
To start the collection data addition utility:

1. Log on to a Windows host on which PFM - Agent for Platform 08-00 or a later version is installed.

Before you log on, make sure that you are a member of the Administrators group.

2. From the Windows **Start** menu, choose **Programs, Performance Management, Agent Option for Platform,** and then **Collection Data Addition Utility.**

*Figure 3-2: Collection data addition utility window*



Tree area: Shows the Agent Store of the local host.

List area: Shows the Agent Collector name of the selected Agent Store.  
Service status is displayed with an icon.

-  : Service is active.
-  : Service is stopped.

*Note:*

- You can start only one instance of the collection data addition utility.
- To view the latest Agent status, choose **View** and then **Refresh**.
- You cannot concurrently open two or more windows for setting records (for example, the windows for setting the PD\_ELOG and the PI\_WGRP records).
- Starting the collection data addition utility on a Windows Server 2008 environment

If the operating system's user account control functionality (UAC) is enabled, the user account control dialog box might be displayed when the collection data addition utility is started. If this dialog box is displayed, click the **OK** button to continue processing for the collection data addition utility. The **Cancel** button can also be clicked to stop the collection data addition utility.

## **(2) Stopping the collection data addition utility**

To stop the collection data addition utility:

1. In the collection data addition utility window, choose **File** and then **Exit**.

## **(3) Notes on specifying user-defined records**

- Start the collection data addition utility from an account that has the Administrators permission.
- Only the user-defined records that can be collected on a local host can be specified as user-defined records by the collection data addition utility. If multiple hosts on which PFM - Agent for Platform is installed are present within the system, start the collection data addition utility on each host and specify user-defined records.
- If an error message with a file name or directory name is displayed during a window operation, check whether the file exists or whether you have the proper access permission.
- If an error message is displayed during a window operation and the cause cannot be determined, collect maintenance data and contact the system administrator.
- If an error message is displayed during a window operation and the cause cannot be determined, collect maintenance data and contact the system administrator. For details about how to collect maintenance data, see the chapter explaining troubleshooting in the manual *Job Management Partner 1/Performance Management User's Guide*.
- To collect log data, specify Log=Yes for the property of each record in PFM - Web Console.

- You cannot start the collection data addition utility from PFM - Web Console.
- To start the collection data addition utility on a client machine, use Remote Desktop Connection, which is an existing OS function.
- Do not forcibly terminate the collection data addition utility from Windows Task Manager. Doing so might corrupt the settings.
- If PFM - Agent for Platform 08-00 or a later version is installed on a host on which PFM - View 07-00 is installed, you can start the collection data addition utility either from the Windows **Start** menu or from PFM - View 07-00. However, do not use both ways to start two instances of the utility.
- To uninstall PFM - Agent for Platform, first close the collection data addition utility window, and then execute uninstallation.

### 3.2.2 Settings for collecting performance console counter information

This section explains how to specify user-defined records for collecting performance console counter information, and how to check and delete these settings.

#### (1) *Specifying user-defined records*

To specify user-defined records for collecting performance console counter information:

1. From the Windows **Start** menu, start the collection data addition utility.

*Note:* displaying product names

The service name displayed in the main window can be replaced with the product name by selecting **Product Name Display** from the **View** menu of the collection data addition utility.

- Normal display

Agent Store: TS1 *host-name*

Agent Collector: TA1 *host-name*

- Product name display

Agent Store: *host-name*<Windows>(Store)

Agent Collector: *host-name*<Windows>

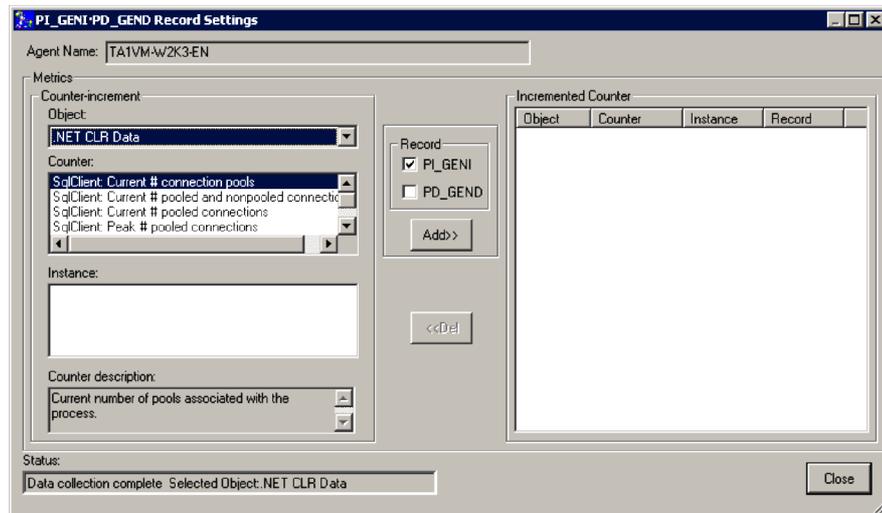
For details about the product name display functionality, see the chapter explaining the functionality in the manual *Job Management Partner 1/ Performance Management Planning and Configuration Guide*.

2. From the tree area, select the Agent Store for the currently logged-in host, and in the list area, right-click the Agent Collector icon and choose **PI\_GENI/**

### PD\_GEND Records Add/Confirm/Delete.

The following shows the PI\_GENI-PD\_GEND Record Settings dialog box.

Figure 3-3: PI\_GENI-PD\_GEND Record Settings dialog box



3. From **Object**, select the data object to be collected.

When a data object is selected, the data counter that can be set for the selected data object is displayed in **Counter**. Data instances (multi-instance objects) that can be set are displayed in **Instance**.

If the selected object is a single-instance object, there is no data instance that can be set, and thus nothing is displayed in **Instance**.

The data objects selected here are stored in the Object Name (`OBJECT_NAME`) field of a user-defined record.

4. From **Counter description**, select the data counter to be collected.

Multiple data counters can be selected and deselected by clicking with the **Ctrl** key pressed. When a data counter is selected, an explanation for the selected data counter is displayed in **Counter description**.

The data counter selected here is stored in the Counter Name (`COUNTER_NAME`) field of the user-defined record.

Note that **Counter description** displays only data counters that can be collected by the collection data addition utility. The data counters that can be collected by the collection data addition utility correspond to the following performance counters. For details about the relationship between data counters and performance counters, contact Microsoft Corporation.

### 3. User-Defined Record Collection

- 100nSec Multi Timer
- 100nSec Multi Timer Inv
- 100nSec Timer
- 100nSec Timer Inv
- Average Bulk
- Average Timer
- Counter 100nSec Queuelen
- Counter Bulk Count
- Counter Counter
- Counter Delta
- Counter Large Delta
- Counter Large Queuelen
- Counter Large Rawcount
- Counter Large Rawcount Hex
- Counter Multi Timer
- Counter Multi Timer Inv
- Counter Object Time Queuelen
- Counter Queuelen
- Counter Rawcount
- Counter Rawcount Hex
- Counter Text
- Counter Timer
- Counter Timer Inv
- Elapsed Time
- Large Raw Fraction
- Object Time Timer
- Precision 100nSec Timer
- Precision Object Timer
- Precision System Timer
- Raw Fraction

- Sample Counter
  - Sample Fraction
5. From **Instance**, select the data instance to be collected.  
 Multiple items displayed in **Instance** can be selected and deselected by clicking with the **Ctrl** key pressed. The data instance selected here is stored in the Instance (**INSTANCE**) field of the user-defined record.  
 If no data instance is displayed, it means that there is no data instance that can be set. Proceed to step 6.
  6. Select **PD\_GEND** or **PI\_GENI** in **Record**.  
 Select **PD\_GEND** to collect performance values for PD\_GEND records.  
 Select **PI\_GENI** to collect performance values for PI\_GENI records.
  7. Click the **Add** button.  
 The objects, counters, and instance information displayed in **Counter-increment** is reflected in **Incremented Counter**. The performance data reflected in **Incremented Counter** is set in the user record as a collection target.
  8. To add more performance data to be collected to the user-defined record, repeat steps 3 through 7.
  9. When finished, click the **Close** button.  
 The PI\_GENI-PD\_GEND Record Settings dialog box is closed.

*Note:*

- There are no limits to the number of objects, counters, and instances that can be added to the performance data to be collected. However, if too large a number is set, data collection by PFM - Agent for Platform might increase the system load or use a large amount of disk space. Therefore, a total of approximately 100 should normally be used as the upper limit.
- When a user-defined record is being specified in the Windows Server 2003 (x64) environment, objects that do not support WOW64 are not displayed in the Add Record window of the collection data addition utility.
- For details about the PD\_GEND and PI\_GENI records, see 5. *Records*.

For details about how to specify whether to store the user-defined records set here in a database, see the chapter explaining the management of operation monitoring data in the manual *Job Management Partner 1/Performance Management User's Guide*.

### **(2) Checking the user-defined record settings**

To check the setting content of the user-defined record for collecting the performance console counter information:

1. From the Windows **Start** menu, start the collection data addition utility.
2. From the tree area, select the Agent Store for the currently logged-in host, and in the list area, right-click the Agent Collector icon and choose **PI\_GENI/PD\_GEND Records Add/Confirm/Delete**.

The PI\_GENI-PD\_GEND Record Settings dialog box is displayed.

3. Check the performance console counter information set to be collected.  
Check the performance console counter information displayed in **Counter-increment**.

4. When finished, click the **Close** button.

The PI\_GENI-PD\_GEND Record Settings dialog box is closed.

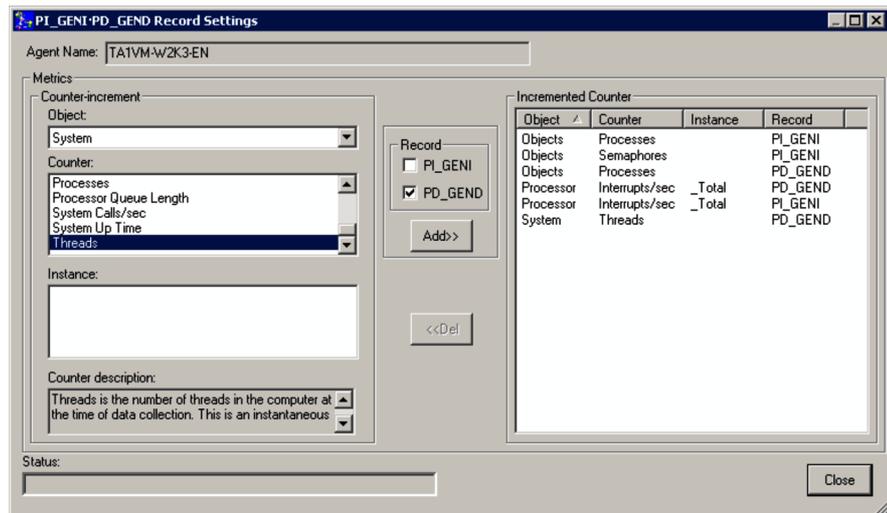
### **(3) Deleting the user-defined record settings**

To delete the settings of the user-defined record for collecting performance console counter information:

1. From the Windows **Start** menu, start the collection data addition utility.
2. From the tree area, select the Agent Store for the currently logged-in host, and in the list area, right-click the Agent Collector icon and choose **PI\_GENI/PD\_GEND Records Add/Confirm/Delete**.

The PI\_GENI-PD\_GEND Record Settings dialog box is displayed.

Figure 3-4: PI\_GENI-PD\_GEND Record Settings dialog box



3. From **Incremented Counter**, select the performance data to no longer be collected, and click the **Del** button.

The settings are deleted from **Incremented Counter**, and excluded from collection.

Note that multiple items displayed in **Incremented Counter** can be selected and deselected by clicking with the **Ctrl** key pressed.

4. When finished, click the **Close** button.

The PI\_GENI-PD\_GEND Record Settings dialog box is closed.

### 3.2.3 Settings for collecting event log information

This section explains how to specify user-defined records for collecting event log information, and how to check and delete these settings.

#### (1) Specifying user-defined records

To specify the event log information as the collection target:

1. From the Windows **Start** menu, start the collection data addition utility.
2. From the tree area, select the Agent Store for the currently logged-in host, and in the list area, right-click the Agent Collector icon and choose **PD\_ELOG Records Add/Confirm/Delete**.

The PD\_ELOG Record Settings dialog box is displayed.

Figure 3-5: PD\_ELOG Record Settings dialog box



By default (without any user settings), the standard event logs are displayed in **Event logs targeted for collection**.

Additionally, a list of event logs that can be collected is displayed in **Event logs out of collection target**. If an event log that can be collected has been added or deleted, a confirmation message is displayed.

3. From **Event logs out of collection target**, select the event logs to be collected, and then click the ==> button.

A message for confirming the collection target setting is displayed.

4. Click the **OK** button.

The selected event logs are registered as collection targets and are displayed in **Event logs targeted for collection**.

5. When finished, click the **Exit** button.

The PD\_ELOG Record Settings dialog box closes.

*Note:*

For details about the PD\_ELOG record, see 5. *Records*.

## **(2) Checking the user-defined record settings**

To check event log information:

1. From the Windows **Start** menu, start the collection data addition utility.
2. From the tree area, select the Agent Store for the currently logged-in host, and in the list area, right-click the Agent Collector icon, and then choose **PD\_ELOG**

**Records Add/Confirm/Delete.**

The PD\_ELOG Record Settings dialog box is displayed.

3. Check the event logs that were set as collection targets.  
Check the event log information displayed in **Event logs targeted for collection**.
4. When finished, click the **Exit** button.

The PD\_ELOG Record Settings dialog box closes.

**(3) Deleting the user-defined record settings**

To remove the event log information from the collection target:

1. From the Windows **Start** menu, start the collection data addition utility.
2. From the tree area, select the Agent Store for the currently logged-in host, and in the list area, right-click the Agent Collector icon, and then choose **PD\_ELOG Records Add/Confirm/Delete**.

The PD\_ELOG Record Settings dialog box is displayed.

3. From **Event logs targeted for collection**, select the event logs to be removed from the collection target, and then click the  button.

A message for confirming the removal of the event logs from the collection target is displayed.

4. Click the **OK** button.

The selected event logs are removed from the collection target and are displayed in **Event logs out of collection target**.

5. When finished, click the **Exit** button.

The PD\_ELOG Record Settings dialog box closes.

**3.2.4 Settings for collecting workgroup information**

This section explains how to specify user-defined records for collecting workgroup information, and how to check and delete these settings.

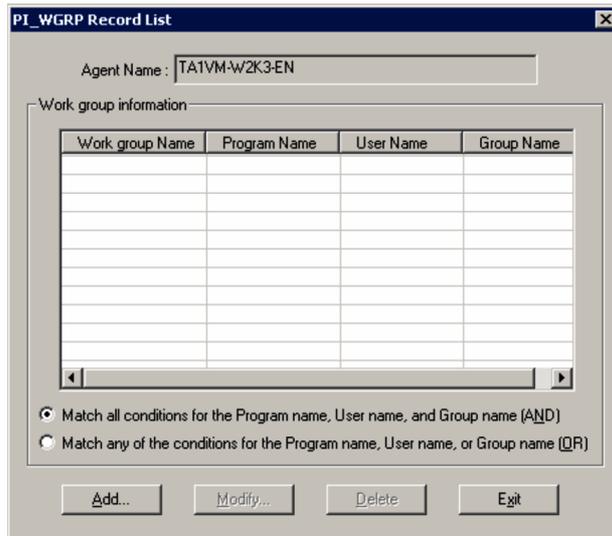
**(1) Specifying user-defined record settings**

To specify user-defined records for collecting workgroup information:

1. From the Windows **Start** menu, start the collection data addition utility.
2. From the tree area, select the Agent Store for the currently logged-in host, and in the list area, right-click the Agent Collector icon, and then choose **PI\_WGRP Records Add/Confirm/Delete**.

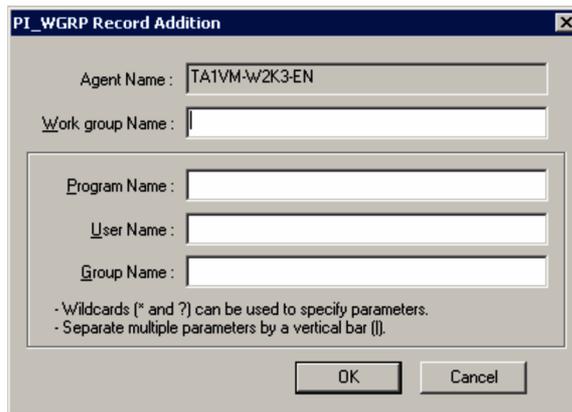
The PI\_WGRP Record List dialog box is displayed.

Figure 3-6: PI\_WGRP Record List dialog box



3. In the PI\_WGRP Record List dialog box, click the **Add** button.  
The PI\_WGRP Record Addition dialog box is displayed.

Figure 3-7: PI\_WGRP Record Addition dialog box



4. Enter the parameters.  
Enter values in **Work group Name**, **Program Name**, **User Name**, and **Group Name**.  
Input rules common to all parameters
  - The parameters are not case-sensitive. Spaces are treated as characters.

- A character string containing any of the following characters cannot be specified for any of the parameters:  
 \, /, :, \*, ?, ", <, >, |
- A wildcard character (\* or ?) can be specified for the **Program Name**, **User Name**, and **Group Name** parameters.
- When specifying multiple values in the **Program Name**, **User Name**, or **Group Name** parameter, use | to delimit the names.

The table below shows the details of the parameters.

Table 3-3: Parameter setting details

Parameter	Information to be specified	Field in which information is saved	Input rules
<b>Work group Name</b>	Specifies the name of the workgroup from which information is to be collected.	Workgroup (WORKGROUP_NAME)	<ul style="list-style-type: none"> <li>• The only characters that can be used are alphanumeric characters, hyphens (-), and underscores (_).</li> <li>• A maximum of 35 bytes</li> <li>• An existing workgroup name cannot be specified.</li> <li>• Other cannot be specified.</li> </ul>
<b>Program Name</b>	Specifies the name of the program to be executed.	Programs (PROGRAMS) <sup>#1</sup>	<ul style="list-style-type: none"> <li>• A maximum of 1,023 bytes</li> <li>• Specify the value stored in the Program (INSTANCE) field of the Process Detail (PD) record.<sup>#2</sup></li> <li>• If no value is input, no search using this item is performed.</li> </ul>
<b>User Name</b>	Specifies the name of the user who executes the program specified in <b>Program Name</b> .	Users (USERS) <sup>#1</sup>	<ul style="list-style-type: none"> <li>• A maximum of 1,023 bytes</li> <li>• Specify the value stored in the User (USER_NAME) field of the Process Detail (PD) record.<sup>#3</sup></li> <li>• If no value is input, no search using this item is performed.</li> </ul>
<b>Group Name</b>	Specifies the name of the group to which the user who executes the program specified in <b>Program Name</b> belongs.	Groups (GROUPS) <sup>#1</sup>	<ul style="list-style-type: none"> <li>• A maximum of 1,023 bytes</li> <li>• Specify the value stored in the Group (GROUP_NAME) field of the Process Detail (PD) record.<sup>#4</sup></li> </ul>

#1

The maximum size of information that is saved in each field of the Process Detail (PD) record is 35 bytes. When the information size exceeds 35 bytes,

the last character saved becomes >.

#2

Records that have `_Total` for the Program (`INSTANCE`) field and 0 for the PID (`ID_PROCESS`) field of the Process Detail (`PD`) record indicate data expressing the total or average, and thus are not collected.

#3

If no user name is found that corresponds to the process security ID, `NONE_MAPPED` is stored; if the executing user name cannot be acquired from the process ID, `Unknown` is stored.

#4

A group name is a name that is pre-defined by the domain name or local system. If no group name is found that corresponds to the process security ID, `NONE_MAPPED` is stored; if the executing group name cannot be acquired from the process ID, `Unknown` is stored.

5. Click the **OK** button to register the workgroup information.

If there is a parameter input error, an error message is displayed. Refer to the error details displayed and correct the input.

6. To add more workgroup information to the user-defined record, repeat steps 3 through 5.

7. For each item, select **Match all conditions for the Program name, User name, and Group name (AND)** or **Match any of the conditions for the Program name, User name, or Group name (OR)**.

*Note:*

The contents set for **Match all conditions for the Program name, User name, and Group name (AND)** or **Match any of the conditions for the Program name, User name, or Group name (OR)** are applied to all workgroups displayed in **Work group information**. You cannot specify different settings for individual workgroups.

8. Click the **Exit** button.

The user-defined record settings are saved and the `PI_WGRP` Record List dialog box closes.

*Note:*

- For details about the Process Detail (PD) record and Workgroup Summary (PI\_WGRP) record, see 5. *Records*.
- For details about Windows user names and group names, see Help in Windows.

## **(2) Checking the user-defined record settings**

This subsection shows how to check the setting content of the user-defined record for collecting workgroup information.

It shows how to use the PI\_WGRP Record List dialog box to check the performance data settings stored in the user-defined record.

To check the user-defined record settings:

1. From the Windows **Start** menu, start the collection data addition utility.
2. From the tree area, select the Agent Store for the currently logged-in host, and in the list area, right-click the Agent Collector icon, and then choose **PI\_WGRP Records Add/Confirm/Delete**.

The PI\_WGRP Record List dialog box is displayed.

3. Check the workgroup information set to be collected.

Check the workgroup information displayed in **Work group information**.

4. When finished, click the **Exit** button.

The user-defined record settings are saved and the PI\_WGRP Record List dialog box closes.

## **(3) Modifying the user-defined record settings**

To change the setting content of the user-defined record for collecting workgroup information:

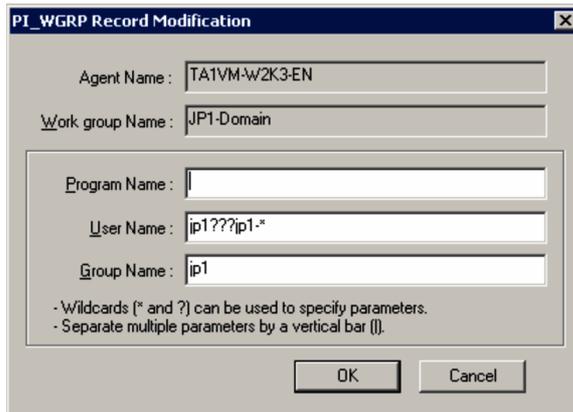
1. From the Windows **Start** menu, start the collection data addition utility.
2. From the tree area, select the Agent Store for the currently logged-in host, and in the list area, right-click the Agent Collector icon, and then choose **PI\_WGRP Records Add/Confirm/Delete**.

The PI\_WGRP Record List dialog box is displayed.

3. From **Work group information** in the PI\_WGRP Record List dialog box, select the workgroup information to be checked, and click the **Modify** button.

The PI\_WGRP Record Modification dialog box is displayed.

Figure 3-8: PI\_WGRP Record Modification dialog box



4. Edit the values of the parameters to be modified.  
For details and notes on setting parameters, see (1) *Specifying user-defined record settings*.  
Note that **Work group Name** cannot be modified.
5. Click the **OK** button.  
If the modified parameter is invalid, an error message is displayed. Refer to the error details displayed and correct the input.
6. To modify the settings for other workgroup information, repeat steps 3 through 5.
7. Change **Match all conditions for the Program name, User name, and Group name (AND)** or **Match any of the conditions for the Program name, User name, or Group name (OR)** as necessary.  
*Note:*  
The contents set for **Match all conditions for the Program name, User name, and Group name (AND)** or **Match any of the conditions for the Program name, User name, or Group name (OR)** are applied to all workgroups displayed in **Work group information**. You cannot specify different settings for individual workgroups.
8. Click the **Exit** button.  
The user-defined record settings are saved and the PI\_WGRP Record List dialog box closes.

**(4) Deleting the user-defined record settings**

To delete the settings of the user-defined record for collecting workgroup information:

1. From the Windows **Start** menu, start the collection data addition utility.
2. From the tree area, select the Agent Store for the currently logged-in host, and in the list area, right-click the Agent Collector icon, and then choose **PI\_WGRP Records Add/Confirm/Delete**.

The PI\_WGRP Record List dialog box is displayed.

3. From **Work group information** in the PI\_WGRP Record List dialog box, select the workgroup information to be deleted, and click the **Delete** button.

A deletion confirmation message is displayed.

4. Click the **OK** button.

The workgroup information is deleted.

5. To delete other workgroup information, repeat steps 3 and 4.

6. When finished, click the **Exit** button.

The user-defined record settings are saved and the PI\_WGRP Record List dialog box closes.

### **(5) Examples of alarm operation**

The following gives examples of alarm operation using functionality to collect workgroup information. Here, the contents are set to issue an alarm when multiple running processes with the same process name are monitored, and the number of process startup statuses falls below  $n$ .

The following shows settings for user records and alarm conditions.

User record settings

Workgroup name: *workgroup-name*

Program name: *name-of-program-to-be-monitored* (specify the value stored in the Program (INSTANCE) field of the Process Detail (PD) record)

Conditions set for the alarm

Define an alarm that reports an abnormality for the following conditions, for the Workgroup Summary (PI\_WGRP) Record:

*workgroup=workgroup-name*

AND Process Count  $\leq n$

*Note:*

$n$  indicates the number of processes.

### 3.2.5 Settings for collecting application operation and non-operation information

The following explains how to set, confirm, change, and delete user records for collecting information about the application operating status, and provides an example of alarm operation.

#### (1) *Specifying the user-defined record settings*

The following explains how to specify the user-defined record settings for collecting information about the application operating status.

To perform setup, first create an instance, and then set the instance properties (such as the monitored application name and threshold).

To create an instance:

1. From the monitoring console browser, log in to PFM - Web Console.  
The Main window appears.
2. In the navigation frame of the Main window, click the **Services** tab.  
The **Services** page appears.
3. From the navigation frame, expand the contents of the `Machines` folder.  
A folder that has the name of the host on which the Performance Management service is installed appears. Expand this folder to display the services installed on the host.  
The name of each service is displayed by service ID. For details about service IDs, see *B. List of Identifiers*, and the section that explains the service naming conventions in the appendix of the manual *Job Management Partner 1/ Performance Management Planning and Configuration Guide*.  
The format of the service ID differs depending on whether the product name display functionality is enabled. For details about the product name display functionality, see the chapter explaining Performance Management functionality in the manual *Job Management Partner 1/ Performance Management Planning and Configuration Guide*.
4. Expand the contents of the monitoring agent host folder, and select the Agent Collector service.  
Select *host-name*<**Windows**> (Agent Collector service). A check mark is displayed next to the Agent Collector service.
5. Select the **Properties** method in the method frame.  
The **Properties** page appears.
6. Select the **ADDITION OR DELETION A SETTING** tree.

7. Enter an instance name for **ADD AN APPLICATION MONITORING SETTING** in the information frame, and click the **OK** button.

An instance name tree is generated in the **Application monitoring settings** tree of the Properties window.

*Note:*

- The instance name entered for **ADD AN APPLICATION MONITORING SETTING** can be specified by the user. The instance name specified here is stored in the **Application Name** field of the PD\_APP record, and is used as an ID to identify the application.
- In **ADD AN APPLICATION MONITORING SETTING**, you can specify a character string of 1-63 bytes. The character string can consist of alphanumeric characters and symbols except the following characters:  
Tab (\t) \ : ; , \* ? " ' < > |
- You can set a maximum of 64 instances.

To set instance properties:

1. After finishing the above step for setting the instance properties, display the Properties window again and select the instance name tree generated in the **Application monitoring settings** tree.

The property information entry window appears at the bottom of the information frame.

2. Set properties.

Set the process type, process name, and minimum and maximum values for the process count. You can set information for multiple processes. The following table lists the properties you can set.

Table 3-4: Monitoring field properties

Item	Parameter name	Explanation	Corresponding field in the PD_APP record
Process type	ProcessXX Kind	Select either <b>Command Line</b> or <b>Service Name</b> . Note that evaluation is not performed when <b>None</b> is selected. <ul style="list-style-type: none"> <li>When <b>Command Line</b> is selected, the value of the Program field in the PD record is used for evaluation.</li> <li>When <b>Service Name</b> is selected, the Service Name field of the PD_SVC record is used for evaluation.</li> </ul>	ProcessXX Kind
Process name	ProcessXX Name	Specify a process name of no more than 127 bytes.	ProcessXX Name
Minimum and maximum thresholds for the number of processes	ProcessXX Range	Specify the minimum and maximum thresholds for the number of processes in the format <i>m-n</i> (for example, 1-2). Only one value can be specified without a hyphen to set the minimum value and maximum value to the same value. For example, when 10 is specified, 10-10 is set. You can specify values in the range from 0 to 65535.	ProcessXX Range

Legend:

*XX*: A two-digit numeric value in the range from 01 to 15

*Note:*

- The value specified for the `ProcessXXName` property is used to evaluate application operation and non-operation. Note that when the `ProcessXXName` field in the `PD_APP` record is displayed in a report in PFM - Web Console, only the first 31 bytes are displayed.
- If there are multiple processes for which the first 31 bytes of each name are the same, set up an instance for each process so that the process can be monitored, and set the evaluation results (the value of the `ProcessXXName` field for the `PD_APP` record) to be reported by alarm. Note that because the value of the `ProcessXXName` field in the `PD_APP` records is the same for all instances, alarms will not be reported properly. Accordingly, instead of using the `ProcessXXName` field in the `PD_APP` records, use the value of the `ProcessXXStatus` field for setting alarm notification. For example settings, see (4)(d) *Monitoring whether a given process is running when there are multiple processes for which the first 31 bytes of the names are the same.*
- Alphanumeric characters and symbols can be specified for the `ProcessXXName` property, except for the following:  
Tab (\t) \ : ; , " ' < > |
- Wildcard characters \* and ? can also be specified for the `ProcessXXName` property. \* represents at least one character, while ? represents one character.
- Do not specify a Windows program extension (such as .exe) for the `ProcessXXName` property.

3. Click the **OK** button.

The specified settings are applied.

## **(2) Checking or changing user record settings**

To check or change the user record settings for collecting information about application operation and non-operation:

1. From the monitoring console browser, log in to PFM - Web Console.

The Main window appears.

2. In the navigation frame of the Main window, click the **Services** tab.

The **Services** page appears.

3. From the navigation frame, expand the contents of the `Machines` folder.

A folder that has the name of the host on which the Performance Management service is installed appears. Expand this folder to display the services installed on

the host.

The name of each service is displayed by service ID. For details about service IDs, see *B. List of Identifiers*, and in the appendix of the manual *Job Management Partner 1/Performance Management Planning and Configuration Guide*, the section that explains the service naming conventions.

The format of the service ID differs depending on whether the product name display functionality is enabled. For details about the product name display functionality, see the chapter explaining Performance Management functionality in the manual *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

4. Expand the contents of the monitoring agent host folder, and select the Agent Collector service.

Select *host-name*<**Windows**> (Agent Collector service). A check mark is displayed next to the Agent Collector service.

5. Select the **Properties** method in the method frame.

The **Properties** page appears.

6. Expand the **Application monitoring settings** tree, and select the tree for the instance name to be checked.

The properties are displayed.

7. Check the property settings, and click the **OK** button.

### **(3) Deleting the user-defined record settings**

To delete the user-defined record settings for collecting information about the application operating status:

1. From the monitoring console browser, log in to PFM - Web Console.

The Main window appears.

2. In the navigation frame of the Main window, click the **Services** tab.

The **Services** page appears.

3. From the navigation frame, expand the contents of the `Machines` folder.

A folder that has the name of the host on which the Performance Management service is installed appears. Expand this folder to display the services installed on the host.

The name of each service is displayed by service ID. For details about service IDs, see *B. List of Identifiers*, and in the appendix of the manual *Job Management Partner 1/Performance Management Planning and Configuration Guide*, the section that explains the service naming conventions.

The format of the service ID differs depending on whether the product name display functionality is enabled. For details about the product name display functionality, see the chapter explaining Performance Management functionality in the manual *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

- Expand the contents of the monitoring agent host folder, and select the Agent Collector service.

Select *host-name*<**Windows**> (Agent Collector service). A check mark is displayed next to the Agent Collector service.

- Select the **Properties** method in the method frame.

The **Properties** page appears.

- Select the **ADDITION OR DELETION A SETTING** tree.

- Select the name of the instance to be deleted from **DELETE AN APPLICATION MONITORING SETTING** in the information frame, and click the **OK** button.

The settings are deleted.

#### (4) Example of using an alarm

This subsection provides an example of using an alarm with the function that collects information about the application operating status.

##### (a) Monitoring the startup status of a specific process

The following explains settings for monitoring whether a specific process is running, from several monitoring targets.

For environments on which only one of the following processes is normally running, set an abnormal alarm to report when multiple processes (two or more) are running, or have stopped.

Table 3-5: Example of specific process start

Program name	Process name
GyoumuProcess.exe	GyoumuProcess

To monitor the startup status of a specific process:

- Set the instance name for **ADD AN APPLICATION MONITORING SETTING** in the **ADDITION OR DELETION A SETTING** tree as follows:  
GyoumuProcess Monitor
- Set the **GyoumuProcess Monitor** property generated in the **Application monitoring settings** tree as follows:

### 3. User-Defined Record Collection

Process01 Kind: Select **Command Line**.  
Process01 Name: Enter GyoumuProcess (do not specify the .exe extension).  
Process01 Range: Enter 1-1.

As a result of the above settings, when the process is running, the values of the Process01 Count, Process01 Status, and Application Status fields in the PD\_APP record are displayed as follows in the report.

Table 3-6: Results for the values of each field in the PD\_APP record

Field name	Value
Process01 Count	1 <sup>#1</sup>
Process01 Status	NORMAL <sup>#2</sup>
Application Status	NORMAL <sup>#2</sup>

#1

This indicates the number of corresponding processes running.

#2

This indicates that there is no issue.

#### 3. Perform alarm settings as follows.

Record: Select **Application Summary (PD\_APP)**.  
Monitored field: Select **Application Name**.  
Condition: Select =.  
Abnormal value: Enter GyoumuProcess Monitor.  
Warning value: Enter GyoumuProcess Monitor.

Perform the above settings and then click the **Add** button, and then perform these additional settings:

Record: Select **Application Summary (PD\_APP)**.  
Monitored field: Select **Application Status**.  
Condition: Select <>.  
Abnormal value: Enter NORMAL.  
Warning value: Enter NORMAL.

Conditional expressions in an alarm are evaluated using AND. To monitor only the results for **Application Status** without specifying an instance, specify only **Application Status**, <>, and NORMAL.

**(b) Monitoring the startup status of a specific service**

The following explains settings for monitoring whether a specific service application is running, from several monitoring targets.

The following sets an abnormal alarm to be reported when the following service application stops.

*Table 3-7: Example of specific service startup*

Display name	Service name
Windows Audio	AudioSrv

To monitor the startup status of a specific service:

1. Set the instance name for **ADD AN APPLICATION MONITORING SETTING** in the **ADDITION OR DELETION A SETTING** tree as follows:

AudioSrv Monitor

2. Set the **AudioSrv Monitor** property generated in the **Application monitoring settings** tree as follows:

Process01 Kind: Select **Service Name**.

Process01 Name: Enter AudioSrv (the service name).

Process01 Range: Enter 1-1.

As a result of the above settings, when the service is running, the values of the Process01 Count, Process01 Status, and Application Status fields in the PD\_APP record are displayed as follows in the report.

*Table 3-8: Results for the values of each field in the PD\_APP record*

Field name	Value
Process01 Count	1 <sup>#1</sup>
Process01 Status	NORMAL <sup>#2</sup>
Application Status	NORMAL <sup>#2</sup>

#1

This indicates the number of corresponding processes running.

#2

This indicates that there is no issue.

3. Specify alarm settings as follows.

Record: Select **Application Summary (PD\_APP)**.  
 Monitored field: Select **Application Name**.  
 Condition: Select =.  
 Abnormal value: Enter AudioSrv Monitor (the instance name set in step 1).  
 Warning value: Enter AudioSrv Monitor (the instance name set in step 1).

After specifying the above settings and clicking the **Add** button, specify these additional settings:

Record: Select **Application Summary (PD\_APP)**.  
 Monitored field: Select **Application Status**.  
 Condition: Select <>.  
 Abnormal value: Enter NORMAL.  
 Warning value: Enter NORMAL.

Conditional expressions in an alarm are evaluated using AND. To monitor only the results for **Application Status** without specifying an instance, specify only **Application Status**, <>, and NORMAL.

**(c) Monitoring whether multiple processes are all running**

The following explains settings for monitoring whether monitored processes are all running.

The following procedure sets an abnormal alarm to be reported when at least one of the following five processes has stopped, but not to be reported when they are all running.

*Table 3-9: Example of startup for five processes*

Program name	Process name
GyoumuProcess1.exe	GyoumuProcess1
GyoumuProcess2.exe	GyoumuProcess2
GyoumuProcess3.exe	GyoumuProcess3
GyoumuProcess4.exe	GyoumuProcess4
GyoumuProcess5.exe	GyoumuProcess5

To monitor whether multiple processes are all running:

1. Set the instance name for **ADD AN APPLICATION MONITORING SETTING** in the **ADDITION OR DELETION A SETTING** tree as follows:

GyoumuProcess Monitor

2. Set the **GyoumuProcess Monitor** property generated in the **Application monitoring settings** tree as follows:

Process01 Kind: Select **Command Line**.  
 Process01 Name: Enter GyoumuProcess\*.<sup>#</sup>  
 Process01 Range: Enter 1-5.

#

The wildcard character \* is used for the process number. The wildcard character ? can also be used, in place of a single character.

As a result of the above settings, when the five processes are running, the values of the Process01 Count, Process01 Status, and Application Status fields in the PD\_APP record are displayed as follows in the report.

*Table 3-10:* Results for the values of each field in the PD\_APP record

Field name	Value
<b>Process01 Count</b>	5 <sup>#1</sup>
<b>Process01 Status</b>	NORMAL <sup>#2</sup>
<b>Application Status</b>	NORMAL <sup>#2</sup>

#1

This indicates the number of corresponding processes running.

#2

This indicates that there is no issue.

3. Specify alarm settings as follows.

Record: Select **Application Summary (PD\_APP)**.  
 Monitored field: Select **Process01 Count**.  
 Condition: Select <.  
 Abnormal value: Enter 5.  
 Warning value: Enter 5.

If all five processes are running, no alarm is reported. An alarm is reported when at least one process stops. Because conditional expressions in an alarm are evaluated using AND, an abnormal alarm cannot be set to report for a running process count other than from 1 to 5.

**(d) Monitoring whether a given process is running when there are multiple processes for which the first 31 bytes of the names are the same**

The following explains settings for monitoring whether a given process is running when there are multiple processes for which the first 31 bytes of the names are the same.

The following procedure sets an abnormal alarm to be reported when either of the following two processes are running and multiple 1234567890123456789012345678901A processes are running or stopped.

*Table 3-11: Example of processes running for which the first 31 bytes of the names are the same*

Program name	Process name
1234567890123456789012345678901A.exe	1234567890123456789012345678901A
1234567890123456789012345678901B.exe	1234567890123456789012345678901B

To monitor whether a given process is running:

1. Set the instance name for **ADD AN APPLICATION MONITORING SETTING** in the **ADDITION OR DELETION A SETTING** tree as follows:  
 Long Name Process Monitor
2. Set the **Long Name Process Monitor** property generated in the **Application monitoring settings** tree as follows:  
 Process01 Kind: Select **Command Line**.  
 Process01 Name: Enter 1234567890123456789012345678901A.  
 Process01 Range: Enter 1-1.

As a result of the above settings, when only one 1234567890123456789012345678901A process is running, the values of the Process01 Count, Process01 Status, and Application Status fields in the PD\_APP record are displayed as follows in the report.

*Table 3-12: Results for the values of each field in the PD\_APP record*

Field name	Value
<b>Process01 Count</b>	1 <sup>#1</sup>
<b>Process01 Status</b>	NORMAL <sup>#2</sup>
<b>Application Status</b>	NORMAL <sup>#2</sup>

#1

This indicates the number of corresponding processes running.

#2

This indicates that there is no issue.

3. Specify alarm settings as follows.

Record: Select **Application Summary (PD\_APP)**.

Monitored field: Select **Application Name**.

Condition: Select =.

Abnormal value: Enter Long Name Process Monitor (the instance name set in step 1).

Warning value: Enter Long Name Process Monitor (the instance name set in step 1).

After specifying the above settings and clicking the **Add** button, specify these additional settings:

Record: Select **Application Summary (PD\_APP)**.

Monitored field: Select **Application Status**.

Condition: Select <>.

Abnormal value: Enter NORMAL.

Warning value: Enter NORMAL.

In addition to the above monitoring, to monitor the 1234567890123456789012345678901B process using another monitoring method than what has already been used, use an instance name different than that above, and add the instance name to the condition in the Application Name field of the alarm setting.

### 3.2.6 Settings for collecting user-specific performance data

This section provides an overview of the function that collects user-specific performance data, and explains how to set up the function.

#### (1) Function overview

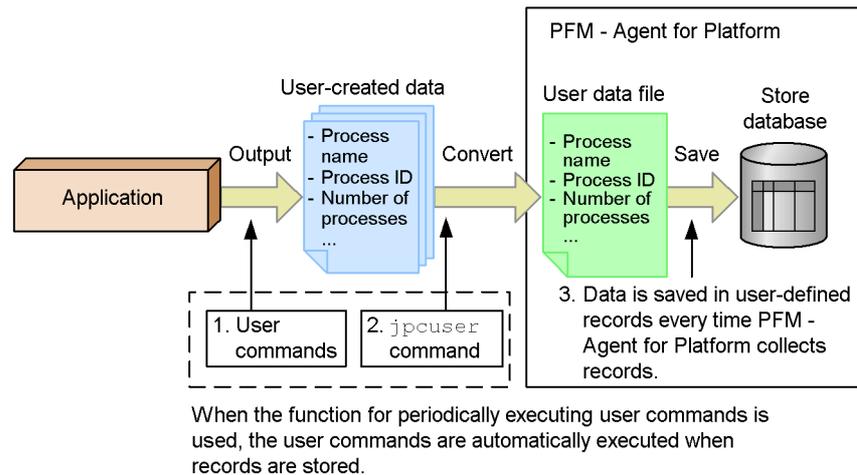
The following explains functionality for collecting user-specific performance data and functionality for periodically executing user commands.

##### (a) Functionality for collecting user-specific performance data

This functionality uses the `jpcuser` command to convert custom performance data output by users to a text file, into a format that can be stored in records provided by PFM - Agent for Platform (PD\_UPD, PD\_UPDB, PI\_UPI, and PI\_UPIB). To use this functionality for collecting user-specific performance data, a command must be created to output performance data to text files ahead of time.

The following figure shows how user-specific performance data is collected.

Figure 3-9: Mechanism for collecting user-specific performance data



The following describes the processing corresponding to the numbers in the figure.

1. User commands are executed to create user-defined data.

The *user commands* collect performance data, such as process name, process ID, and number of processes, and output the collected data to a text file. The data in the text file is called *user-created data*.

The user commands must be created as scripts beforehand.

2. The `jpcuser` command is executed to convert the user-created data.

The `jpcuser` command converts the user-created data into a file in a format that can be managed by PFM - Agent for Platform. The file resulting from the conversion is called a *user data file*.

3. The contents of the user data file are saved in user-defined records every time PFM - Agent for Platform performs record collection.

PFM - Web Console must be set beforehand so that PFM - Agent for Platform collects the records from the user data file.

To collect performance data periodically, use the functionality for periodically executing user commands to set a user command, and the `jpcuser` command, to execute automatically.

*Note:*

When outputting a file specified for the `jpcuser` command argument, or file in a batch file or script that executes the `jpcuser` command, specify a folder other than the installation folder.

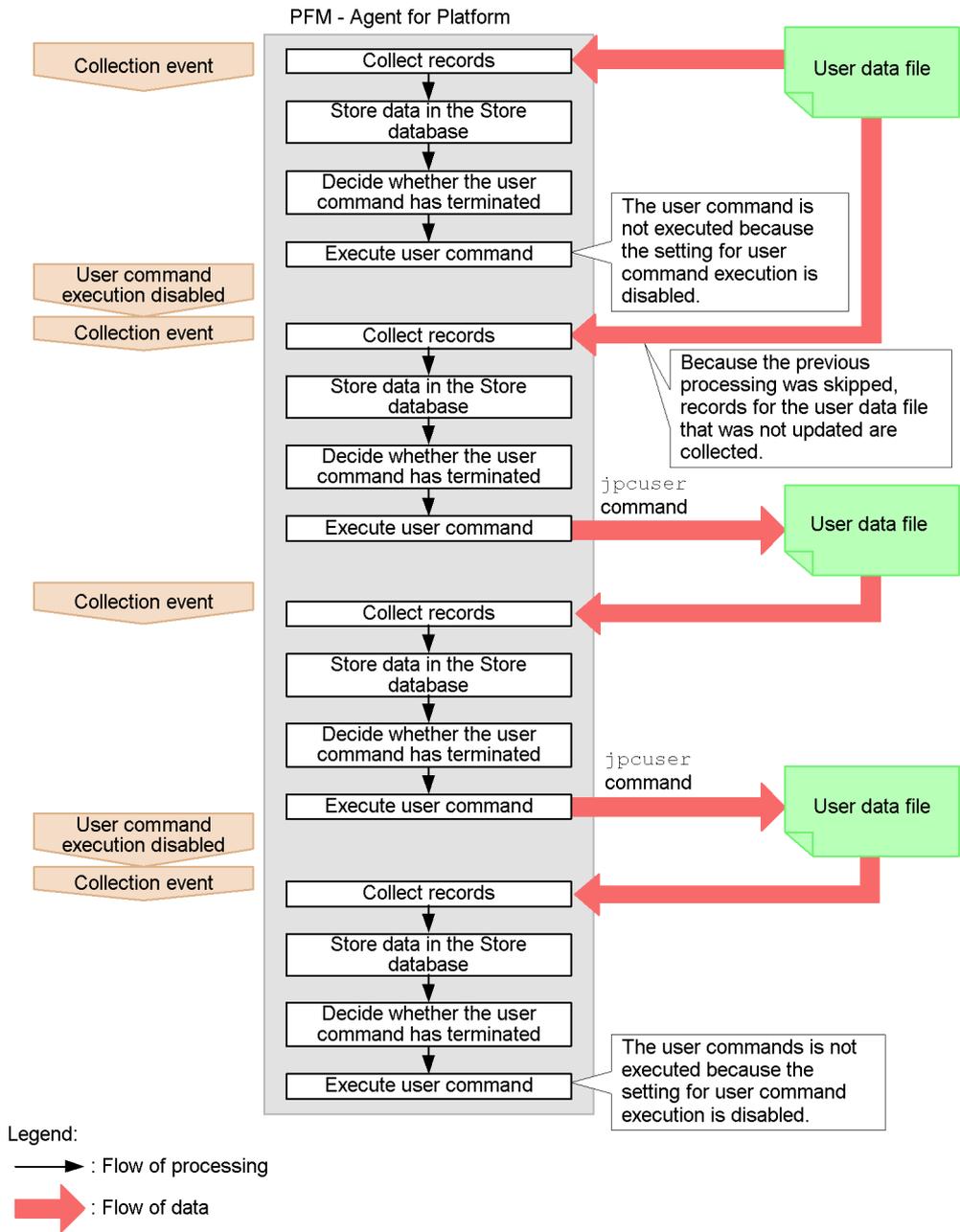
For Windows Server 2008 environments, when directly executing the `jpcuser` command from a user command, execute the user command from a user with Administrators permissions.

**(b) Functionality for periodically executing user commands**

This functionality executes a user command from PFM - Agent for Platform at a fixed interval without using a task scheduler or other schedule functionality. The method for creating user data files from user commands is the same as described in (a) *Functionality for collecting user-specific performance data*.

Functionality for periodically executing user commands is executed using the same timing as record collection in PFM - Agent for Platform. After record collection processing is completed, a user data file is created by a user command, so that user data file collection processing and creation processing do not cause a race condition. Note that because functionality for periodically executing user commands is executed according to **Collection Interval** as set for the user record, it is executed for historical collection and alarm collection, but not for real-time collection. The following figure shows the flow of processing for functionality for periodically executing user commands.

Figure 3-10: Flow of processing for functionality for periodically executing user commands



Functionality for periodically executing user commands determines whether the previously started user command has terminated, and skips user command processing if it is executing.

*Reference note:*

For versions of PFM - Web Console earlier than 09-00, functionality for periodically executing user commands cannot batch distribute properties to multiple PFM - Agent instances.

**(c) Precautions regarding functionality for periodically executing user commands**

The following gives precautions about functionality for periodically executing user commands.

Executable files

The file formats that can be executed by functionality for periodically executing user commands are as follows:

- EXE format: executable file
- COM format: executable (command) file
- BAT format: batch file

To execute internal commands such as DEL and DIR as jobs, create a batch file, and then execute the command within the batch file.

Accounts

Use the system account to execute functionality for periodically executing user commands. Make sure that the system account can access the following files and resources:

- Files specified for functionality for periodically executing user commands (user commands)
- Resources referenced or updated from those files (user commands)

Environment variables

The environment variables valid for executing functionality for periodically executing user commands are the system environment variables defined when the Performance Management program service starts up. Profile information is not loaded when functionality for periodically executing user commands is executed.

Current folder

The PFM - Agent for Platform service folder (*installation-folder*\jplpc\agtt\agent) is used as the current folder for

executing functionality for periodically executing user commands.

#### Other precautions

- Windows 16-bit applications cannot be executed.
- When specifying a command in the Windows `SYSTEMWOW64` system folder for functionality for periodically executing user commands, specify an absolute path.
- Programs that display a window or dialog box cannot be executed. However, the `net send` command can be executed to display a dialog box, because it displays the Windows Messenger service instead of a dialog box.
- Programs that use Windows messaging functionality (Dynamic Data Exchange, or *DDE*) cannot be executed.
- Programs that require interactivity cannot be executed.
- Resident programs (programs that do not terminate) cannot be executed.
- Programs with extensions linked to an application cannot be executed.
- Programs in network folders cannot be executed.
- Do not set up programs on removable disks or other disks that cannot be set up.
- Do not set Windows service startup settings to allow interaction with the desktop.
- The contents of the standard output and standard error output cannot be obtained for executed programs.
- When performing file output from an executed program, use an absolute path to specify the output destination file. If an absolute path is not specified, the folder for the PFM - Agent for Platform service (*installation-folder\jplpc\agtt\agent*) is used as the current folder.

#### **(2) Setting procedure**

To collect user-specific performance data:

1. Determine the information to be stored in fields.
2. Create user commands.
3. Set the scheduler to collect user-specific performance data periodically.
4. Specify the settings for collecting information from the user data file.

The following subsections describe the steps in this procedure.

**(a) Determining the information to be stored in fields**

The fields of a user-defined record store two types of information, key information and data information. You will need to consider what to store as key information and what to store as data information.

**■ Key information**

A user-defined record for storing user-specific performance data is a multi-instance record in which one or more rows can be stored by one collection run. To identify each record instance in one user-defined record, key information must be set. If you specify multiple user-created data files in the `jpcuser` command, you must set key information that uniquely identifies each record instance across all of the specified files. The following table describes the types of key information.

*Table 3-13: Types of key information*

Type	Field name	Explanation
Transaction type	<code>Trans Type</code>	Identifies the instance type.
Transaction key	<code>Trans Data Key</code> (numeric type)	Identifies each of the instances that have the same transaction type.
	<code>Trans String Key</code> (string type)	

The transaction type is used to identify the type of the performance data. For example, assume that information about a database is stored in one record and information about a Web server is stored in another record. In this case, you can use `DATABASE` and `WEB` as transaction types to indicate which type of information (information about a database or information about a Web server) is stored.

When there are multiple instances that have the same transaction type, the transaction key is used to identify each instance. If neither the `Trans Data Key` field nor the `Trans String Key` field is set or the same value is set for multiple transaction keys, the record instances cannot be identified uniquely. As a result, the first record instance is used.

**■ Data information**

As data information, user-defined records can store three types of numeric data (`double`, `long`, and `ulong` types), three lengths of string data, and time data. The number of data items that can be stored differs depending on the user-defined record. For numeric data of the `PI` record type, either *average* or *cumulative* can be selected as the consolidation rule.

Select the user-defined record to be used based on the performance data to be collected. Note that a user-defined record that can store a larger amount of information consumes a larger amount of memory and other resources. We recommend that you select the

user-defined record whose size is the minimum necessary.

The following table lists the number of fields for each type of user-defined record.

*Table 3-14: Number of fields for each type of user-defined record*

Record type	User-defined record type	Number of fields		
		Numeric data	String data	Time data
PD record type	User Data Detail (PD_UPD)	2 x 3 = 6	1 + 2 + 4 = 7	1
	User Data Detail - Extended (PD_UPDB)	5 x 3 = 15	5 + 5 + 5 = 15	1
PI record type	User Data Interval (PI_UPI)	4 x 3 = 12	1 + 2 + 4 = 7	1
	User Data Interval - Extended (PI_UPIB)	10 x 3 = 30	5 + 5 + 5 = 15	1

The following table lists the criteria for selecting the recommended user-defined record.

*Table 3-15: Criteria for selecting the recommended user-defined record*

Will cumulative data be stored as the performance data?	Will many types of performance data be stored?	Recommended user-defined record
Yes	No	PI_UPI
Yes	Yes	PI_UPIB
No	No	PD_UPD
No	Yes	PD_UPDB

### (b) Creating user commands

User commands are scripts that are used to collect performance data to generate user-created data. You must code the scripts so that performance data is output in the format used for user-created data files.

For details about the format of user-created data files, see (5) *Format of user-created data files*.

To verify the user-created data output by the user commands, execute the `jpcuser` command in the following format:

```
installation-folder\agtt\agent\jpcuser\jpcuser PI_UPI -file
user-created-data -debug 1
```

When the command is executed, the following debug log file is generated:  
*installation-folder\agtt\agent\jpcuser\debug\jpcuser\_dbg\_01.log*

Use the debug log file to check for errors.

For details about the `jpcuser` command, see (4) *Format of the jpcuser command*.

### (c) **Setting a scheduler to collect user-specific performance data periodically**

The following explains how to set up the functionality for periodically executing user commands, to periodically collect user-specific performance data.

To periodically collect user-specific performance data:

1. Set up user record collection in PFM - Web Console.

The execution interval for functionality for periodically executing user commands depends on the **Collection Interval** setting for each user record.

2. Set the properties for functionality for periodically executing user commands in PFM - Web Console.

In PFM - Web Console, set the following properties for each user record to run functionality for periodically executing user commands. The method for setting these properties is the same for PD\_UPD records, PD\_UPDB records, PI\_UPI records, and PI\_UPIB records.

*Figure 3-11: Properties for functionality for periodically executing user commands*

```

Service properties
PFM-Agent
|- General
|- System
|- Network Services
|- Detail Records
|- Interval Records
|- Log Records
|- Agent Configuration
|- Application monitoring setting
|- ADDITION OR DELETION A SETTING
|- User Command Setting/
    |- PD_UPD
    |- PD_UPDB
    |- PI_UPI
    |- PI_UPIB
    
```

*Table 3-16: Setting properties for user records*

Property	Value	Description	Default value
Execute	Yes/No	Specify whether to execute functionality for periodically executing user commands. <ul style="list-style-type: none"> <li>• Yes: Perform execution</li> <li>• No: Do not perform execution</li> </ul>	No
UserCommand	Absolute path	Specify the absolute path for user commands. The maximum length of the string that can be specified for an absolute path is 255 bytes. Half-width alphanumeric characters and half-width symbols can be specified, except for the following characters:   < >	Blank

#1

When the **Execute** property is set to **Yes** and the **UserCommand** property is blank, the KAVF11318-W message is output, and the user command is not executed.

#2

If the specified user command does not exist, or the user command does not have execution permissions, the KAVF11007-W message is output.

*Reference note:*

The Windows Task Scheduler can be used to periodically collect user-specific performance data. Windows includes Task Scheduler, which can automatically execute a batch file or program at the specified time and interval. After creating a batch file that executes the user commands and then the `jpcuser` command, set Task Scheduler so that the batch file is executed periodically.

**(d) Specifying the settings for collecting information from the user data file**

The user data file contains data that the `jpcuser` command has converted from user-created data into a record format that can be managed by PFM - Agent for Platform. The data in the user data file is stored in user-defined records every time PFM - Agent for Platform collects records. Make sure that PFM - Web Console is set so that PFM - Agent for Platform will collect user-defined records.

For details about how to collect records, see the chapter on Performance Management functionality in the manual *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

**(3) Example of collecting user-specific performance data**

This subsection provides an example of collecting process information into the `PI_UPI` record under the conditions shown in the following table.

*Table 3-17: Conditions for collecting performance data in the example*

Option	Explanation	Corresponding field	Value
tt	Transaction type	Trans Type	PROCESS
ki	Transaction key (numeric type)	Trans Data Key	Process ID
ks	Transaction key (string type)	Trans String Key	Process name
u	Unsigned long type	User Unsigned Long 1	Number of threads

**(a) Examples of user commands**

The following are examples of user commands (`userproc1.vbs` and `userproc2.vbs`) that acquire process information from Windows and output user-created data.

`userproc1.vbs:`

### 3. User-Defined Record Collection

```
' Output header.
WScript.Echo "Product Name=PFM-Agent for Platform (Windows)"
WScript.Echo "FormVer=0001"
' Output option header.
WScript.Echo "tt ki ks u"
' Get and output a list of processes. A string including a space
is enclosed in Chr(34) codes.
for each Process in
GetObject("winmgmts:").InstancesOf("win32_process")
    WScript.Echo "Process", Process.ProcessId, Chr(34) &
Process.Name & Chr(34), Process.ThreadCount
next

userproc2.vbs:
' Output header.
WScript.Echo "Product Name=PFM-Agent for Platform (Windows)"
WScript.Echo "FormVer=0001"
' Output option header.
WScript.Echo "tt u"
' Get and output total amount of physical memory.
for each Memory in
GetObject("winmgmts:").InstancesOf("Win32_LogicalMemoryConfigu
ration")
    WScript.Echo "TotalPhysicalMemory",
Memory.TotalPhysicalMemory
next
```

The following examples are examples of user-created data output by the user commands above.

Example of user-created data output by userproc1.vbs:

```
Product Name=PFM-Agent for Platform (Windows)
FormVer=0001
tt ki ks u
Process 0 "System Idle Process" 1
Process 8 "System" 41
Process 172 "SMSS.EXE" 6
Process 200 "CSRSS.EXE" 12
Process 196 "WINLOGON.EXE" 19
Process 248 "SERVICES.EXE" 41
```

Example of user-created data output by userproc2.vbs:

```
Product Name=PFM-Agent for Platform (Windows)
FormVer=0001
tt u
TotalPhysicalMemory 1048052
```

*Reference note:*

- For an example of collecting information about used ports, see 1.3.2(8) *Example of collecting information about used ports*.
- For an example of collecting performance data from multiple hosts on which PFM product is not installed, see 1.3.2(9) *Example of collecting performance data from multiple hosts on which PFM products are not installed*.

**(b) Example of a batch file used to perform periodic collection**

The following gives an example of a batch file (`userperf.bat`) using functionality for periodically executing user commands to perform periodic execution.

Move the REM folder

```
cd C:\Program Files\Hitachi\jp1pc\agtt\agent\jpcuser
```

REM Generate user-created data.

```
cscript //nologo userproc1.vbs > UPI1.txt
```

```
cscript //nologo userproc2.vbs > UPI2.txt
```

REM Use the jpcuser command to convert the data into a record format.

```
jpcuser PI_UPI -file UPI1.txt -file UPI2.txt#
```

#: If `-debug 2` is specified, debug log information is output to the following folder:  
*installation-folder\agtt\agent\jpcuser\debug\*

Store the batch file (`userperf.bat`) and VB script in the following location:

```
C:\Program Files\Hitachi\jp1pc\agtt\agent\jpcuser
```

*Reference note:*

This batch file can be periodically executed using the Windows Task Scheduler.

**(4) Format of the jpcuser command**

The following describes the format of the `jpcuser` command.

Format:

```
jpcuser record-name
      -file user-created-data-file-name
      [-file user-created-data-file-name]...
      [-debug [0|1|2]]
```

Note: Square brackets ( [ ] ) indicate optional items. A vertical bar ( | ) has the same meaning as *OR*. Accordingly, only one of the options separated by a vertical bar can be used at a time.

Description:

The `jpcuser` command converts user-created data (user-specific performance

data output by user commands) into data in a format that PFM - Agent for Platform can use (user data file).

The command can also output debug log information that can be used for checking whether the user-created data is correct. For details about the debug log, see (6) *Debug log*.

If an error occurs during execution of this command, an error message is output to the following folder:

*installation-folder\agtt\agent\jpcuser\log\public\*.

Users who can execute the command:

Members of the Administrators group

Location of the command:

*installation-folder\agtt\agent\jpcuser\*

Arguments:

The first argument in the command line must be *record-name*. The `-debug` option can be specified before or after `-file` options. The arguments that are always required on the command line are *record-name* and a `-file` option. The `-debug` option can be omitted.

*record-name*

Specify the name of the user-defined record in which performance data is to be stored. You can specify only one of the following names:

- PD\_UPD
- PD\_UPDB
- PI\_UPI
- PI\_UPIB

`-file` *user-created-data-file-name*

Specify the name of a user-created data file whose length is no more than 1023 bytes. Use multiple `-file` options to specify multiple user-created data files. When multiple user-created data files are specified, the command creates one user data file from the user-created data files.

Wildcard characters cannot be used in the file name specified in the `-file` option.

You can specify a file name by using a relative path name from the current directory, which is the directory in which the command is executed.

If a warning occurs in one or more files when multiple user-created data files are specified, the command returns a value that indicates normal termination

with a warning. If an error occurs in one or more files, the command returns a value that indicates abnormal termination or the occurrence of an error.

`-debug [0|1|2]`

Use this option to specify whether to output only the user data file, only the output debug log information, or both. You can use this option to check whether the user-created data was correct. You can specify only one `-debug` option in the command.

When `-debug 1` is specified, the command performs only debugging. If you want to create user-defined records, specify the `-debug` option with a value other than 1.

If an error message is output to the debug log, an error might exist in the user command scripts.

If this option is not specified, the command does not output debug log information.

The following table explains the values that can be specified in the `-debug` option.

*Table 3-18: Values specified for the debug option*

Value	User data file output?	Debug log file output?
0	Yes	No
1	No	Yes
2	Yes	Yes
Other values	Yes	No
No value specified	Yes	No

Legend:

Yes: The file is output.

No: The file is not output.

The user data file is created with the name `jpcuser_XXX` in the *installation-folder*\agtt\agent\jpcuser\userdata folder. The *XXX* part represents the record type (UPD, UPDB, UPI, or UPIB).

The debug log is created with the name `jpcuser_dbg_XX.log` in the *installation-folder*\agtt\agent\jpcuser\debug folder. The *XX* part is a two-digit number that indicates how new the log file is. The following table explains the naming rule for debug log files.

Table 3-19: Example of debug log output

Debug log file name	Explanation
jpcuser_dbg_01.log	The latest debug log file
jpcuser_dbg_02.log	The second latest debug log file
jpcuser_dbg_03.log	The third latest debug log file
...	...

Return value:

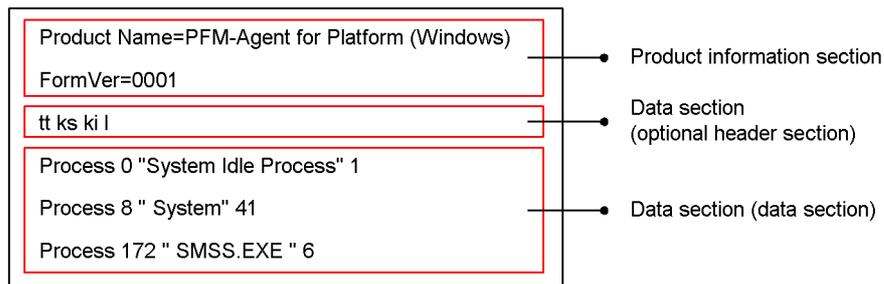
0	Normal termination
1 to 100	Normal termination with a warning
101 to 255	Abnormal termination or the occurrence of an error

**(5) Format of user-created data files**

This subsection describes the format of user-created data files. For user commands collecting performance data, output text according to this format.

Information output to a user-created data file consists of a product information section and a data section. Both of these sections must be present in each user-created data file. The following figure gives an example configuration of user-created data.

Figure 3-12: Example configuration of user-created data



**(a) Product information section**

The product information section contains the constants that indicate the product name and the version of the user-created data file. The information set in this section is used only by internal functions and is not stored in records.

The following is an example of information set in this section.  
 Product Name=PFM-Agent for Platform (Windows)  
 FormVer=0001

*Note:*

In the above specification method, an error will occur if there is a space before or after the equal sign (=). Note that the specified characters are case sensitive.

## (b) Data section

This section sets performance data information. This information is specified below the product information section. The data section consists of the option header and a data part.

### ■ Option header

The first line is the option header line, which contains the specified field options. Each option must be separated using one or more space characters or tabs. The field options correspond to user record fields.

```
tt ks ki l ...
```

The following table lists field option names and corresponding record field names. Each of the columns for number of fields indicates the maximum number of options that can be specified. For example, if `ss` is specified multiple times for the field option in a `PI_UPI` record, note that the `PI_UPI` column (No. 10) indicates 4. Accordingly, you can specify `ss` a maximum of four times, such as `ss ss ss ss`, for the `PI_UPI` record.

*Table 3-20:* Options that can be specified in the data section and the corresponding fields

No.	Option name	Field name	Explanation of value	Number of fields (total)			
				PD_U PD (17)	PD_U PDB (34)	PI_U PI (23)	PI_U PIB (49)
1	tt	Trans Type	Transaction type. This option is a required item. <sup>#1</sup> Size: 1 to 19 bytes	1	1	1	1
2	ki	Trans Data Key	Numeric-type transaction key. Either <code>ki</code> or <code>ks</code> , or both, must be specified. Type: <code>ulong</code> Specifiable characters: Numeric values and a plus sign (+)	1	1	1	1
3	ks	Trans String Key	String-type transaction key. Either <code>ki</code> or <code>ks</code> , or both, must be specified. <sup>#1</sup> Size: 1 to 19 bytes	1	1	1	1

3. User-Defined Record Collection

No.	Option name	Field name	Explanation of value	Number of fields (total)			
				PD_U PD (17)	PD_U PDB (34)	PI_U PI (23)	PI_U PIB (49)
4	f	User Float	Floating point number. <sup>#2</sup> Type: double	2	5	2	5
5	f <sub>r</sub> <sup>#3</sup>	User Float Roll	Floating point number for a cumulative value. <sup>#2</sup> Type: double	--	--	2	5
6	l	User Long	Signed long data. Type: long Specifiable characters: Numeric values and signs (+, -)	2	5	2	5
7	l <sub>r</sub> <sup>#3</sup>	User Long Roll	Signed long data for a cumulative value. Type: long Specifiable characters: Numeric values and signs (+, -)	--	--	2	5
8	s <sub>l</sub>	User String (64 )	Long string. <sup>#1</sup> Size: 1 to 63 bytes + NULL	1	5	1	5
9	s <sub>m</sub>	User String (32 )	Medium string. <sup>#1</sup> Size: 1 to 31 bytes + NULL	2	5	2	5
10	s <sub>s</sub>	User String (16 )	Short string. <sup>#1</sup> Size: 1 to 15 bytes + NULL	4	5	4	5
11	t	User Time	Time data (time_t type) in the following format: <i>YYYY/MM/DD, hh:mm:ss</i> The time must be the local time of the machine on which the jpcuser command is executed.	1	1	1	1
12	u	User Unsigned Long	Unsigned long data. Type: ulong Specifiable characters: Numeric values and a plus sign (+)	2	5	2	5

No.	Option name	Field name	Explanation of value	Number of fields (total)			
				PD_U PD (17)	PD_U PDB (34)	PI_U PI (23)	PI_U PIB (49)
13	ur <sup>#3</sup>	User Unsigned Long Roll	Unsigned long data for a cumulative value. Type: ulong Specifiable characters: Numeric values and a plus sign (+)	--	--	2	5

Legend:

--: Not specifiable.

#1

The characters that can be specified are upper-case and lower-case alphabetic characters, numeric characters, space characters, and the following symbols:

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

#2

The characters that can be specified are numeric values and the following symbols:

- + .

#3

When history data collected by specifying the `fr`, `lr`, or `ur` option is displayed in consolidation mode, the cumulative value is displayed. When a numeric-value option other than these options or the `ki` option is specified, the average value is displayed.

Note that if multiple field options are specified for user-created data, they are allocated sequentially to the target field of the user record.

For example, if `lr` is specified 3 times for the field option of the `PI_UPIB` record, this is specified as `lr lr lr`. In this case, each `lr` is allocated to its field as follows:

- First `lr`: User Long Roll 1
- Second `lr`: User Long Roll 2
- Third `lr`: User Long Roll 3

If `s1 lr s1 lr lr` is specified, it is allocated to the following fields:

- First `s1`: User String 11

- Second `lr`: User Long Roll 1
- Third `s1`: User String 12
- Fourth `lr`: User Long Roll 2
- Fifth `lr`: User Long Roll 3

#### ■ Data

The second and subsequent lines are for data. Data lines specify the performance data, corresponding to the field operations specified in the optional header. Each column is separated by 1 or more bytes of spaces or tabs.

Make sure that the order of the data matches the field option type.

For example, if `tt ks lr lr ss ss` is specified for the field option, an error will occur for all lines for the following data order:

```
TCP jplhost "ESTABLISHD COUNT=" 5 "LISTENING COUNT=" 2
TCP jplhost "ESTABLISHD COUNT=" 3 "LISTENING COUNT=" 1
TCP jplhost "ESTABLISHD COUNT=" 3 "LISTENING COUNT=" 2
```

The reason this error occurs is because the field options for the third and sixth columns do not match the data types.

- Third column

The string "ESTABLISHD COUNT=" is specified for the `lr` field option, even though a cumulative `long` integer value should be specified.

- Sixth column

The integer values 2, 1, 2 are specified for the `ss` field option, even though a string of size 16 should be specified.

#### (c) Precautions

- Create user-created data files in ASCII.
- Each data line in this file must be terminated with a carriage return character and line feed character (CR+LF).
- Comments cannot be specified in user-created data files.
- An error will occur if any of the first three lines of a user-created data file are empty or contain a half-width space character.
- Any empty lines or lines that contain a half-width space character are disregarded for the fourth and subsequent lines of a user-created data file.
- When entering a string with a space character, enclose the string in double quotation marks (").
- For the string type, set a single-byte string of printable alphanumeric characters.

Special single-byte characters such as " cannot be set.

- One field option can be specified for definition in the optional header line for each user-created data file. To define a different field option, create another user-created data file.

## (6) Debug log

The debug log is used to check whether the user-created data is correct. If you want to output debug log information, specify the `-debug 1` or `-debug 2` option in the `jpcuser` command.

In the debug log, a check result code, such as `OK` (success), `NG` (failure), or `WG` (warning), is output for each data line in the user-created data. If `NG` or `WG` is output in the debug log, the user-created data might be invalid. If `NG` or `WG` has been output, check the user commands by which the user-created data was created, and make any necessary corrections for outputting the data in the correct format. For the correct format, see (5) *Format of user-created data files*.

The following shows the location and name of a debug log file:

```
installation-folder\agtt\agent\jpcuser\debug\jpcuser_dbg_{01|02|03|04|05}.log
```

The following describes the debug log file format.

### (a) Debug log file format

A debug log file consists of four sections:

- Product information
- The execution time and process ID of the `jpcuser` command
- Header line
- Check results

A check result is output for each data line in the user-created data. A comma is used to separate items.

The following table explains the items that are output to a debug log file.

*Table 3-21: Items that are output to a debug log file*

No.	Section	Item	Value	Explanation
1	Product information	Product name	Product Name=PFM-Agent for Platform (Windows)	The PFM - Agent product name.
2		Format version	FormVer=0001	The version of the user-created data format.

### 3. User-Defined Record Collection

No.	Section	Item	Value	Explanation
3	Execution time and process ID of the <code>jpcuser</code> command	Execution time	<i>YYYY/MM/DD hh:mm:ss</i>	<i>YYYY</i> : Year <i>MM</i> : Month <i>DD</i> : Day <i>hh</i> : Hour <i>mm</i> : Minute <i>ss</i> : Second
4		Process ID	<code>PID=xxxx</code>	The process ID of the <code>jpcuser</code> command.
5	Header line	Header	Example (for the <code>PD_UPD</code> record): <code>LineNumber, Result, APITime, Recordtype, Transactiontype, t, ks, ki, L1, L2, UL1, UL2, F1, F2, SS1, SS2, SS3, SS4, SM1, SM2, SL1</code>	The debug log header. The header names correspond to the field options and field names specified on the option header line in a user-created data file. For the correspondence, see Table 3-14. Note that the header items differ depending on the user-defined records that are to be stored.
6	Check result	User-created data file name	Example: <code>File=D:\Program Files\HITACHI\jplpc\agtt\agent\jpcuser\UPIB_sample01.txt</code>	The user-specified path name of a user-created data file that is read is output.
7		Error or warning message	<code>KAVFxxxx-x</code>	If an error or other problem that the user should be made aware of occurs on a line in the user-created data, the applicable error and warning messages are output at the beginning of the line.
8		Line number	Numeric value	The number of a line in the user-created data.
9		Result code	<code>OK</code>	Success. The line in the user-created data was free of problems and was converted successfully.

No.	Section	Item	Value	Explanation
10			WG	Warning. The line in the user-created data contained a problem but was converted nevertheless. When WG is output, a warning message is also output.
11			NG	Failure. The line in the user-created data contained a problem and was not converted. When NG is output, a warning message or error message, depending on the cause of the problem, is also output. If a warning message is output, processing continues. If an error message is output, processing stops.
12			BL	Null line. The line in the user-created data is empty and is ignored.
13		Data	Data	The contents of the line in the user-created data. For an empty numeric field, 0 is output. For an empty string field, two quotation marks ( " ") are output.

The following table lists the items output on the header line in a debug log file and their corresponding field options and field names specified on the option header line in a user-created data file.

*Table 3-22:* Header line items in a debug log file and their corresponding field options and field names

No.	Item on the header line in a debug log file	Field option specified on the option header line in a user-created data file	Field name (PFM - View name)	Explanation
1	Line Number	--	--	Number of the line on which the relevant data exists
2	Result	--	--	Check result of the relevant data
3	API Time	--	Collect Time	Time that the relevant data was converted
4	Record type	--	Record Type	Record type
5	Transaction type	tt	Trans Type	Transaction type
6	t	t	User Time 1	Time value
7	ks	ks	Trans String Key	String-type transaction key
8	ki	ki	Trans Data Key	Numeric-type transaction key
9	L1	l	User Long 1	Integer value of type long
10	L2	l	User Long 2	Integer value of type long
11	L3	l	User Long 3	Integer value of type long
12	L4	l	User Long 4	Integer value of type long
13	L5	l	User Long 5	Integer value of type long
14	L1R	lr	User Long Roll 1	Cumulative integer value of type long
15	L2R	lr	User Long Roll 2	Cumulative integer value of type long

No.	Item on the header line in a debug log file	Field option specified on the option header line in a user-created data file	Field name (PFM - View name)	Explanation
16	L3R	lr	User Long Roll 3	Cumulative integer value of type long
17	L4R	lr	User Long Roll 4	Cumulative integer value of type long
18	L5R	lr	User Long Roll 5	Cumulative integer value of type long
19	UL1	u	User Unsigned Long 1	Integer value of type unsigned long
20	UL2	u	User Unsigned Long 2	Integer value of type unsigned long
21	UL3	u	User Unsigned Long 3	Integer value of type unsigned long
22	UL4	u	User Unsigned Long 4	Integer value of type unsigned long
23	UL5	u	User Unsigned Long 5	Integer value of type unsigned long
24	UL1R	ur	User Unsigned Long Roll 1	Cumulative integer value of type unsigned long
25	UL2R	ur	User Unsigned Long Roll 2	Cumulative integer value of type unsigned long
26	UL3R	ur	User Unsigned Long Roll 3	Cumulative integer value of type unsigned long
27	UL4R	ur	User Unsigned Long Roll 4	Cumulative integer value of type unsigned long
28	UL5R	ur	User Unsigned Long Roll 5	Cumulative integer value of type unsigned long
29	F1	f	User Float 1	Floating point number value

### 3. User-Defined Record Collection

No.	Item on the header line in a debug log file	Field option specified on the option header line in a user-created data file	Field name (PFM - View name)	Explanation
30	F2	f	User Float 2	Floating point number value
31	F3	f	User Float 3	Floating point number value
32	F4	f	User Float 4	Floating point number value
33	F5	f	User Float 5	Floating point number value
34	F1R	fr	User Float Roll 1	Cumulative floating point number value
35	F2R	fr	User Float Roll 2	Cumulative floating point number value
36	F3R	fr	User Float Roll 3	Cumulative floating point number value
37	F4R	fr	User Float Roll 4	Cumulative floating point number value
38	F5R	fr	User Float Roll 5	Cumulative floating point number value
39	SS1	ss	User String 1	16-byte character string
40	SS2	ss	User String 2	16-byte character string
41	SS3	ss	User String 3	16-byte character string
42	SS4	ss	User String 4	16-byte character string
43	SS5	ss	User String 5	16-byte character string
44	SM1	sm	User String 5 (for the PD_UPD or PI_UPI record) User String 6 (for the PD_UPDB or PI_UPIB record)	32-byte character string

No.	Item on the header line in a debug log file	Field option specified on the option header line in a user-created data file	Field name (PFM - View name)	Explanation
45	SM2	sm	User String 6 (for the PD_UPD or PI_UPI record) User String 7 for the (PD_UPDB or PI_UPIB record)	32-byte character string
46	SM3	sm	User String 8	32-byte character string
47	SM4	sm	User String 9	32-byte character string
48	SM5	sm	User String 10	32-byte character string
49	SL1	s1	User String 7 (for the PD_UPD or PI_UPI record) User String 11 (for the PD_UPDB or PI_UPIB record)	64-byte character string
50	SL2	s1	User String 12	64-byte character string
51	SL3	s1	User String 13	64-byte character string
52	SL4	s1	User String 14	64-byte character string
53	SL5	s1	User String 15	64-byte character string

Legend:

--: Not applicable

**(b) Example of information output to a debug log file**

The following figure shows an example of information output to a debug log file.



is output.

3. Output of the check result for the user-created data file begins with this line. The number (4) at the beginning of the line indicates the number of the line in the user-created data file. In a user-created data file, the first line contains product information, the second line contains version information, and the third line is the option header line. Therefore, checking normally begins with line 4. If the line contains no problems, OK is output for `Result`.
4. The user-specified path name of another user-created data file that is read is output.
5. This line warns the user of a problem on line 4 in the `UPIB_sample02.txt` file. Because the `t` value (`2007/02/24,10:10:010`) did not have the expected format, `n/a` has been output for the element corresponding to `t` (see (7) in the figure).
6. This line also warns the user of a problem on line 4 in the `UPIB_sample02.txt` file. Because the specified `ss` value (`abcdefghijklmnop`) exceeded the predefined maximum of 15 bytes, a warning message has been output, and a truncated value (`abcdefghijklmnop`) has been output for the element corresponding to `SS1` (see (7) in the figure).
7. Because the warnings indicated by (5) and (6) have been issued, the check result code `WG` has been output for `Result` for line 4.
8. The check result code `BL` indicates that the line is a null line.
9. This line warns the user of a problem on line 7. A warning message has been output because the specified `ks` value exceeded the predefined maximum of 19 bytes.
10. Because the value of the `ks` unique key on line 7 in the user-created data file was incorrect, the value could not be used. Accordingly, `NG` has been output for `Result`. If the value of `Transaction type`, `ks`, or `ki`, which is a unique key, is incorrect, the line is not processed.



## Chapter

---

# 4. Monitoring Templates

---

This chapter explains the monitoring templates for PFM - Agent for Platform.

- Overview of monitoring templates
- Format of alarm explanations
- List of alarms
- Format of report explanations
- Organization of report folders
- List of reports

---

## Overview of monitoring templates

---

In Performance Management, you can use the following methods to define alarms and reports:

- Using the alarms and reports defined in PFM - Agent without any modification
- Copying and customizing the alarms and reports defined in PFM - Agent
- Using the wizard to define new alarms and reports

A collection of alarms and reports provided by PFM - Agent is called a *monitoring template*. Because the necessary information is predefined for the alarms and reports in the monitoring templates, you can copy and use them without modification, or you can customize them according to the user environment. Therefore, you can easily prepare for monitoring the operating status of a monitoring target without having to use a wizard to specify new definitions.

This chapter explains the settings of alarms and reports in the monitoring templates defined in PFM - Agent for Platform.

For details about how to use the monitoring templates, see the chapter that explains operation monitoring that uses alarms and creates reports for operation analysis in the manual *Job Management Partner 1/Performance Management User's Guide*.

---

## Format of alarm explanations

---

This section explains alarm formats. Alarms are listed in alphabetical order.

### Alarm name

Indicates the alarm name in the monitoring template.

### Overview

Provides an overview of the target that can be monitored with this alarm.

### Primary settings

Explains the primary settings of this alarm using a table. This table shows the correspondence between alarm settings and the setting items in the Properties window, which is displayed by clicking the alarm icon in the Alarms window in PFM - Web Console and then clicking the **Properties** method. To check the details of each alarm setting, use the Properties window of the alarm in PFM - Web Console.

If - is set, it means that the setting is always invalid.

If an error condition and a warning condition are the same in a conditional expression, an alarm event is issued for the error condition only.

### Alarm tables

Indicates the alarm tables in which this alarm is stored.

### Related report

Indicates the monitoring template reports that are related to this alarm. To display this report, in the Agents window in PFM - Web Console, click the agent icon and then

click the  icon, which is displayed in the **Display Alarm Status** method.

---

## List of alarms

---

A table containing one or more alarms is called an *alarm table*. The alarms defined in the monitoring template of PFM - Agent for Platform are stored in the alarm tables in the `windows` folder, which is displayed on the **Alarms** tab in PFM - Web Console.

The following lists the alarm table names.

- PFM Windows Template Alarms 09.00
- PFM Windows Template Alarms [CPU] 09.00
- PFM Windows Template Alarms [MEM] 09.00
- PFM Windows Template Alarms [DSK] 09.00
- PFM Windows Template Alarms [NET] 09.00
- PFM Windows Template Alarms [PS] 09.00
- PFM Windows Template Alarms [LOG] 09.00

Square brackets ([ ]) in an alarm table name

The monitoring item applicable to the alarm table is enclosed in square brackets ([ ]). The alarm table without a square-bracket suffix consists of basic alarms.

"09.00" following the alarm table name

This value indicates the alarm table version.

For PFM - Agent for Platform, the Alarms tree might display an alarm table of a version that is not available in the Performance Management system being used. When using an alarm table defined in the monitoring template, check the alarm table version being used by the Performance Management system and version compatibility. For details about the alarm table version and version compatibility, see *H. Version Compatibility*.

The table below shows the alarms defined in the monitoring template of PFM - Agent for Platform.

*Table 4-1: Alarm list*

Alarm table name	Alarm name	Monitoring target
PFM Windows Template Alarms 09.00	Available Memory	Unused size in the physical memory area (MB)
	CPU Usage	CPU usage (%)

Alarm table name	Alarm name	Monitoring target
	Disk Space	Percentage of free space in the entire usable logical disk
PFM Windows Template Alarms [CPU] 09.00	CPU Usage	CPU usage (%)
	Processor Queue	Number of requests in the processor queue
	SVR Processor Queue	
PFM Windows Template Alarms [MEM] 09.00	Available Memory	Unused space in the physical memory area (MB)
	Committed Mbytes	Amount of used virtual memory area (MB)
	Pages/sec	Rate of paging for the pages when page faults occurred (per second)
	Page Faults/sec	Number of page faults that occurred (per second)
PFM Windows Template Alarms [DSK] 09.00	Disk Space	Percentage of free space in the entire usable disk
	Logical Disk Free	Unused area in the entire usable disk space (MB)
	Disk Busy %	Percentage of elapsed time when the disk was busy processing a read or write request
	Logical Disk Queue	Number of queued requests remaining on a disk that are waiting to be processed or are currently being processed
	Physical Disk Queue	
PFM Windows Template Alarms [NET] 09.00	Network Received	Amount of data received over the network interface (bytes/second)
PFM Windows Template Alarms [PS] 09.00	Process End	Process name
	Process Alive	Number of processes being executed by the workgroup
	Service(Service Nm)	Service name used in the service control manager database, and the service status during data collection

List of alarms

<b>Alarm table name</b>	<b>Alarm name</b>	<b>Monitoring target</b>
	Service(Display Nm)	Name used by the user interface program to identify the service, and the service status during data collection
PFM Windows Template Alarms [LOG] 09.00	Event Log(all)	All errors and warnings output to the event log
	Event Log(System)	All MSCS errors and warnings output to the event log

---

## Available Memory

---

### Overview

The Available Memory alarm monitors the unused size in the physical memory area (MB). The value to be monitored is the combined total of zero memory, free memory, and standby memory (cached) that can be immediately allocated to a process or be used by the system when the data is being collected. This value is not an average but is the latest monitored value. If the unused size is less than the threshold, the physical memory area might be insufficient.

### Primary settings

PFM - Web Console alarm property		Settings
Item	Detailed item	
Basic information	<b>Report alarm when the following damping condition is reached.</b>	Yes
	interval(s)	3
	occurrence(s) during	2
Action	SNMP	Error, Warning, Normal
Condition expression	Record	System Overview (PI)
	Field	Available MB
	Error condition	Available MB < 3
	Warning condition	Available MB < 4

### Alarm tables

PFM Windows Template Alarms 09.00

PFM Windows Template Alarms [MEM] 09.00

### Related reports

Reports/Windows/Operating System/Troubleshooting/Real-Time/System Overview

---

## CPU Usage

---

### Overview

The CPU Usage alarm monitors the processor usage (%). The value to be monitored is the percentage of the time the processor spent executing non-idle threads. The maximum value is 100%, even in a multi-processor environment. If the CPU usage continues to exceed the threshold, the processor might be a system bottleneck.

### Primary settings

PFM - Web Console alarm property		Settings
Item	Detailed item	
Basic information	<b>Report alarm when the following damping condition is reached.</b>	Yes
	<b>interval(s)</b>	3
	<b>occurrence(s) during</b>	2
Action	SNMP	Error, Warning, Normal
Condition expression	Record	System Overview (PI)
	Field	CPU %
	Error condition	CPU % >= 90
	Warning condition	CPU % > 80

### Alarm tables

PFM Windows Template Alarms 09.00

PFM Windows Template Alarms [CPU] 09.00

### Related reports

Reports/Windows/Operating System/Troubleshooting/Real-Time/CPU Usage - Top 10 Processes

---

## Disk Space

---

### Overview

The Disk Space alarm monitors the percentage of free space in the entire usable logical disk. If the percentage of free space is smaller than the threshold, disk space might be insufficient.

### Primary settings

PFM - Web Console alarm property		Settings
Item	Detailed item	
Basic information	<b>Report alarm when the following damping condition is reached.</b>	Yes
	interval(s)	3
	occurrence(s) during	2
Action	SNMP	Error, Warning, Normal
Condition expression	Record	Logical Disk Overview (PI_LOGD)
	Field	% Free Space
	Error condition	% Free Space < 5
	Warning condition	% Free Space < 15

### Alarm tables

PFM Windows Template Alarms 09.00

PFM Windows Template Alarms [DSK] 09.00

### Related reports

Reports/Windows/Operating System/Troubleshooting/Real-Time/Free Space - Low 10 Logical Drives

---

## Processor Queue

---

### Overview

The Processor Queue alarm monitors the number of threads in the processor queue that are ready to be executed. If the number of requests continues to be at or above the threshold, processor congestion is indicated.

### Primary settings

PFM - Web Console alarm property		Settings
Item	Detailed item	
Basic information	<b>Report alarm when the following damping condition is reached.</b>	Yes
	<b>interval(s)</b>	3
	<b>occurrence(s) during</b>	2
Action	SNMP	Error, Warning, Normal
Condition expression	Record	System Overview (PI)
	Field	Processor Queue Length
	Error condition	Processor Queue Length >= 10
	Warning condition	Processor Queue Length >= 2

### Alarm tables

PFM Windows Template Alarms [CPU] 09.00

### Related reports

Reports/Windows/Operating System/Status Reporting/Real-Time/Workload Status

---

## SVR Processor Queue

---

### Overview

The SVR Processor Queue alarm monitors the current length of the CPU server operation queue. If the queue length continues to be at or above the threshold, high processor load is indicated.

### Primary settings

PFM - Web Console alarm property		Settings
Item	Detailed item	
Basic information	<b>Report alarm when the following damping condition is reached.</b>	Yes
	interval(s)	3
	occurrence(s) during	2
Action	SNMP	Error, Warning, Normal
Condition expression	Record	Server Work Queues Overview (PI_SVRQ)
	Field	Queue Length
	Error condition	Queue Length >= 3
	Warning condition	Queue Length >= 2

### Alarm table

PFM Windows Template Alarms [CPU] 09.00

### Related reports

None

---

## Committed Mbytes

---

### Overview

The Committed Mbytes alarm monitors the amount of used virtual memory (MB). If the amount of used virtual memory continues to be at or above the threshold (the value of the `Total Physical Mem Mbytes` field of the `PI` record), the physical memory area might be insufficient.

### Primary settings

PFM - Web Console alarm property		Settings
Item	Detailed item	
Basic information	<b>Report alarm when the following damping condition is reached.</b>	Yes
	<b>interval(s)</b>	3
	<b>occurrence(s) during</b>	2
Action	SNMP	Error, Warning, Normal
Condition expression	Record	System Overview (PI)
	Field	Committed Mbytes
	Error condition	Committed Mbytes >= 2046 <sup>#1</sup>
	Warning condition	Committed Mbytes >= 1024 <sup>#2</sup>

#1

Depending on the environment, set a value around 90% of the value of the `Commit Limit Mbytes` field in the `PI` record.

#2

Depending on the environment, set the value of the `Total Physical Mem Mbyte` field in the `PI` record.

### Alarm table

PFM Windows Template Alarms [MEM] 09.00

### Related reports

None

---

## Pages/sec

---

### Overview

The Pages/sec alarm monitors the rate of paging for the pages per second when page faults occurred. If the rate of paging for the pages continues to be at or above the threshold, memory might be a system bottleneck. However, if the threshold is only temporarily exceeded, the maximum allowable value being monitored might be 20.

### Primary settings

PFM - Web Console alarm property		Settings
Item	Detailed item	
Basic information	<b>Report alarm when the following damping condition is reached.</b>	Yes
	interval(s)	3
	occurrence(s) during	2
Action	SNMP	Error, Warning, Normal
Condition expression	Record	System Overview (PI)
	Field	Pages/sec
	Error condition	Pages/sec $\geq$ 5 <sup>#</sup>
	Warning condition	Pages/sec $\geq$ 4 <sup>#</sup>

#

Change the value as necessary for the environment.

### Alarm table

PFM Windows Template Alarms [MEM] 09.00

### Related reports

Reports/Windows/Operating System/Troubleshooting/Real-Time/System Overview

---

## Page Faults/sec

---

### Overview

The Page Faults/sec alarm monitors the number of page faults that occurred per second. If the number of page faults continues to be at or above the threshold, memory might be a bottleneck.

### Primary settings

PFM - Web Console alarm property		Settings
Item	Detailed item	
Basic information	<b>Report alarm when the following damping condition is reached.</b>	Yes
	<b>interval(s)</b>	3
	<b>occurrence(s) during</b>	2
Action	SNMP	Error, Warning, Normal
Condition expression	Record	System Overview (PI)
	Field	Page Faults/sec
	Error condition	Page Faults/sec >= 5 <sup>#</sup>
	Warning condition	Page Faults/sec >= 4 <sup>#</sup>

#

Change the value as necessary for the environment.

### Alarm table

PFM Windows Template Alarms [MEM] 09.00

### Related reports

Reports/Windows/Operating System/Troubleshooting/Real-Time/System Overview

---

## Logical Disk Free

---

### Overview

The Logical Disk Free alarm monitors the unused area (MB) in the entire usable disk space. If the size of unused area is too small, insufficient disk space is indicated.

*Reference note:*

To monitor a specific disk, copy this alarm and create an alarm by changing the condition expression in the ID field to `ID = name-of-monitored-logical-disk-volume`.

### Primary settings

PFM - Web Console alarm property		Settings
Item	Detailed item	
Basic information	<b>Report alarm when the following damping condition is reached.</b>	No
	<b>interval(s)</b>	0
	<b>occurrence(s) during</b>	0
Action	SNMP	Error, Warning, Normal
Condition expression 1	Record	Logical Disk Overview (PI_LOGD)
	Field	ID
	Error condition	ID <> _Total <sup>#1</sup>
	Warning condition	ID <> _Total <sup>#1</sup>
Condition expression 2	Record	Logical Disk Overview (PI_LOGD)
	Field	Free Mbytes
	Error condition	Free Mbytes < 5120 <sup>#2</sup>
	Warning condition	Free Mbytes < 10240 <sup>#2</sup>

#1

Set the name of the logical disk volume to be monitored. The value used in the table shows an example of setting a condition value that satisfies the ID field.

Logical Disk Free

#2

Change the value as necessary for the environment.

### **Alarm table**

PFM Windows Template Alarms [DSK] 09.00

### **Related reports**

Reports/Windows/Operating System/Status Reporting/Real-Time/Free Megabytes -  
Logical Drive Status

## Disk Busy %

### Overview

The Disk Busy % alarm monitors the percentage of elapsed time when the disk was busy processing a read or write request. If the percentage of elapsed time continues to be at the threshold, a disk with high load is indicated.

*Reference note:*

To monitor a specific disk, copy this alarm and create an alarm by changing the condition expression in the ID field to `ID = name-of-monitored-logical-disk-volume`.

### Primary settings

PFM - Web Console alarm property		Settings
Item	Detailed item	
Basic information	<b>Report alarm when the following damping condition is reached.</b>	Yes
	<b>interval(s)</b>	5
	<b>occurrence(s) during</b>	4
Action	SNMP	Error, Warning, Normal
Condition expression 1	Record	Logical Disk Overview (PI_LOGD)
	Field	ID
	Error condition	ID <> _Total <sup>#</sup>
	Warning condition	ID <> _Total <sup>#</sup>
Condition expression 2	Record	Logical Disk Overview (PI_LOGD)
	Field	% Disk Time
	Error condition	% Disk Time >= 90
	Warning condition	% Disk Time >= 50

#

Set the name of the logical disk volume to be monitored. The value used in the table shows an example of setting a condition value that satisfies the ID field.

Disk Busy %

## **Alarm table**

PFM Windows Template Alarms [DSK] 09.00

## **Related reports**

Reports/Windows/Operating System/Troubleshooting/Real-Time/Disk Time - Top 10 Logical Drives

---

## Logical Disk Queue

---

### Overview

The Logical Disk Queue alarm monitors the number of queued requests on a logical disk that are waiting to be processed or are currently being processed. If the number of requests continues to be at or above the threshold, logical disk congestion is indicated.

*Reference note:*

To monitor a specific disk, copy this alarm and create an alarm by changing the condition expression in the ID field to `ID = name-of-monitored-logical-disk-volume`.

### Primary settings

PFM - Web Console alarm property		Settings
Item	Detailed item	
Basic information	<b>Report alarm when the following damping condition is reached.</b>	Yes
	<b>interval(s)</b>	5
	<b>occurrence(s) during</b>	4
Action	SNMP	Error, Warning, Normal
Condition expression 1	Record	Logical Disk Overview (PI_LOGD)
	Field	ID
	Error condition	ID <> _Total <sup>#</sup>
	Warning condition	ID <> _Total <sup>#</sup>
Condition expression 2	Record	Logical Disk Overview (PI_LOGD)
	Field	Current Disk Queue Length
	Error condition	Current Disk Queue Length >= 5
	Warning condition	Current Disk Queue Length >= 3

#

Set the name of the logical disk volume to be monitored. The value used in the table shows an example of setting a condition value that satisfies the ID field.

## **Alarm table**

PFM Windows Template Alarms [DSK] 09.00

## **Related reports**

Reports/Windows/Operating System/Troubleshooting/Real-Time/Drilldown Only/  
Logical Drive Detail

---

## Physical Disk Queue

---

### Overview

The Physical Disk Queue alarm monitors the number of queued requests on the physical disk that are waiting to be processed or are currently being processed. If the number of requests continues to be at or above the threshold, physical disk congestion is indicated.

*Reference note:*

To monitor a specific disk, copy this alarm and create an alarm by changing the condition expression in the ID field to `ID = name-of-monitored-logical-disk-volume`.

### Primary settings

PFM - Web Console alarm property		Settings
Item	Detailed item	
Basic information	<b>Report alarm when the following damping condition is reached.</b>	Yes
	<b>interval(s)</b>	5
	<b>occurrence(s) during</b>	4
Action	SNMP	Error, Warning, Normal
Condition expression 1	Record	Physical Disk Overview (PI_PHYD)
	Field	ID
	Error condition	ID <> _Total <sup>#</sup>
	Warning condition	ID <> _Total <sup>#</sup>
Condition expression 2	Record	Physical Disk Overview (PI_PHYD)
	Field	Current Disk Queue Length
	Error condition	Current Disk Queue Length >= 5
	Warning condition	Current Disk Queue Length >= 3

#

Set the number of the physical disk volume to be monitored. The value used in

the table shows an example of setting a condition value that satisfies the ID field.

**Alarm table**

PFM Windows Template Alarms [DSK] 09.00

**Related reports**

None

---

## Network Received

---

### Overview

The Network Received alarm monitors the amount of data received per second over the network interface (bytes/second). Compare the number of bytes that the server receives from the network to the total bandwidth performance of the network card. If the bandwidth (amount of data that can be transferred per unit of time over the network) is equal to or greater than 50% of the number of bytes received, the network connection might be a bottleneck.

### Primary settings

PFM - Web Console alarm property		Settings
Item	Detailed item	
Basic information	<b>Report alarm when the following damping condition is reached.</b>	Yes
	<b>interval(s)</b>	5
	<b>occurrence(s) during</b>	3
Action	SNMP	Error, Warning, Normal
Condition expression	Record	Network Interface Overview (PI_NETI)
	Field	Bytes Rcvd/sec
	Error condition	Bytes Rcvd/sec >= 3000 <sup>#1</sup>
	Warning condition	Bytes Rcvd/sec >= 2048 <sup>#2</sup>

#1

Depending on the environment, set a value that is around 70% of the NIC bandwidth.

#2

Depending on the environment, set a value that is around 50% of the NIC bandwidth.

### Alarm table

PFM Windows Template Alarms [NET] 09.00

Network Received

## **Related reports**

None

---

## Process End

---

### Overview

The Process End alarm monitors process disappearance. If performance data is not collected, a process that has stopped is indicated.

### Primary settings

PFM - Web Console alarm property		Settings
Item	Detailed item	
Basic information	<b>Report alarm when the following damping condition is reached.</b>	No
	<b>interval(s)</b>	0
	<b>occurrence(s) during</b>	0
Action	SNMP	Error, Normal
Condition expression	Record	Process Detail Interval (PD_PDI)
	Field	Program
	Error condition	Program = jpcsto <sup>#</sup>
	Warning condition	Program = jpcsto <sup>#</sup>

#

Set the name of the process to be monitored. The value used in the table shows an example of setting the process name for the Agent Store service. Note that there is no abnormal condition or warning condition because this alarm only monitors a value.

### Alarm table

PFM Windows Template Alarms [PS] 09.00

### Related reports

Reports/Windows/Operating System/Troubleshooting/Real-Time/Drilldown Only/  
Process Detail

---

## Process Alive

---

### Overview

The Process Alive alarm monitors the generation of processes that belong to a workgroup.

Use the collection data addition utility to specify monitoring of processes as follows.

*Table 4-2: Settings in the collection data addition utility*

Items in the collection data addition utility <sup>#1</sup>	Description <sup>#3</sup>
Match all program name, user name, and group name conditions (AND)	Selected
Workgroup name	workgroup
Program name <sup>#2</sup>	yyy zzz
User name	--
Group name	--

Legend:

--: Not specified.

#1

Execute the collection data addition utility in an environment in which PFM - Agent for Platform has been installed. For details about how to specify the settings for collecting information, see *3.2.4 Settings for collecting workgroup information*.

#2

For the program name, specify either of the following:

- An instance of the `Process` object displayed from **System Monitor** by choosing **Administrative Tools** from the Windows **Start** menu and then **Performance and System Monitor**
- Value of the `Program` field of the PD record.

#3

In this example, processes named `yyy` and `zzz` are set in a workgroup.

## Primary settings

PFM - Web Console alarm property		Settings
Item	Detailed item	
Basic information	<b>Report alarm when the following damping condition is reached.</b>	No
	<b>interval(s)</b>	0
	<b>occurrence(s) during</b>	0
Action	SNMP	Error, Warning, Normal
Condition expression 1	Record	Workgroup Summary (PI_WGRP)
	Field	Process Count
	Error condition	Process Count > 0
	Warning condition	Process Count > 0
Condition expression 2	Record	Workgroup Summary (PI_WGRP)
	Field	Workgroup
	Error condition	Workgroup = workgroup <sup>#</sup>
	Warning condition	Workgroup = workgroup <sup>#</sup>

#

Set the name of the workgroup to be monitored. This name must be set in the collection data addition utility.

### Alarm table

PFM Windows Template Alarms [PS] 09.00

### Related reports

Reports/Windows/Operating System/Troubleshooting/Real-Time/Drilldown Only/  
Process Detail

---

## Service(Service Nm)

---

### Overview

The Service(Service Nm) alarm monitors the service name used in the service control manager database, and the service status during data collection. If the status of the application service (process) is not RUNNING, a service that has stopped is indicated.

### Primary settings

PFM - Web Console alarm property		Settings
Item	Detailed item	
Basic information	<b>Report alarm when the following damping condition is reached.</b>	No
	<b>interval(s)</b>	0
	<b>occurrence(s) during</b>	0
Action	SNMP	Error, Warning, Normal
Condition expression 1	Record	Service Process Detail (PD_SVC)
	Field	Service Name
	Error condition	Service Name = JP1PCAGT_TS <sup>#</sup>
	Warning condition	Service Name = JP1PCAGT_TS <sup>#</sup>
Condition expression 2	Record	Service Process Detail (PD_SVC)
	Field	State
	Error condition	State <> RUNNING
	Warning condition	State <> RUNNING

#

Set the name of the service to be monitored. The value used in the table shows an example of setting the service name for the Agent Store service.

### Alarm table

PFM Windows Template Alarms [PS] 09.00

## Related reports

None

---

## Service(Display Nm)

---

### Overview

The Service(Display Nm) alarm monitors the name used by the user interface program to identify the service, and the service status during data collection. If the status of the application service (process) is not RUNNING, a service that has stopped is indicated.

### Primary settings

PFM - Web Console alarm property		Settings
Item	Detailed item	
Basic information	<b>Report alarm when the following damping condition is reached.</b>	No
	<b>interval(s)</b>	0
	<b>occurrence(s) during</b>	0
Action	SNMP	Error, Warning, Normal
Condition expression 1	Record	Service Process Detail (PD_SVC)
	Field	Display Name
	Error condition	Display Name = PFM - Agent Store for Windows <sup>#</sup>
	Warning condition	Display Name = PFM - Agent Store for Windows <sup>#</sup>
Condition expression 2	Record	Service Process Detail (PD_SVC)
	Field	State
	Error condition	State <> RUNNING
	Warning condition	State <> RUNNING

#

Set the name used by the user interface programs to identify the service. The value used in the table shows an example of setting the name of the Agent Store service used by the user interface program.

### Alarm table

PFM Windows Template Alarms [PS] 09.00

## Related reports

None

---

## Event Log(all)

---

### Overview

The Event Log(all) alarm monitors all errors and warnings output to the event log. Note that you can use the collection data addition utility to specify the event logs as the target for data collection. For details about the settings required for using the collection data addition utility to collect event log data, see *3.2.3 Settings for collecting event log information*.

*Reference note:*

This alarm terminates alarm evaluation when at least one abnormal or warning value is detected. Accordingly, not all collected data is evaluated. Because each log in the event log has specific information that is not related to previous evaluation, we recommend that all collected data be evaluated.

To evaluate all data, copy this alarm and create an alarm with **Enable alarm**, **Always notify**, and **Evaluate all data** selected in the PFM - Web Console alarm properties. Then use this alarm to perform monitoring.

### Primary settings

PFM - Web Console alarm property		Settings
Item	Detailed item	
Basic information	<b>Report alarm when the following damping condition is reached.</b>	Yes
	<b>interval(s)</b>	1
	<b>occurrence(s) during</b>	1
Action	SNMP	Error, Warning, Normal
Condition expression 1	Record	Event Log (PD_ELOG)
	Field	Log Name
	Error condition	Log Name <> dummy <sup>#1</sup>
	Warning condition	Log Name <> dummy <sup>#1</sup>
Condition expression 2	Record	Event Log (PD_ELOG)
	Field	Event Type Name

PFM - Web Console alarm property		Settings
Item	Detailed item	
	Error condition	Event Type Name = Error
	Warning condition	Event Type Name = Warning
Condition expression 3	Record	Event Log (PD_ELOG)
	Field	Source Name
	Error condition	Source Name <> dummy <sup>#2</sup>
	Warning condition	Source Name <> dummy <sup>#2</sup>
Condition expression 4	Record	Event Log (PD_ELOG)
	Field	Event ID
	Error condition	Event ID <> 0
	Warning condition	Event ID <> 0
Condition expression 5	Record	Event Log (PD_ELOG)
	Field	Description
	Error condition	Description <> dummy <sup>#3</sup>
	Warning condition	Description <> dummy <sup>#3</sup>

#1

Set the type of event log to be monitored. The value used in the table shows an example of setting a condition value satisfies the `Log Name` field.

#2

Set the name of the source for which entries were generated. The value used in the table shows an example of setting a condition value that satisfies the `Source Name` field.

#3

Set the description of the event log. The value used in the table shows an example of setting a condition value that satisfies the `Description` field.

## Alarm table

PFM Windows Template Alarms [LOG] 09.00

Event Log(all)

## **Related reports**

None

---

## Event Log(System)

---

### Overview

The Event Log(System) alarm monitors MSCS errors and warnings output to the event log.

Note that you can use the collection data addition utility to specify the event logs as the target for data collection. For details about the settings required for using the collection data addition utility to collect event log data, see *3.2.3 Settings for collecting event log information*.

#### *Reference note:*

This alarm terminates alarm evaluation when at least one abnormal or warning value is detected. Accordingly, not all collected data is evaluated. Because each log in the event log has specific information that is not related to previous evaluation, we recommend that all collected data be evaluated.

To evaluate all data, copy this alarm and create an alarm with **Enable alarm**, **Always notify**, and **Evaluate all data** selected in the PFM - Web Console alarm properties. Then use this alarm to perform monitoring.

### Primary settings

PFM - Web Console alarm property		Settings
Item	Detailed item	
Basic information	<b>Report alarm when the following damping condition is reached.</b>	Yes
	<b>interval(s)</b>	1
	<b>occurrence(s) during</b>	1
Action	SNMP	Error, Warning, Normal
Condition expression 1	Record	Event Log (PD_ELOG)
	Field	Log Name
	Error condition	Log Name = System
	Warning condition	Log Name = System
Condition expression 2	Record	Event Log (PD_ELOG)
	Field	Event Type Name

PFM - Web Console alarm property		Settings
Item	Detailed item	
	Error condition	Event Type Name = Error
	Warning condition	Event Type Name = Warning
Condition expression 3	Record	Event Log (PD_ELOG)
	Field	Source Name
	Error condition	Source Name = ClusSvc
	Warning condition	Source Name = ClusSvc
Condition expression 4	Record	Event Log (PD_ELOG)
	Field	Event ID
	Error condition	Event ID <> 0
	Warning condition	Event ID <> 0
Condition expression 5	Record	Event Log (PD_ELOG)
	Field	Description
	Error condition	Description <> dummy#
	Warning condition	Description <> dummy#

#

Set the description of the event log. The value used in the table shows an example of setting a condition value that satisfies the `Description` field.

### Alarm table

PFM Windows Template Alarms [LOG] 09.00

### Related reports

None

---

## Format of report explanations

---

This section explains report formats. Reports are listed in alphabetical order.

### Report name

Indicates the report name of the monitoring template.

A report whose name contains (Multi-Agent) is a report that shows information on multiple instances.

A report whose name does not contain (Multi-Agent) is a report that shows information on a single instance.

### Overview

Provides an overview of the information that can be displayed in this report.

### Storage destination

Indicates the storage destination of this report.

### Record

Indicates the record that stores the performance data used by this report. To display a historical report, you must specify in advance that the record shown in this column be collected. Before displaying a report, use the Agents window in PFM - Web Console to display the agent properties, and make sure that Log = Yes is set for this record. This setting is not required for a real-time report.

### Fields

The record fields used by this report are explained using a table.

In the tables, #1 to #3 indicate the following:

#1

The value in this field is the latest monitored value returned by the OS during collection.

#2

When this field is summarized in a historical report, the last collected value is displayed.

#3

This field is added only when a record is recorded in the Store database. For details about the field that is added only when a record is recorded in the Store database, see 5. *Records*.

The following methods are used for collecting performance data for the individual fields:

- Determined from an average or percentage using the current collected data and the data collected during the previous interval
- Determined from the current collected data only (including values accumulated inside the OS. Corresponds to those indicated by #1 in the table)
- Determined from data in other fields (See the data source in the field table of each record in 5. *Records*.)

Unless otherwise specified, the value collected during the data collection interval is used.

In a historical report, the following types of values are displayed when a record of the  $\text{PI}$  record type is summarized with the report interval set to a value other than *minute*:

- Average value for the summarization interval
- The last collected value
- A total value
- The minimum value
- The maximum value

Unless otherwise specified, the average value for the summarization interval is displayed.

### **Drilldown report (report level)**

The monitoring template report associated with this report is explained with the use of a table. To display this drilldown report, from the Drilldown Report pull-down menu in PFM - Web Console's Report window, select the applicable drilldown report name and click **Display Reports**. Note that some reports do not have a drilldown report.

### **Drilldown report (field level)**

The monitoring template report associated with the fields of this report is explained with the use of a table. To display this drilldown report, click a graph, list, or table in PFM - Web Console's Report window. For a historical report, you can display a report with finer time intervals by displaying a drilldown report from a time item. Note that some reports do not have a drilldown report.

For details about a drilldown report, see the chapter explaining creation of reports for operation analysis in the manual *Job Management Partner 1/Performance Management User's Guide*.

---

## Organization of report folders

---

The organization of PFM - Agent for Platform's report folders is described below. < > indicates a folder name.

```

<Windows>
  +-- <Operating System>
    +-- <Monthly Trend>
      |   +-- CPU Trend
      |   +-- CPU Trend (Multi-Agent)
      |   +-- Memory Available Trend (Multi-Agent)
      |   +-- Process Trend
      |   +-- Server Activity Summary Trend (Multi-Agent)
      |   +-- Server Sessions Trend (Multi-Agent)
    +-- <Status Reporting>
      +-- <Daily Trend>
        |   +-- Access Failure Status
        |   +-- CPU Status (Multi-Agent)
        |   +-- Memory Paging Status (Multi-Agent)
        |   +-- OS Memory Usage Status
        |   +-- Server Activity Summary (Multi-Agent)
        |   +-- Workload Status (Multi-Agent)
      +-- <Real-Time>
        +-- Access Failure Status
        +-- Free Megabytes - Logical Drive Status
        +-- OS Memory Usage Status
        +-- System Utilization Status
        +-- Workload Status
    +-- <Troubleshooting>
      +-- <Real-Time>
        |   +-- CPU Usage - Top 10 Processes
        |   +-- Disk Time - Top 10 Logical Drives
        |   +-- Free Space - Top 10 Logical Drives
        |   +-- Free Space - Low 10 Logical Drives
        |   +-- Network Segment Summary#
        |   +-- Page Faults - Top 10 Processes
        |   +-- Server Activity Summary
        |   +-- System Overview
        |   +-- <Drilldown Only>
        |       +-- Logical Drive Detail
        |       +-- Network Segment Detail#
        |       +-- Process Detail
        |       +-- Server Activity Detail
      +-- <Recent Past>
        +-- CPU Usage Summary
        +-- File System I/O Summary
        +-- Memory Paging
  
```

```
+-- Server Activity Summary
+-- System Memory Detail
+-- System Overview
```

#

Indicates a reserved report that cannot be used.

The individual folders are explained below.

■ Monthly Trend folder

This folder stores the historical report that shows information that is summarized on a daily basis for the last month. It is used for analyzing the system trend for the month.

■ Status Reporting folder

This folder stores reports that show information that is summarized on a daily or weekly basis. It is used for checking the system's overall status.

• Daily Trend folder

This folder stores the historical report that shows information that is summarized on an hourly basis for the last 24 hours. It is used for checking the system status daily.

• Real-Time folder

This folder stores the real-time report for checking the system status.

■ Troubleshooting folder

This folder stores reports that show information that is useful for troubleshooting. It is used for investigating a problem cause when a problem occurs in the system.

• Real-Time folder

This folder stores the real-time report for checking the current system status.

• Recent Past folder

This folder stores the historical report that shows information that is summarized on a minute-by-minute basis for the last hour.

Additionally, the folders described below are located below the folders previously described. Which of the following folders is provided depends on the higher-order folder:

■ Advanced folder

This folder stores reports that use records that are set to `Log = No` by default. To display the reports in this folder, you must use PFM - Web Console to specify the setting for the record being used to `Log = Yes`.

- Drilldown Only folder

This folder stores reports that are displayed as drilldown reports (field level). It is used for displaying detailed information related to the fields of the report.

---

## List of reports

---

The table below lists the reports defined in the monitoring template in alphabetical order.

*Table 4-3: List of reports*

<b>Category</b>	<b>Report name</b>	<b>Information displayed</b>
System	<i>File System I/O Summary</i>	Summary of I/O usage over the last hour (on a minute-by-minute basis)
	<i>Process Trend</i>	Number of processes executed in the system in the last month (on a daily basis)
	<i>System Overview</i> (real-time report on the system overview)	Overview of the entire system
	<i>System Overview</i> (historical report on the system overview)	System overview over the last hour (on a minute-by-minute basis)
	<i>Workload Status</i>	System's workload-related data
	<i>Workload Status (Multi-Agent)</i>	Summary of workload-related data on multiple systems over the last 24 hours (on an hourly basis)
Disk	<i>Disk Time - Top 10 Logical Drives</i>	Top 10 logical drives with the highest disk usage
	<i>Free Megabytes - Logical Drive Status</i>	Information related to the available area in the logical disk
	<i>Free Space - Low 10 Logical Drives</i>	Top 10 logical drives with the least amount of free space
	<i>Free Space - Top 10 Logical Drives</i>	Top 10 logical drives with the largest free space
	<i>Logical Drive Detail</i>	Details on a specific logical drive
Network	<i>Access Failure Status</i> (real-time report on system access errors)	Number of errors that occurred during system access
	<i>Access Failure Status</i> (historical report on system access errors)	Cumulative number of errors that occurred during system access over the last 24 hours (on an hourly basis)
	<i>Server Activity Detail</i>	Information on the communication status between networks
	<i>Server Activity Summary (Multi-Agent)</i>	Summary of the communication status between networks for multiple agents over the last 24 hours (on an hourly basis)

Category	Report name	Information displayed
	<i>Server Activity Summary</i> (real-time report on information on the communication status between networks)	Information on the communication status between networks
	<i>Server Activity Summary</i> (historical report on information on the communication status between networks)	Communication status between networks over the last hour (on a minute-by-minute basis)
	<i>Server Activity Summary Trend (Multi-Agent)</i>	Operation status of the data exchanged between the server of multiple systems and the network over the last month (on a daily basis)
	<i>Server Sessions Trend (Multi-Agent)</i>	Number of active sessions on the server of multiple systems over the last month (on a daily basis)
	<i>System Utilization Status</i>	Status of activities between the server and the network
Process	<i>CPU Usage - Top 10 Processes</i>	Top 10 processes with the highest CPU usage
	<i>Process Detail</i>	Details on the system resource consumption by a specific process
	<i>Page Faults - Top 10 Processes</i>	Top 10 processes with the highest page fault frequency
Processor	<i>CPU Status (Multi-Agent)</i>	Summary of CPU usage by multiple agents over the last 24 hours (on an hourly basis)
	<i>CPU Trend</i>	CPU usage in the user mode and the privileged mode over the last month (on a daily basis)
	<i>CPU Trend (Multi-Agent)</i>	CPU usage by multiple systems over the last month (on a daily basis)
	<i>CPU Usage Summary</i>	Summary of CPU usage over the last hour (on a minute-by-minute basis)
Memory	<i>Memory Available Trend (Multi-Agent)</i>	Available physical memory space on multiple systems over the last month (on a daily basis)
	<i>Memory Paging</i>	Paging frequency over the last hour (on a minute-by-minute basis)
	<i>Memory Paging Status (Multi-Agent)</i>	Summary of the memory paging faults that occurred involving multiple agents over the last 24 hours (on an hourly basis)

List of reports

<b>Category</b>	<b>Report name</b>	<b>Information displayed</b>
	<i>OS Memory Usage Status</i> (real-time report on memory usage)	Available physical memory size
	<i>OS Memory Usage Status</i> (historical report on memory usage)	Summary of available physical memory size over the last 24 hours (on an hourly basis)
	<i>System Memory Detail</i>	Details on the system's physical memory over the last hour (on a minute-by-minute basis)
Reserved report	<i>Network Segment Detail</i>	Reserved reports that cannot be used.
	<i>Network Segment Summary</i>	

---

## Access Failure Status (real-time report on system access errors)

---

### Overview

The Access Failure Status report shows the number of system access errors on a real-time basis. It is displayed as a line graph.

### Storage destination

Reports/Windows/Operating System/Status Reporting/Real-Time/

### Record

System Overview (PI)

### Fields

Field name	Explanation
Errors Access Permissions	The number of times the <code>STATUS_ACCESS_DENIED</code> error occurred during attempts to open a file because the user (as a client) is trying to access a file that is not properly protected following the OS startup. <sup>#1</sup>
Errors Granted Access	The number of times access was denied because a user without file access permission was trying to access a normally opened file following the OS startup. <sup>#1</sup>
Errors Logon	The number of times server logon attempts failed following the OS startup. Indicates whether a password-guessing program designed to break the server security is being used. <sup>#1</sup>

---

## Access Failure Status (historical report on system access errors)

---

### Overview

The Access Failure Status report shows the cumulative number of errors that occurred during system access over the last 24 hours on an hourly basis. It is displayed as a line graph.

### Storage destination

Reports/Windows/Operating System/Status Reporting/Daily Trend/

### Record

System Overview (PI)

### Fields

Field name	Explanation
Errors Access Permissions	The number of times the <code>STATUS_ACCESS_DENIED</code> error occurred during attempts to open a file because the user (as a client) is trying to access a file that is not properly protected following the OS startup. <sup>#1</sup>
Errors Granted Access	The number of times access was denied because a user without file access permission was trying to access a normally opened file following the OS startup. <sup>#1</sup>
Errors Logon	The number of times server logon attempts failed following the OS startup. Indicates whether a password-guessing program designed to break the server security is being used. <sup>#1</sup>

---

## CPU Status (Multi-Agent)

---

### Overview

The CPU Status (Multi-Agent) report shows the summary of CPU usage by multiple agents over the last 24 hours on an hourly basis. It is displayed as a table and a line graph.

### Storage destination

Reports/Windows/Operating System/Status Reporting/Daily Trend/

### Record

System Overview (PI)

### Fields

Field name	Explanation
% Total Interrupt Time	Processor usage (%) for processing hardware (devices that cause an interrupt, such as system clock, mouse, disk driver, data communication line, NIC, and other peripheral devices) interrupts. The maximum value that is displayed is 100, even in a multi-processor environment.
Agent Instance <sup>#3</sup>	PFM - Agent name.
Context Switches/sec	Number of context switches (when the executing thread arbitrarily releases the processor and is interrupted by a thread with higher priority, the mode is switched between the user mode and the privileged mode to use either the executive or subsystem service) in the processor that were caused by all process threads (switches/second).
CPU %	Processor usage (%). Percentage of time the processor spent executing non-idle threads. The maximum value that is displayed is 100, even in a multi-processor environment.
Privileged CPU %	Processor usage in the privileged mode (%). Percentage of time the processor spent executing non-idle threads in the privileged mode. The maximum value that is displayed is 100, even in a multi-processor environment.
Processor Queue Length	Number of threads in the processor queue that are ready to be executed. Normally, if the queue length continues to exceed 2, it indicates processor congestion. <sup>#1</sup>
System Calls/sec	Number of times the processes being executed by the processor invoked a system service routine (calls/second).

CPU Status (Multi-Agent)

<b>Field name</b>	<b>Explanation</b>
User CPU %	Processor usage in the user mode (%). Percentage of time the processor spent executing non-idle threads in the user mode. The maximum value that is displayed is 100, even in a multi-processor environment.

---

## CPU Trend

---

### Overview

The CPU Trend report shows the CPU usage in the user mode and the privileged mode over the last month on a daily basis. It is displayed as a line graph.

### Storage destination

Reports/Windows/Operating System/Monthly Trend/

### Record

System Overview (PI)

### Fields

Field name	Explanation
Privileged CPU %	Processor usage in the privileged mode (%). Percentage of time the processor spent executing non-idle threads in the privileged mode. The maximum value that is displayed is 100, even in a multi-processor environment.
User CPU %	Processor usage in the user mode (%). Percentage of time the processor spent executing non-idle threads in the user mode. The maximum value that is displayed is 100, even in a multi-processor environment.

---

## CPU Trend (Multi-Agent)

---

### Overview

The CPU Trend (Multi-Agent) report shows the summary of CPU usage by multiple systems over the last 24 hours on an hourly basis. It is displayed as a line graph.

### Storage destination

Reports/Windows/Operating System/Monthly Trend/

### Record

System Overview (PI)

### Field

Field name	Explanation
CPU %	Processor usage (%). Percentage of time the processor spent executing non-idle threads. The maximum value that is displayed is 100, even in a multi-processor environment.

---

## CPU Usage - Top 10 Processes

---

### Overview

The CPU Usage - Top 10 Processes report shows the top 10 processes with the highest CPU usage on a real-time basis. It is displayed as an aggregated horizontal bar graph.

### Storage destination

Reports/Windows/Operating System/Troubleshooting/Real-Time/

### Record

Process Detail Interval (PD\_PDI)

### Fields

Field name	Explanation
CPU %	Percentage of the processor time used by processes (%). In a multi-processor environment, usage is displayed with <i>number-of-processors</i> x 100% as the maximum value. To display the Process Detail report, click this field.
PID	Process ID. Unique ID of the process being executed.
Program	Executing program name.

### Drilldown report (field level)

Report name	Explanation
Process Detail	Shows the details of the system resources used by the selected process. To display this report, click the <b>CPU %</b> field.

---

## CPU Usage Summary

---

### Overview

The CPU Usage Summary report shows the summary of CPU usage over the last hour on a minute-by-minute basis. It is displayed as a table and a line graph.

### Storage destination

Reports/Windows/Operating System/Troubleshooting/Recent Past/

### Record

System Overview (PI)

### Fields

Field name	Explanation
% Total Interrupt Time	Processor usage (%) for processing hardware (devices that cause an interrupt, such as system clock, mouse, disk driver, data communication line, NIC, and other peripheral devices) interrupts. The maximum value that is displayed is 100, even in a multi-processor environment.
Context Switches/sec	Number of context switches (when the executing thread arbitrarily releases the processor and is interrupted by a thread with higher priority, the mode is switched between the user mode and the privileged mode to use either the executive or subsystem service) in the processor that were caused by all process threads (switches/second).
CPU %	Processor usage (%). Percentage of time the processor spent executing non-idle threads. The maximum value that is displayed is 100, even in a multi-processor environment.
Privileged CPU %	Processor usage in the privileged mode (%). Percentage of time the processor spent executing non-idle threads in the privileged mode. The maximum value that is displayed is 100, even in a multi-processor environment. This field is a configuration element of the CPU % field.
Processor Queue Length	Number of threads in the processor queue that are ready to be executed. Normally, if the queue length continues to exceed 2, it indicates processor congestion. <sup>#1</sup>
System Calls/sec	Number of times the processes being executed by the processor invoked a system service routine (calls/second).

<b>Field name</b>	<b>Explanation</b>
Total Interrupts/sec	<p>Number of hardware (devices that cause an interrupt, such as system clock, mouse, disk driver, data communication line, NIC, and other peripheral devices) interrupts that the processor received and processed (interrupts/second).</p> <p>DPC (delay procedure call) interrupts are not included. Normally, if the value in this field has increased significantly when there is no system activity, it indicates a hardware problem, such as presence of a slow device.</p>
User CPU %	<p>Processor usage in the user mode (%). Percentage of time the processor spent executing non-idle threads in the user mode. The maximum value that is displayed is 100, even in a multi-processor environment.</p> <p>This field is a configuration element of the CPU % field.</p>

---

## Disk Time - Top 10 Logical Drives

---

### Overview

The Disk Time - Top 10 Logical Drives report shows the top 10 logical drives with the highest disk usage on a real-time basis. It is displayed as an aggregated horizontal bar graph.

### Storage destination

Reports/Windows/Operating System/Troubleshooting/Real-Time/

### Record

Logical Disk Overview (PI\_LOGD)

### Fields

Field name	Explanation
% Disk Time	Percentage of time the disk was busy when a read or write request was issued (%). Normally, if this value continues to be close to 100%, it indicates heavy use of the disk. To display the Logical Drive Detail report, click this field.
ID	Logical disk volume name. Example: C: or D:

### Drilldown report (field level)

Report name	Explanation
Logical Drive Detail	Shows the details on the selected logical drive. To display this report, click the <b>% Disk Time</b> field.

---

## File System I/O Summary

---

### Overview

The File System I/O Summary report shows the summary of I/O usage over the last hour on a minute-by-minute basis. It is displayed as a table and a line graph.

### Storage destination

Reports/Windows/Operating System/Troubleshooting/Recent Past/

### Record

System Overview (PI)

### Fields

Field name	Explanation
File Control Ops/sec	Number of times operations other than file system data reading or writing occurred in the processor (operations/second).
File Data Ops/sec	Number of times file system data reading or writing operations occurred in the processor (operations/second).
File Read Ops/sec	Number of times file system data reading operations occurred in the processor (operations/second).
File Write Ops/sec	Number of times file system data writing operations occurred in the processor (operations/second).
Page Reads/sec	Rate of page-in operations when page faults occurred (operations/second)
Page Writes/sec	Rate of page-out operations when page faults occurred (operations/second)
Pages Input/sec	Rate of paging-in for the pages when page faults occurred (pages/second)
Pages Output/sec	Rate of paging-out for the pages when page faults occurred (pages/second)

---

## Free Megabytes - Logical Drive Status

---

### Overview

The Free Megabytes - Logical Drive Status report shows information related to the available area on the logical disk on a real-time basis. It is displayed as a table and an aggregated horizontal bar graph.

### Storage destination

Reports/Windows/Operating System/Status Reporting/Real-Time/

### Record

Logical Disk Overview (PI\_LOGD)

### Fields

Field name	Explanation
ID	Logical disk volume name. Example: C: or D:
% Free Space	Free disk space as a percentage of the total usable area (%). <sup>#1</sup>
Drive Type	Disk type. The following values are valid: <ul style="list-style-type: none"> <li>• FIXED</li> <li>• NO ROOT DIR</li> <li>• REMOVABLE</li> <li>• DRIVE UNKNOWN</li> </ul>
Free Mbytes	Free disk space as part of the total usable area (MB). <sup>#1</sup>
Page File Size Mbytes	Physical size of the valid paging files allocated to the drive (MB). <sup>#1, #2</sup>
Total Size Mbytes	Disk size (MB). <sup>#1, #2</sup>

---

## Free Space - Low 10 Logical Drives

---

### Overview

The Free Space - Low 10 Logical Drives report shows the top 10 logical drives with the least amount of free space. It is displayed as an aggregated horizontal bar graph.

### Storage destination

Reports/Windows/Operating System/Troubleshooting/Real-Time/

### Record

Logical Disk Overview (PI\_LOGD)

### Fields

Field name	Explanation
% Free Space	Free disk space as a percentage of the total usable area (%). <sup>#1</sup> To display the Logical Drive Detail report, click this field.
ID	Logical disk volume name. Example: C: or D:

### Drilldown report (field level)

Report name	Explanation
Logical Drive Detail	Shows the details of the selected logical drive. To display this report, click the % <b>Free Space</b> field.

---

## Free Space - Top 10 Logical Drives

---

### Overview

The Free Space - Top 10 Logical Drives report shows the top 10 logical drives with the largest amount of free space. It is displayed as an aggregated horizontal bar graph.

### Storage destination

Reports/Windows/Operating System/Troubleshooting/Real-Time/

### Record

Logical Disk Overview (PI\_LOGD)

### Fields

Field name	Explanation
% Free Space	Free disk space as a percentage of the total usable area (%). <sup>#1</sup> To display the Logical Drive Detail report, click this field.
ID	Logical disk volume name. Example: C: or D:

### Drilldown report (field level)

Report name	Explanation
Logical Drive Detail	Shows the details of the selected logical drive. To display this report, click the <b>% Free Space</b> field.

---

## Logical Drive Detail

---

### Overview

The Logical Drive Detail report shows the details on a specific logical drive. It is displayed as a list. This is a drilldown report.

### Storage destination

Reports/Windows/Operating System/Troubleshooting/Real-Time/Drilldown Only/

### Record

Logical Disk Overview (PI\_LOGD)

### Fields

Field name	Explanation
% Disk Read Time	Percentage of time the disk was busy when a read request was processed (%).
% Disk Write Time	Percentage of time the disk was busy when a write request was processed (%).
% Free Space	Free disk space as a percentage of the total usable area (%). <sup>#1</sup>
Avg Disk Bytes/Read	Average number of bytes transferred from the disk during read operations (bytes/process).
Avg Disk Bytes/Write	Average number of bytes transferred to the disk during write operations (bytes/process).
Avg Disk Read Queue Length	Average number of read requests that have entered the disk queue.
Avg Disk Secs/Read	Average time for reading data from the disk (seconds).
Avg Disk Secs/Write	Average time for writing data to the disk (seconds).
Avg Disk Write Queue Length	Average number of write requests that have entered the disk queue.
Current Disk Queue Length	Number of requests remaining in the disk that are waiting to be processed or currently being processed. Normally if the queue length continues to exceed 2, it indicates processor congestion. <sup>#1</sup>
Disk Read Bytes/sec	Speed at which data is transferred to the disk during read operation (bytes/second).

Logical Drive Detail

Field name	Explanation
Disk Reads/sec	Disk read processing speed (bytes/second).
Disk Write Bytes/sec	Speed at which data is transferred to the disk during write operation (bytes/second).
Disk Writes/sec	Disk write processing speed (bytes/second).
Disk Xfers/sec	Disk read and write processing speed (bytes/second).
Drive Type	Disk type. The following values are valid: <ul style="list-style-type: none"> <li>• FIXED</li> <li>• NO ROOT DIR</li> <li>• REMOVABLE</li> <li>• DRIVE UNKNOWN</li> </ul>
Free Mbytes	Free disk space as part of the total usable area (MB). <sup>#1</sup>
ID	Logical disk volume name. Example: C: or D:
Page File Size Mbytes	Physical size of the valid paging files allocated to the drive (MB). <sup>#1, #2</sup>
Total Size Mbytes	Disk size (MB). <sup>#1, #2</sup>

---

## Memory Available Trend (Multi-Agent)

---

### Overview

The Memory Available Trend (Multi-Agent) report shows the available physical memory space on multiple systems over the last month on a daily basis. It is displayed as a line graph.

### Storage destination

Reports/Windows/Operating System/Monthly Trend/

### Record

System Overview (PI)

### Field

Field name	Explanation
Available Mbytes	Available size in the physical memory area (MB). The combined total of zero memory, free memory, and standby memory (cached) that can be immediately allocated to a process or be used by the system. Normally, if this value continues to be less than 5% of the value in the Total Physical Memory Mbytes field, it indicates that excessive paging is occurring. <sup>#1</sup>

---

## Memory Paging

---

### Overview

The Memory Paging report shows the paging frequency over the last hour on a minute-by-minute basis. It is displayed as a table and a line graph.

### Storage destination

Reports/Windows/Operating System/Troubleshooting/Recent Past/

### Record

System Overview (PI)

### Fields

Field name	Explanation
Page Faults/sec	Number of page faults that occurred (faults/second). Normally, if this value continues to exceed 5, it indicates a memory bottleneck.
Page Reads/sec	Rate of page-in operations when page faults occurred (operations/second)
Page Writes/sec	Rate of page-out operations when page faults occurred (operations/second)
Pages Input/sec	Rate of paging-in for the pages when page faults occurred (pages/second)
Pages Output/sec	Rate of paging-out for the pages when page faults occurred (pages/second)
Transition Faults/sec	Number of times paging did not occur because a page that was being used by another process that shares the page or a page located in an updated page list or standby list was recovered when a paging fault occurred (faults/second).

---

## Memory Paging Status (Multi-Agent)

---

### Overview

The Memory Paging Status (Multi-Agent) report shows the summary of the memory paging faults that occurred involving multiple agents over the last 24 hours on an hourly basis. It is displayed as a table and a line graph.

### Storage destination

Reports/Windows/Operating System/Status Reporting/Daily Trend/

### Record

System Overview (PI)

### Fields

Field name	Explanation
Agent Instance <sup>#3</sup>	PFM - Agent name.
Page Faults/sec	Number of page faults that occurred (faults/second). Normally, if this value continues to exceed 5, it indicates a memory bottleneck.
Page Reads/sec	Rate of page-in operations when page faults occurred (operations/second)
Page Writes/sec	Rate of page-out operations when page faults occurred (operations/second)
Pages Input/sec	Rate of paging-in for the pages when page faults occurred (pages/second)
Pages Output/sec	Rate of paging-out for the pages when page faults occurred (pages/second)
Pages/sec	Rate of paging for the pages when page faults occurred (pages/second). The total of the values in the Pages Input/sec field and Pages Output/sec field. Normally, if this value continues to exceed 5, memory may have become a system bottleneck.
Transition Faults/sec	Number of times paging did not occur because a page that was being used by another process that shares the page or a page located in an updated page list or standby list was recovered when a paging fault occurred (faults/second).

---

## OS Memory Usage Status (real-time report on memory usage)

---

### Overview

The OS Memory Usage Status report shows the available physical memory size. It is displayed as a list and a line graph.

### Storage destination

Reports/Windows/Operating System/Status Reporting/Real-Time/

### Record

System Overview (PI)

### Fields

Field name	Explanation
Available Mbytes	Available size in the physical memory area (MB). The combined total of zero memory, free memory, and standby memory (cached) that can be immediately allocated to a process or be used by the system. Normally, if this value continues to be less than 5% of the value in the Total Physical Memory Mbytes field, it indicates that excessive paging is occurring. <sup>#1</sup>
Cache Faults/sec	Number of page faults that occurred in file system caching (faults/second).
Cache Mbytes	Size of the file system cache being used (MB). <sup>#1</sup>
Page Faults/sec	Number of page faults that occurred (faults/second). Normally, if this value continues to exceed 5, it indicates a memory bottleneck.
Pages/sec	Rate of paging for the pages when page faults occurred (pages/second). The total of the values in the Pages Input/sec field and Pages Output/sec field. Normally, if this value continues to exceed 5, memory may have become a system bottleneck.

---

## OS Memory Usage Status (historical report on memory usage)

---

### Overview

The OS Memory Usage Status report shows the summary of available physical memory size over the last 24 hours on an hourly basis. It is displayed as a table and a line graph.

### Storage destination

Reports/Windows/Operating System/Status Reporting/Daily Trend/

### Record

System Overview (PI)

### Fields

Field name	Explanation
Available Mbytes	Available size in the physical memory area (MB). The combined total of zero memory, free memory, and standby memory (cached) that can be immediately allocated to a process or be used by the system. Normally, if this value continues to be less than 5% of the value in the Total Physical Memory Mbytes field, it indicates that excessive paging is occurring. <sup>#1</sup>
Cache Faults/sec	Number of page faults that occurred in file system caching (faults/second).
Cache Mbytes	Size of the file system cache being used (MB). <sup>#1</sup>
Page Faults/sec	Number of page faults that occurred (faults/second). Normally, if this value continues to exceed 5, it indicates a memory bottleneck.
Pages/sec	Rate of paging for the pages when page faults occurred (pages/second). The total of the values in the Pages Input/sec field and Pages Output/sec field. Normally, if this value continues to exceed 5, memory may have become a system bottleneck.

---

## Page Faults - Top 10 Processes

---

### Overview

The Page Faults - Top 10 Processes report shows the top 10 processes with the highest page fault frequency on a real-time basis. It is displayed as an aggregated horizontal bar graph.

### Storage destination

Reports/Windows/Operating System/Troubleshooting/Real-Time/

### Record

Process Detail Interval (PD\_PDI)

### Fields

Field name	Explanation
Page Faults/sec	Number of page faults that occurred (faults/second). To display the Process Detail report, click this field.
PID	Process ID. Unique ID of the process being executed.
Program	Executed program name.

### Drilldown report (field level)

Report name	Explanation
Process Detail	Shows the details of the system resources used by the selected process. To display this report, click the <b>Page Faults/sec</b> field.

---

## Process Detail

---

### Overview

The Process Detail report shows the details on the system resource consumption by a specific process on a real-time basis. It is displayed as a list.

This is a drilldown report.

### Storage destination

Reports/Windows/Operating System/Troubleshooting/Real-Time/Drilldown Only/

### Record

Process Detail Interval (PD\_PDI)

### Fields

Field name	Explanation
CPU %	Percentage of the processor time used by processes (%). In a multi-processor environment, usage is displayed with <i>number-of-processors</i> x 100% as the maximum value.
Handle Count	Number of handles being kept open by processes. <sup>#1</sup>
Page Faults/sec	Number of page faults that occurred inside a process (faults/second).
Page File Kbytes	Size of the virtual memory area being used as paging files by processes (KB). <sup>#1</sup>
PID	Process ID. Unique ID of the process being executed.
Pool Nonpaged Kbytes	Size of non-pageable memory being used by processes (KB). <sup>#1</sup>
Pool Paged Kbytes	Size of pageable memory being used by processes (KB). <sup>#1</sup>
Priority Base	Basic process priority. The greater the number, the higher the priority. The following values are used: <ul style="list-style-type: none"> <li>• 24: Real-time</li> <li>• 13: High</li> <li>• 10: Normal or higher</li> <li>• 8: Normal</li> <li>• 6: Normal or lower</li> <li>• 4: Low</li> </ul>
Private Kbytes	Size of memory that is allocated to processes for their exclusive use (KB). <sup>#1</sup>

Field name	Explanation
Privileged CPU %	Percentage of the processor time used by processes in the privileged mode (%). In a multi-processor environment, usage is displayed with <i>number-of-processors</i> x 100% as the maximum value.
Program	Executed program name.
Thread Count	Number of threads (unit for executing an instruction) inside a process. When a process is executed, at least one thread is started. <sup>#1</sup>
User	Executing user name for the process. If a user name that corresponds to the process security ID is not found, NONE_MAPPED is stored for this field. If the executing user name cannot be acquired from the process ID, UNKNOWN is stored for this field.
User CPU %	Amount of processor time used by processes in the user mode (%). In a multi-processor environment, usage is displayed with <i>number-of-processors</i> x 100% as the maximum value.
Virtual Kbytes	Size of the virtual address space being used by the process (KB). <sup>#1</sup>
Working Set Kbytes	Size of the memory being used by processes (which is called a <i>working set</i> and indicates either the total memory size or the amount of memory that can be referenced without page faults) (KB). <sup>#1</sup>

---

## Process Trend

---

### Overview

The Process Trend report shows the number of processes executed in the system in the last month on a daily basis. It is displayed as a line graph.

### Storage destination

Reports/Windows/Operating System/Monthly Trend/

### Record

System Overview (PI)

### Field

Field name	Explanation
Processes	Number of active processes being held in the memory. <sup>#1</sup>

---

## Server Activity Detail

---

### Overview

The Server Activity Detail report shows information on the communication status between networks on a real-time basis. It is displayed as a list.

This is a drilldown report.

### Storage destination

Reports/Windows/Operating System/Troubleshooting/Real-Time/Drilldown Only/

### Record

System Overview (PI)

### Fields

Field name	Explanation
Bytes Rcvd/sec	Amount of data received by the server from the network (bytes/second).
Bytes Total/sec	Amount of data exchanged between the server and the network (bytes/second).
Bytes Xmitd/sec	Amount of data sent by the server to the network (bytes/second).
Net Errors/sec	Number of times unexpected errors occurred because of serious communication errors between the redirector and the server (errors/second).
Pkts Rcvd/sec	Number of packets (which are also called <i>server message blocks</i> (SMB)) received by the redirector (packets/second).
Pkts Xmitd/sec	Number of packets (which are also called <i>server message blocks</i> (SMB)) sent by the redirector (packets/second).
Pkts/sec	Number of packets (which are also called <i>server message blocks</i> (SMB)) processed by the redirector (packets/second).
Redir Bytes Rcvd/sec	Amount of data received by the redirector from the network (bytes/second).
Redir Bytes Total/sec	Amount of data exchanged by the redirector with the network (bytes/second).
Redir Bytes Xmitd/sec	Amount of data sent by the redirector to the network (bytes/second).

Field name	Explanation
Redir File Data Ops/sec	Number of operations in which the redirector is processing data (operations/second).
Redir File Read Ops/sec	Number of operations in which applications requested data from the redirector (operations/second).
Redir File Write Ops/sec	Number of operations in which applications sent data to the redirector (operations/second).
Redir Server Sessions	Number of security object sessions managed by the redirector following the OS startup. <sup>#1</sup>
Server Disconnects	Number of times the server disconnected from the redirector following the OS startup. <sup>#1</sup>
Server Reconnects	Number of times the redirector had to reconnect to the server in order to complete new active requests following the OS startup. <sup>#1</sup>
Server Sessions	Number of active sessions in the server. <sup>#1</sup>
Server Sessions Hung	Number of active sessions that cannot continue processing because a lack of response from a remote server resulted in time-out. <sup>#1</sup>

---

## Server Activity Summary (Multi-Agent)

---

### Overview

The Server Activity Summary (Multi-Agent) report shows the summary of the communication status between networks for multiple agents over the last 24 hours on an hourly basis. It is displayed as a table and a line graph.

### Storage destination

Reports/Windows/Operating System/Status Reporting/Daily Trend/

### Record

System Overview (PI)

### Fields

Field name	Explanation
Agent Instance <sup>#3</sup>	PFM - Agent name.
Bytes Total/sec	Amount of data exchanged between the server and the network (bytes/second).
Net Errors/sec	Number of times unexpected errors occurred because of serious communication errors between the redirector and the server (errors/second).
Pkts/sec	Number of packets (which are also called <i>server message blocks</i> (SMB)) processed by the redirector (packets/second).
Redir Bytes Total/sec	Amount of data exchanged by the redirector with the network (bytes/second).
Redir File Data Ops/sec	Number of operations in which the redirector is processing data (operations/second).
Redir Server Sessions	Number of security object sessions managed by the redirector following the OS startup. <sup>#1</sup>
Server Sessions	Number of active sessions on the server. <sup>#1</sup>

---

## Server Activity Summary (real-time report on information on the communication status between networks)

---

### Overview

The Server Activity Summary report shows information on the communication status between networks on a real-time basis. It is displayed as a list and a line graph.

### Storage destination

Reports/Windows/Operating System/Troubleshooting/Real-Time/

### Record

System Overview (PI)

### Fields

Field name	Explanation
Bytes Total/sec	Amount of data exchanged between the server and the network (bytes/second). To display the Server Activity Detail report, click this field.
Net Errors/sec	Number of times unexpected errors occurred because of serious communication errors between the redirector and the server (errors/second).
Pkts/sec	Number of packets (which are also called <i>server message blocks</i> (SMB)) processed by the redirector (packets/second).
Redir Bytes Total/sec	Amount of data exchanged by the redirector with the network (bytes/second).
Redir File Data Ops/sec	Number of operations in which the redirector is processing data (operations/second).
Redir Server Sessions	Number of security object sessions managed by the redirector following the OS startup. <sup>#1</sup>
Server Sessions	Number of active sessions on the server. <sup>#1</sup>

### Drilldown report (field level)

Report name	Explanation
Server Activity Detail	Shows the details on the server operation status. To display this report, click the <b>Bytes Total/sec</b> field.

---

## Server Activity Summary (historical report on information on the communication status between networks)

---

### Overview

The Server Activity Summary report shows the communication status between networks over the last hour on a minute-by-minute basis. It is displayed as a table and a line graph.

### Storage destination

Reports/Windows/Operating System/Troubleshooting/Recent Past/

### Record

System Overview (PI)

### Fields

Field name	Explanation
Bytes Total/sec	Amount of data exchanged between the server and the network (bytes/second).
Net Errors/sec	Number of times unexpected errors occurred because of serious communication errors between the redirector and the server (errors/second).
Pkts/sec	Number of packets (which are also called <i>server message blocks</i> (SMB)) processed by the redirector (packets/second).
Redir Bytes Total/sec	Amount of data exchanged by the redirector with the network (bytes/second).
Redir File Data Ops/sec	Number of operations in which the redirector is processing data (operations/second).
Redir Server Sessions	Number of security object sessions managed by the redirector following the OS startup. <sup>#1</sup>
Server Sessions	Number of active sessions on the server. <sup>#1</sup>

---

## Server Activity Summary Trend (Multi-Agent)

---

### Overview

The Server Activity Summary Trend (Multi-Agent) report shows the operation status of the data exchanged between the server of multiple systems and the network over the last month on a daily basis. It is displayed as a line graph.

### Storage destination

Reports/Windows/Operating System/Monthly Trend/

### Record

System Overview (PI)

### Field

Field name	Explanation
Bytes Total/sec	Amount of data exchanged between the server and the network (bytes/second).

---

## Server Sessions Trend (Multi-Agent)

---

### Overview

The Server Sessions Trend (Multi-Agent) report shows the number of active sessions at the server of multiple systems over the last month on a daily basis. It is displayed as a line graph.

### Storage destination

Reports/Windows/Operating System/Monthly Trend/

### Record

System Overview (PI)

### Field

Field name	Explanation
Server Sessions	Number of active sessions on the server. <sup>#1</sup>

---

## System Memory Detail

---

### Overview

The System Memory Detail report shows the details on the system's physical memory over the last hour on a minute-by-minute basis. It is displayed as a table.

### Storage destination

Reports/Windows/Operating System/Troubleshooting/Recent Past/

### Record

System Overview (PI)

### Fields

Field name	Explanation
Available Mbytes	Available size in the physical memory area (MB). The combined total of zero memory, free memory, and standby memory (cached) that can be immediately allocated to a process or be used by the system. Normally, if this value continues to be less than 5% of the value in the Total Physical Memory Mbytes field, it indicates that excessive paging is occurring. <sup>#1</sup>
Cache Faults/sec	Number of page faults that occurred in file system caching (faults/second).
Cache Mbytes	Size of the file system cache being used (MB). <sup>#1</sup>
Copy Read Hits %	Requests to read from the file system cache page (%).
Copy Reads/sec	Number of page reads from the file system cache, including memory copying from the cache to application buffer memory (reads/second).
Pages/sec	Rate of paging for the pages when page faults occurred (pages/second). The total of the values in the Pages Input/sec field and Pages Output/sec field. Normally, if this value continues to exceed 5, memory may have become a system bottleneck.
Pool Nonpaged Bytes	Size of physical memory that cannot be paged, that is, the location where a system component acquired an area when executing a task (KB). Normally, if the value in this field continues to increase when the server activity level is not increasing, a process with memory leak may be being executed. <sup>#1</sup>
Pool Paged Bytes	Size of physical memory that can be paged, that is, the location where a system component acquired an area when executing a task (KB). <sup>#1</sup>

## System Memory Detail

Field name	Explanation
System Cache Resident Bytes	Size of pageable physical memory inside the file system cache used by the OS code (the file system that is loaded by <code>Ntoskrnl.exe</code> , <code>Hal.dll</code> , boot driver, and <code>Ntldr/osloader</code> ) (bytes). <sup>#1</sup>

---

## System Overview (real-time report on the system overview)

---

### Overview

The System Overview report shows the overview of the entire system on a real-time basis. It is displayed as a list and a line graph.

### Storage destination

Reports/Windows/Operating System/Troubleshooting/Real-Time/

### Record

System Overview (PI)

### Fields

Field name	Explanation
Available Mbytes	Available size in the physical memory area (MB). The combined total of zero memory, free memory, and standby memory (cached) that can be immediately allocated to a process or be used by the system. Normally, if this value continues to be less than 5% of the value in the Total Physical Memory Mbytes field, it indicates that excessive paging is occurring. <sup>#1</sup>
Bytes Total/sec	Amount of data exchanged between the server and the network (bytes/second). To display the Server Activity Summary report, click this field.
CPU %	Processor usage (%). Percentage of time the processor spent executing non-idle threads. The maximum value that is displayed is 100, even in a multi-processor environment. To display the CPU Usage - Top 10 Processes report, click this field.
File Control Ops/sec	Number of times operations other than file system data reading or writing occurred in the processor (operations/second).
File Data Ops/sec	Number of times file system data reading or writing operations occurred in the processor (operations/second). To display the Disk Time - Top 10 Logical Drives report, click this field.
Page Faults/sec	Number of page faults that occurred (faults/second). Normally, if this value continues to exceed 5, it indicates a memory bottleneck. To display the Page Faults - Top 10 Processes report, click this field.

Field name	Explanation
Pages/sec	Rate of paging for the pages when page faults occurred (pages/second). The total of the values in the Pages Input/sec field and Pages Output/sec field. Normally, if this value continues to exceed 5, memory may have become a system bottleneck.
Transition Faults/sec	Number of times paging did not occur because a page that was being used by another process that shares the page or a page located in an updated page list or standby list was recovered when a paging fault occurred (faults/second).

### Drilldown report (report level)

Report name	Explanation
Free Space - Top 10 Logical Drives	Shows the top 10 logical drives with the largest free space on a real-time basis.
Network Segment Summary	A reserved report that cannot be used.

### Drilldown report (field level)

Report name	Explanation
CPU Usage - Top 10 Processes	Shows the top 10 processes with the highest CPU usage. To display this report, click the <b>CPU %</b> field.
Disk Time - Top 10 Logical Drives	Shows the top 10 logical drives with the highest disk usage. To display this report, click the <b>File Data Ops/sec</b> field.
Page Faults - Top 10 Processes	Shows the top 10 processes with the highest page fault frequency. To display this report, click the <b>Page Faults/sec</b> field.
Server Activity Summary	Shows information on the communication status between networks on a real-time basis. To display this report, click the <b>Bytes Total/sec</b> field.

---

## System Overview (historical report on the system overview)

---

### Overview

The System Overview report shows the system overview over the last hour on a minute-by-minute basis. It is displayed as a table and a line graph.

### Storage destination

Reports/Windows/Operating System/Troubleshooting/Recent Past/

### Record

System Overview (PI)

### Fields

Field name	Explanation
Bytes Total/sec	Amount of data exchanged between the server and the network (bytes/second). To display the Server Activity Summary report, click this field.
CPU %	Processor usage (%). Percentage of time the processor spent executing non-idle threads. The maximum value that is displayed is 100, even in a multi-processor environment. To display the CPU Usage Summary report, click this field.
File Control Ops/sec	Number of times operations other than file system data reading or writing occurred in the processor (operations/second).
File Data Ops/sec	Number of times file system data reading or writing operations occurred in the processor (operations/second). To display the File System I/O Summary report, click this field.
Page Faults/sec	Number of page faults that occurred (faults/second). Normally, if this value continues to exceed 5, it indicates a memory bottleneck. To display the Memory Paging report, click this field.
Pages/sec	Rate of paging for the pages when page faults occurred (pages/second). The total of the values in the Pages Input/sec field and Pages Output/sec field. Normally, if this value continues to exceed 5, memory may have become a system bottleneck.
Transition Faults/sec	Number of times paging did not occur because a page that was being used by another process that shares the page or a page located in an updated page list or standby list was recovered when a paging fault occurred (faults/second).

### Drilldown report (report level)

Report name	Explanation
System Memory Detail	Shows the details on memory usage by the operating system over the last hour on a minute-by-minute basis.

### Drilldown report (field level)

Report name	Explanation
CPU Usage Summary	Shows the summary of CPU usage over the last hour on a minute-by-minute basis. To display this report, click the <b>CPU %</b> field.
File System I/O Summary	Shows the summary of I/O usage over the last hour on a minute-by-minute basis. To display this report, click the <b>File Data Ops/sec</b> field.
Memory Paging	Shows the paging frequency over the last hour on a minute-by-minute basis. To display this report, click the <b>Page Faults/sec</b> field.
Server Activity Summary	Shows information on the communication status between networks on a real-time basis. To display this report, click the <b>Bytes Total/sec</b> field.

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## System Utilization Status

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### Overview

The System Utilization Status report shows the status of activities between the server and the network on a real-time basis. It is displayed as a list and a line graph.

### Storage destination

Reports/Windows/Operating System/Status Reporting/Real-Time/

### Record

System Overview (PI)

### Fields

Field name	Explanation
Bytes Total/sec	Amount of data exchanged between the server and the network (bytes/second).
CPU %	Processor usage (%). Percentage of time the processor spent executing non-idle threads. The maximum value that is displayed is 100, even in a multi-processor environment.
Processor Queue Length	Number of threads in the processor queue that are ready to be executed. Normally, if the queue length continues to exceed 2, it indicates processor congestion. <sup>#1</sup>
Redir Bytes Total/sec	Amount of data exchanged by the redirector with the network (bytes/second).
Server Sessions	Number of active sessions on the server. <sup>#1</sup>

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## Workload Status

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### Overview

The Workload Status report shows the system's workload-related data on a real-time basis. It is displayed as a list and a line graph.

### Storage destination

Reports/Windows/Operating System/Status Reporting/Real-Time/

### Record

System Overview (PI)

### Fields

Field name	Explanation
Bytes Total/sec	Amount of data exchanged between the server and the network (bytes/second).
Context Switches/sec	Number of context switches (when the executing thread arbitrarily releases the processor and is interrupted by a thread with higher priority, the mode is switched between the user mode and the privileged mode to use either the executive or subsystem service) in the processor that were caused by all process threads (switches/second).
CPU %	Processor usage (%). Percentage of time the processor spent executing non-idle threads. The maximum value that is displayed is 100, even in a multi-processor environment.
Processes	Number of active processes being held in the memory. <sup>#1</sup>
Processor Queue Length	Number of threads in the processor queue that are ready to be executed. Normally, if the queue length continues to exceed 2, it indicates processor congestion. <sup>#1</sup>
Server Sessions	Number of active sessions on the server. <sup>#1</sup>
System Calls/sec	Number of times the processes being executed by the processor invoked a system service routine (calls/second).

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## Workload Status (Multi-Agent)

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### Overview

The Workload Status (Multi-Agent) report shows the summary of workload-related data on multiple systems over the last 24 hours on an hourly basis. It is displayed as a table and a line graph.

### Storage destination

Reports/Windows/Operating System/Status Reporting/Daily Trend/

### Record

System Overview (PI)

### Fields

Field name	Explanation
Agent Instance <sup>#3</sup>	PFM - Agent name
Bytes Total/sec	Amount of data exchanged between the server and the network (bytes/second).
Context Switches/sec	Number of context switches (when the executing thread arbitrarily releases the processor and is interrupted by a thread with higher priority, the mode is switched between the user mode and the privileged mode to use either the executive or subsystem service) in the processor that were caused by all process threads (switches/second).
CPU %	Processor usage (%). Percentage of time the processor spent executing non-idle threads. The maximum value that is displayed is 100, even in a multi-processor environment.
Processes	Number of active processes being held in the memory. <sup>#1</sup>
Processor Queue Length	Number of threads in the processor queue that are ready to be executed. Normally, if the queue length continues to exceed 2, it indicates processor congestion. <sup>#1</sup>
Server Sessions	Number of active sessions on the server. <sup>#1</sup>
System Calls/sec	Number of times the processes being executed by the processor invoked a system service routine (calls/second).



## Chapter

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# 5. Records

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This chapter explains PFM - Agent for Platform records. For details about how to collect performance data for each record, see the chapter explaining the functions of Performance Management in the manual *Job Management Partner 1/Performance Management Planning and Configuration Guide*, or the chapter explaining the management of operation monitoring data in the manual *Job Management Partner 1/Performance Management User's Guide*.

- Data model

- Format of record explanations

- List of ODBC key fields

- Summarization rules

- List of data types

- Field values

- Fields that are added only when a record is recorded in the Store database

- Fields that are output when data stored in the Store database is exported

- Notes on records

- List of records

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## Data model

---

The records and fields that each PFM - Agent has are summarily referred to as a *data model*. Each PFM - Agent and the data model it has are assigned unique version numbers. For details about data model versions of PFM - Agent for Platform, see *H. Version Compatibility*.

To check the data model version of each PFM - Agent, use the Agents window in PFM - Web Console to display the agent properties.

For details about data models, see the chapter explaining the functions of Performance Management in the manual *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

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## Format of record explanations

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This chapter describes PFM - Agent for Platform records in alphabetical order. The explanation of each record consists of the following items:

### Function

Provides an overview and notes on the performance data stored in each record.

### Default values and values that can be specified

The default values of the performance data collection conditions that are set in each record and the values that the user can specify in place of the default values are shown in a table. The table below explains the meaning of the items described in *Default values and values that can be specified*. For details about the items shown in this table, see the chapter explaining management of operation monitoring data in the manual *Job Management Partner 1/Performance Management User's Guide*.

Table 5-1: Default values and changeable values

Item	Meaning	Modifiable
Collection Interval	Performance data collection interval (seconds).	Yes: Can be modified
Collection Offset <sup>#1</sup>	Offset value for starting the collection of performance data (seconds). For details about the offset value, see the chapter explaining management of operation monitoring data in the manual <i>Job Management Partner 1/Performance Management User's Guide</i> .  For details about the start time of performance data collection, see the chapter explaining the functions of Performance Management in the manual <i>Job Management Partner 1/Performance Management Planning and Configuration Guide</i> .	No: Cannot be modified
Log	Indicates whether to register the collected performance data in the Store database: Yes: Recorded. However, the data is not recorded if <code>Collection Interval=0</code> . No: Not recorded.	
LOGIF	Condition for determining whether to register the collected performance data in the Store database.	

Item	Meaning	Modifiable
Sync Collection With <sup>#2</sup>	Indicates whether to collect performance data synchronously with the record displayed in the <code>Description</code> record property. For details, see the chapter explaining management of operation monitoring data in the manual <i>Job Management Partner 1/Performance Management User's Guide</i> .	

#1

A value of between 0 and 32,767 seconds (the value within the range specified for Collection Interval). Use this item to distribute the collection load, because executing data collection all at once results in processing load concentration. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

#2

If Sync Collection With is displayed, neither Collection Interval nor Collection Offset is displayed.

### ODBC key fields

Shows the ODBC key fields required to use an SQL statement in PFM - Manager or PFM - Base to utilize the record data stored in the Store database. Some ODBC key fields are common to all records while others are unique to some records. Only those ODBC key fields that are unique to each record are shown for each record. Only multi-instance records have unique ODBC key fields.

For details about the ODBC key fields common to all records, see *List of ODBC key fields* in this chapter. For details about how to use ODBC key fields, see the chapter explaining operation analysis linked with an ODBC-compatible application program in the manual *Job Management Partner 1/Performance Management User's Guide*.

### Lifetime

Indicates the duration over which the consistency of the performance data collected into each record is guaranteed. For details about lifetime, see the chapter explaining the functions of Performance Management in the manual *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

### Record size

Indicates the size of performance data that is stored in each record in a single collection operation.

### Fields

The fields in each record are explained in a table. The individual items in a table are

explained below.

- PFM - View name (PFM - Manager name)

- PFM - View name

Indicates the field name (PFM - View name) that is displayed in PFM - Web Console.

- PFM - Manager name

Indicates the field name (PFM - Manager name) described in an SQL statement when PFM - Manager uses an SQL statement to utilize the field data stored in the Store database.

In an SQL statement, the Manager name is described with the record ID of each record added to the front. For example, for the Interval (`INTERVAL`) field of the Process Detail (`PD`) record, `PD_INTERVAL` is used.

- Explanation

The performance data stored in each field is explained below.

A hash mark (#) in a table indicates that the value in the field is the latest monitored value returned by the OS during collection.

The following methods are used for collecting performance data for the individual fields:

- Determined from an average or percentage using the current collected data and the data collected during the previous interval
- Determined from the current collected data only (including values accumulated inside the OS. Corresponds to those indicated by a hash mark (#) in the table)
- Determined from data in other fields (See *Data source* in the field table of each record.)

Unless otherwise specified, the value collected during the data collection interval is used.

- Summary

Indicates the method (summarization rules) to be used by Agent Store when summarizing data. For details about summarization rules, see *Summarization rules* in this chapter.

- Format

Indicates the data type of the value in each field, such as `char` and `float` types. For details about data types, see *List of data types* in this chapter.

- Delta

When data is expressed as a changed amount relative to data collected as an accumulated value, it is called *delta*. For details about delta, see *Field values* in this chapter.

■ Unsupported

Indicates a version of Windows that does not support the field:

- 2003 (x86): The field is not supported by Windows Server 2003 (x86).
- 2003 (x64): The field is not supported by Windows Server 2003 (x64).
- 2008 (x86): The field is not supported by the 32-bit version of Windows Server 2008.
- 2008 (x64): The field is not supported by the 64-bit version of Windows Server 2008.
- --: The field is available to all platforms supported by PFM - Agent for Platform.

■ Data source

Indicates the calculation method or collection destination for the value in the applicable field. For details about field values, see *Field values* in this chapter.

## List of ODBC key fields

Some ODBC key fields are common to all records while others are unique to some records. This section shows the ODBC key fields that are common to all records. ODBC key fields are required if you use an SQL statement in PFM - Manager to utilize the record data stored in the Store database.

The table below shows a list of ODBC key fields common to all records. For details about the ODBC key fields unique to each record, see the explanation of each record.

Table 5-2: List of ODBC key fields common to all records

ODBC key fields	ODBC format	Data	Explanation
<i>record-id</i> _DATE	SQL_INTEGER	Internal	Record key indicating the date on which the record was created
<i>record-id</i> _DATETIME	SQL_INTEGER	Internal	Combination of the <i>record-id</i> _DATE field and the <i>record-id</i> _TIME field
<i>record-id</i> _DEVICEID	SQL_VARCHAR	Internal	Name of the host on which PFM - Agent is running
<i>record-id</i> _DRAWER_TYPE	SQL_VARCHAR	Internal	Category. The following values are valid: m: Minute H: Hour D: Day W: Week M: Month Y: Year
<i>record-id</i> _PROD_INST	SQL_VARCHAR	Internal	Name of the PFM - Agent instance
<i>record-id</i> _PROPID	SQL_VARCHAR	Internal	PFM - Agent's product ID
<i>record-id</i> _RECORD_TYPE	SQL_VARCHAR	Internal	Record type identifier (4 bytes)
<i>record-id</i> _TIME	SQL_INTEGER	Internal	Time at which the record was created (Greenwich Mean Time)

---

## Summarization rules

---

For records of the `PI` record type, two types of data are stored in the Store database: the data collected at the interval set in `Collection Interval`, and the data summarized for a specific period of time (minute, hour, day, week, month, or year) according to a predefined rule. The type of summarization is defined for each field. This definition is called a *summarization rule*.

Depending on the summarization rule, intermediate data used during the summarization period must sometimes be retained. In this case, a field for holding the intermediate data is added to a record in the Store database. This field is called an *added field*.

Part of an added field is displayed as a record field in PFM - Web Console. The added fields displayed on PFM - Web Console can be used as the fields to be displayed in a historical report.

To differentiate them from the fields that are added through summarization, the fields described in the explanation of each record in this chapter are called *fixed fields*.

The following field names are used for added fields:

- Added field name stored in the Store database  
A field name consisting of the PFM - Manager name in the fixed field and an added suffix
- Added field name displayed on PFM - Web Console  
A field name consisting of the PFM - View name in the fixed field and an added suffix

The table below shows the suffixes to be added to the PFM - Manager name, the corresponding suffixes to be added to the PFM - View name, and the data stored in the fields.

*Table 5-3: List of suffixes for added fields*

<b>PFM - Manager name</b>	<b>PFM - View name</b>	<b>Stored data</b>
<code>_TOTAL</code>	(Total)	Total field value of the records within the summarization period
<code>_TOTAL_SEC</code>	(Total)	Total field value of the records within the summarization period (for a <code>utime</code> field)
<code>_COUNT</code>	--	Number of records collected within the summarization period
<code>_HI</code>	(Max)	Maximum field value of the records within the summarization period

<b>PFM - Manager name</b>	<b>PFM - View name</b>	<b>Stored data</b>
_LO	(Min)	Minimum field value of the records within the summarization period

Legend:

--: No added field

The table below shows a list of summarization rules.

*Table 5-4:* List of summarization rules

<b>Summarization rule name</b>	<b>Summarization rule</b>
COPY	Stores the field value of the latest record within the summarization period without any modification.
AVG	Stores the average field value within the summarization period. The computation formula follows: <i>(total-field-value) / (number-of-collected-records)</i>  Added fields (Store database) <ul style="list-style-type: none"> <li>• _TOTAL</li> <li>• _TOTAL_SEC (for a utime field)</li> <li>• _COUNT</li> </ul> Added field (PFM - Web Console) <sup>#1, #2</sup> <ul style="list-style-type: none"> <li>• (Total)</li> </ul>
ADD	Stores the total field value within the summarization period.
HI	Stores the maximum field value within the summarization period.
LO	Stores the minimum field value within the summarization period.

Summarization rule name	Summarization rule
HILO	<p>Stores the maximum, minimum, and average of the data within the summarization period. An average value is stored in the fixed field.</p> <p>The computation formula follows:  <math>(total-field-value) / (number-of-collected-records)</math></p> <p>Added fields (Store database)</p> <ul style="list-style-type: none"> <li>• <code>_HI</code></li> <li>• <code>_LO</code></li> <li>• <code>_TOTAL</code></li> <li>• <code>_TOTAL_SEC</code> (for a <code>utime</code> field)</li> <li>• <code>_COUNT</code></li> </ul> <p>Added fields (PFM - Web Console)<sup>#1, #2</sup></p> <ul style="list-style-type: none"> <li>• <code>(Max)</code></li> <li>• <code>(Min)</code></li> <li>• <code>(Total)</code></li> </ul>
%	<p>Stores the average field value within the summarization period. Applied primarily to percentage fields.</p> <p>The computation formula follows:  <math>(total-field-value) / (number-of-collected-records)</math></p> <p>Added fields (Store database)</p> <ul style="list-style-type: none"> <li>• <code>_TOTAL</code></li> <li>• <code>_TOTAL_SEC</code> (for a <code>utime</code> field)</li> <li>• <code>_COUNT</code></li> </ul>
--	No summarization

#1

A `utime` field containing `_AVG` in the PFM - Manager name cannot use a `(Total)` field added to PFM - Web Console in a historical report.

#2

A field containing any of the following character strings in the PFM - Manager name cannot use a `(Total)` field added to PFM - Web Console in a historical report:

`_PER_`, `PCT`, `PERCENT`, `_AVG`, and `_RATE_TOTAL`

---

## List of data types

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The table below lists the data types for various field values along with the corresponding C and C++ data types. The field values shown under *Data type* in this table are shown in the *Format* column in the field table for each record.

Table 5-5: List of data types

Data type		Size (bytes)	Explanation
Field	C and C++		
<code>char(<i>n</i>)</code>	<code>char()</code>	Number inside ()	Character string having a length of <i>n</i> bytes
<code>double</code>	<code>double</code>	8	Numerical value (1.7E ± 308 (15 digits))
<code>float</code>	<code>float</code>	4	Numerical value (3.4E ± 38 (7 digits))
<code>long</code>	<code>long</code>	4	Numerical value (-2,147,483,648 to 2,147,483,647)
<code>short</code>	<code>short</code>	2	Numerical value (-32,768 to 32,767)
<code>string(<i>n</i>)</code>	<code>char[]</code>	Number inside ()	Character string having <i>n</i> -byte length. The last character is <code>null</code> .
<code>time_t</code>	<code>unsigned long</code>	4	Numerical value (0 to 4,294,967,295)
<code>timeval</code>	<code>struct</code>	8	Numerical value (the first 4 bytes indicate seconds, and the next 4 bytes indicate microseconds.)
<code>ulong</code>	<code>unsigned long</code>	4	Numerical value (0 to 4,294,967,295)
<code>utime</code>	<code>struct</code>	8	Numerical value (the first 4 bytes indicate seconds, and the next 4 bytes indicate microseconds.)
<code>word</code>	<code>unsigned short</code>	2	Numerical value (0 to 65,535)
(Not applicable)	<code>unsigned char</code>	1	Numerical value (0 to 255)

---

## Field values

---

This section explains the values stored in individual fields.

### Data source

Each field stores a value acquired from Performance Management or monitoring target program, or a value computed from such a value based on a certain computation formula. The acquisition destination or computation method for each field value is shown under the *Data source* column.

If performance data acquired from Windows is processed and set as a field value, the character string in PFM - Agent for Platform's *Data source* column shows the computation method for the value that is set in the field. The following coding methods are used in Data source:

- Two hyphens (--) indicate that performance data acquired from Windows is not processed and set as a field value.
- *return-value* indicates unprocessed performance data.
- (T1) indicates the current collected data; (T0) indicates the value collected during the previous interval.
- If the value is computed by using other field values, the field name is indicated with a PFM - Manager name.

For example, the Debugging Requests (DEBUGGING\_REQUESTS) field of the Active Server Pages (PI\_ASP2) record is described as TOTAL\_DEBUGGING\_REQUESTS (T1) - TOTAL\_DEBUGGING\_REQUESTS (T0), and this field stores the value obtained by subtracting the TOTAL\_DEBUGGING\_REQUESTS field value collected during the previous interval from the real-time TOTAL\_DEBUGGING\_REQUESTS field value.

### Delta

Data expressed as an amount of change is called a *delta*. For example, if the performance data collected during the first interval is 3 and that collected during the second interval is 4, 1 is stored as the amount of change. Whether each field value is a delta is indicated under the *Delta* column in the field table.

If **Indicate delta value** is selected in the real-time report settings, a value is displayed even when data is collected for the first time. However, if a report requires the data collected during the previous interval, the first value is shown as 0. The collected data value is shown when data is subsequently collected.

The performance data collected by PFM - Agent for Platform varies as shown in the table below.

Table 5-6: Performance data collected by PFM - Agent for Platform

Record type	Delta	Data type	Indicate delta value selected#	Record value
PI record type	Yes	--	--	--
	No	Real-time data	Yes	Shows the real-time value.
			No	Shows the real-time value.
		<ul style="list-style-type: none"> <li>• Historical data</li> <li>• Alarm monitoring data</li> </ul>	--	Shows the real-time value.
PD record type	Yes	--	--	--
	No	Real-time data	Yes	Shows the real-time value.
			No	Shows the real-time value.
		<ul style="list-style-type: none"> <li>• Historical data</li> <li>• Alarm monitoring data</li> </ul>	--	Shows the real-time value.

Legend:

--: Not applicable

#

Indicates whether the following items in PFM - Web Console are selected:

- **Indicate delta value** in the Indication settings (Realtime) window, which opens when **Edit** is chosen in the Report wizard
- **Indicate delta value** under **Indication settings (Realtime)** under the **Properties** tab in the Report window

Note the following points about performance data collection:

- The performance data for the first historical report to be stored by PFM - Agent for Platform is created based on the data collected during the previous interval and the real-time data. Therefore, after the collection of a historical report begins, it may take as long as twice the specified collection interval before the first performance data is collected.
- After the collection of a real-time report begins, it takes a minimum of 5 seconds before the first performance data, except for the following records, is collected:
  - Device Detail (PD\_DEV)

- Event Log (PD\_ELOG)
- Service Process Detail (PD\_SVC)
- If the OS counter value wraps around because, for example, the system is operated for a long time, the value of the Delta field might be excessively large.

### Averages and percentages in individual fields

Some averages and percentages in individual fields are determined as values on a second-by-second basis, while others are determined according to the data collection interval. Unless otherwise specified, the values determined according to the data collection interval are used (if the interval is 60 seconds, data is collected every minute).

### Interval field values

Interval field values vary according to the record type as shown in the table below.

Table 5-7: Interval field values

Record type	Instance type	Report type	Explanation	
			Interval (INTERVAL)	Interval2 (INTERVAL2)
PI record type	Multi-instance record	Real-time report	The first value is 5. Thereafter, an updated value is displayed according to the refresh interval <sup>#</sup> that is set in the report (seconds).	
		Historical report	An updated value is displayed according to the refresh interval <sup>#</sup> that is set in the report (seconds). If summarized, the last collected value is displayed.	An updated value is displayed according to the refresh interval <sup>#</sup> that is set in the report (seconds). If summarized, the total of the summarized records is displayed.
	Single-instance record	Real-time report	The first value is 5. Thereafter, an updated value is displayed according to the refresh interval <sup>#</sup> that is set in the report (seconds).	--
		Historical report	An updated value is displayed according to the refresh interval <sup>#</sup> that is set in the report (seconds). If summarized, the total of the summarized records is displayed.	--

Record type	Instance type	Report type	Explanation	
			Interval (INTERVAL)	Interval2 (INTERVAL2)
PD record type	Multi-instance record	Real-time report	The first value is 5. Thereafter, an updated value is displayed according to the refresh interval <sup>#</sup> that is set in the report (seconds). Note that 0 is always displayed for the following records: <ul style="list-style-type: none"> <li>• Device Detail (PD_DEV)</li> <li>• Process Detail (PD)</li> <li>• Process End Detail (PD_PEND)</li> <li>• Service Process Detail (PD_SVC)</li> </ul>	--
		Historical report	An updated value is displayed according to the refresh interval <sup>#</sup> that is set in the report (seconds). Note that 0 is always displayed for the following records: <ul style="list-style-type: none"> <li>• Device Detail (PD_DEV)</li> <li>• Process Detail (PD)</li> <li>• Process End Detail (PD_PEND)</li> <li>• Service Process Detail (PD_SVC)</li> </ul>	--
	Single-instance record	Real-time report	--	--
		Historical report	--	--

## Legend:

--: Not applicable

#

The refresh interval is computed using the following formula:

$$\text{interval-field-value} = \text{record-time-field-value} - \text{record-time-field-value-collected-during-previous-interval}$$

---

## Fields that are added only when a record is recorded in the Store database

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The table below shows the fields that are added only when a record is recorded in the Store database.

*Table 5-8:* Fields that are added only when a record is recorded in the Store database

<b>PFM - View name (PFM - Manager name)</b>	<b>Explanation</b>	<b>Format</b>	<b>Delta</b>	<b>Supported version</b>	<b>Data source</b>
Agent Host (DEVICEID)	Name of the host on which PFM - Agent is running	string (256)	No	All	--
Agent Instance (PROD_INST)	Name of the host on which PFM - Agent is running	string (256)	No	All	--
Agent Type (PROPID)	Product ID of PFM - Agent indicated as a 1-byte identifier	char	No	All	--
Date (DATE)	Date on which the record was created (Greenwich Mean Time) <sup>#1</sup> , #3	char (3)	No	All	--
Date and Time (DATETIME)	Combination of the Date (DATE) field and the Time (TIME) field <sup>#3</sup>	char (6)	No	All	--
Drawer Type (DRAWER_TYPE)	For records of the PI record type, the data summarization category is indicated. The displayed category differs depending on whether the report is displayed in PFM - Web Console or using the ODBC driver. <sup>#2</sup>	char	No	All	--
GMT Offset (GMT_ADJUST)	Difference between the Greenwich Mean Time and the local time, in seconds	long	No	All	--
Time (TIME)	Time at which the record was created (Greenwich Mean Time) <sup>#1</sup> , #3	char (3)	No	All	--

Legend:

--: Indicates that the performance data acquired from Windows is not processed

and set as a field.

#1

In records of the PI record type, data is summarized, and therefore the time used as the reference point for summarization is set. The table below shows the setting for each record category.

Table 5-9: Setting for each record category

Category	Setting for each record category
Minute	0 seconds for the time at which the record is created
Hour	0 minutes and 0 seconds for the time at which the record is created
Day	0 hours, 0 minutes, and 0 seconds for the day on which the record is created
Week	0 hours, 0 minutes, and 0 seconds for the week in which the record is created
Month	0 hours, 0 minutes, and 0 seconds for the first day of the month in which the record is created
Year	0 hours, 0 minutes, and 0 seconds of January 1 of the year in which the record is created

#2

The table below shows the differences in display depending on whether the report is displayed on PFM - Web Console or using the ODBC driver.

Table 5-10: Differences in data summarization category according to the display method

Category	PFM - Web Console	ODBC driver
Minute	Minute	m
Hour	Hour	H
Day	Day	D
Week	Week	W
Month	Month	M
Year	Year	Y

#3

When data is displayed in a report or by using the ODBC driver, the Date field uses the YYYYMMDD format, the Date and Time field uses the YYYYMMDD hh:mm:ss format, and the Time field uses the hh:mm:ss format.

---

## Fields that are output when data stored in the Store database is exported

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When data stored in the Store database is exported by using the `jpctool db dump` (`jpcctrl dump`) command, the fields listed below are output. Although these fields are also added when a record is stored in the Store database, they are not displayed in PFM - Web Console and therefore cannot be used as fields displayed in a report. Do not use these fields for operations because they are used internally by PFM - Agent.

- *record-ID\_DATE\_F*
- *record-ID\_DEVICEID\_F*
- *record-ID\_DRAWER\_TYPE\_F*
- *record-ID\_DRAWER\_COUNT*
- *record-ID\_DRAWER\_COUNT\_F*
- *record-ID\_INST\_SEQ*
- *record-ID\_PRODID\_F*
- *record-ID\_PROD\_INST\_F*
- *record-ID\_RECORD\_TYPE*
- *record-ID\_RECORD\_TYPE\_F*
- *record-ID\_SEVERITY*
- *record-ID\_SEVERITY\_F*
- *record-ID\_TIME\_F*
- *record-ID\_UOWID*
- *record-ID\_UOWID\_F*
- *record-ID\_UOW\_INST*
- *record-ID\_UOW\_INST\_F*
- *record-ID\_PFM - Manager-name\_SEC*
- *record-ID\_PFM - Manager-name\_MSEC*

---

## Notes on records

---

Note the following points when collecting records.

### Notes on cases in which record instances cannot be uniquely identified

PFM - Agent for Platform references the latest OS information at a given interval to collect performance data. If a record instance in a record field cannot be uniquely identified from the information acquired from the OS, one of the following two actions is performed:

1. A number #*n* (where *n* = 1, 2, 3, ...) is appended to the field.

The table below shows the record fields to which a number is appended.

*Table 5-11:* Record fields to which a number is appended

Record name	Field name
Event Log (PD_ELOG)	Source Name (SOURCE_NAME)
Generic Data Detail (PD_GEND)	Instance (INSTANCE)
Generic Data Interval (PI_GENI)	Instance (INSTANCE)
Logical Disk Overview (PI_LOGD)	ID (INSTANCE)
NBT Overview (PI_NBT)	Instance (INSTANCE)
Network Interface Overview (PI_NETI)	Instance (INSTANCE)
Page File Detail (PD_PAGF)	Instance (INSTANCE)
Physical Disk Overview (PI_PHYD)	ID (INSTANCE)
Process End Detail (PD_PEND)	Program (PROCESS_NAME)

2. For the PD\_UPD, PD\_UPDB, PI\_UPI, and PI\_UPIB records, the instance of the first record is used.

When record instances cannot be uniquely identified from the information acquired from the OS, the performance data collected for each record instance is correct. In this case, however, the device corresponding to the instance (for example, the corresponding NIC for the Network Interface Overview (PI\_NETI) record) cannot be identified. Furthermore, if the system environment has been modified, the integrity of the record instance cannot be guaranteed, and, as a result, correct real-time data updating and historical data summarization cannot be executed.

## Notes on cases in which records cannot be collected and on the application event log

### ■ Notes on cases in which records cannot be collected

To use PFM - Agent for Platform to collect the performance data of the records listed below, the objects must be in a monitoring-enabled state on the performance console<sup>#</sup>. The table below shows the objects that correspond to various records, the source (service) names that are output in the event log, and the performance extension DLLs.

#

You can check the object names that correspond to individual records in Performance Management. If objects corresponding to individual records do not exist, make the objects monitorable by following the procedure published in Microsoft Knowledge Base provided by Microsoft Corporation.

*Table 5-12:* Objects that correspond to various records, source (service) names that are output in the event log, and performance extension DLLs

Category	Record name (Record ID)	Object name	Source (service) output to event log	Performance extension DLL
Disk	Logical Disk Overview (PI_LOGD)	LogicalDisk	PerfDisk	PerfDisk.dll
	Physical Disk Overview (PI_PHYD)	PhysicalDisk		
Protocol	ICMP Overview (PI_ICMP)	ICMP	Tcpip	perfctrs.dll
	ICMP Version 6 Overview(PI_ICM6)	ICMPv6		
	IP Overview (PI_IP)	IP or IPv4		
	IP Version 6 Overview(PI_IP6)	IP or IPv6		
	TCP Overview (PI_TCP)	TCP or TCPv4		
	TCP Version 6 Overview(PI_TCP6)	TCP or TCPv6		

Category	Record name (Record ID)	Object name	Source (service) output to event log	Performance extension DLL	
	UDP Overview (PI_UDP)	UDP or UDPv4			
	UDP Version 6 Overview(PI_UDP6)	UDP or UDPv6			
Network-related	Network Interface Overview (PI_NETI)	Network Interface			
	NBT Overview (PI_NBT)	NBT Connection			
	WINS Server Overview (PI_WINS)	WINS Server	Wins	winsctrs.dll	
	Browser Overview (PI_BRSR)	Browser	PerfNet	perfnet.dll	
	Server Work Queues Overview (PI_SVRQ)	Server Work Queues			
	System Overview (PI)	Redirector			
		Server			
OS in general (processor, memory, etc.)		Cache	PerfOS	PerfOS.dll	
		Memory			
		Objects			
		System			
		Processor			
	Processor Overview (PI_PCSR)				
	Page File Detail (PD_PAGEF)	Paging File			
Process-related	Process Detail (PD)	Process	PerfProc	PerfProc.dll	
	Process Detail Interval (PD_PDI)				

Category	Record name (Record ID)	Object name	Source (service) output to event log	Performance extension DLL
	Process End Detail (PD_PEND)			
	Workgroup Summary (PI_WGRP)			
Active Directory	Active Directory Overview(PI_AD)	Database	ESENT	esentprf.dll
		NTDS	NTDS	ntdsperf.dll
		DNS	DNS	dnsperf.dll
General	Generic Data Detail (PD_GEND)	Objects set by the collection data addition utility	Differs for each object.	
	Generic Data Interval (PI_GENI)			
Other	Event Log (PD_ELOG)	Not applicable	(Not applicable)	
	Device Detail (PD_DEV)			
	Service Process Detail (PD_SVC)			

■ Application event logs when records cannot be correctly collected

If `Perflib` (the source (service) name common to all objects or the source (service) name of each object) is recorded in an application event log, PFM - Agent for Platform may not run normally, or it may not be possible to collect the records corresponding to that source (service) in some cases. If the application event logs described in the table below are recorded, re-install the source (service), eliminate the cause identified in Microsoft Knowledge Base provided by Microsoft Corporation, or ask the company that developed the source (service) about a corrective measure, and restore an environment in which no application event log is recorded. The table below shows examples of application event logs that are recorded when PFM - Agent for Platform does not run normally or the records corresponding to the source (service) cannot be collected.

*Table 5-13: Examples of application event logs when records cannot be collected normally*

Event ID	Source (service) name	Event log details
1008	Perflib <sup>#</sup>	Service " <i>service-name</i> " (DLL " <i>dll-name</i> ") could not be opened. Performance data for this service cannot be used. The returned status code is data <code>DWORD 0</code> .
1009	Perflib <sup>#</sup>	An exception occurred during the opening of the service " <i>service-name</i> " (DLL " <i>dll-name</i> "). Performance data for this service cannot be used. The returned status code is data <code>DWORD 0</code> .
1010	Perflib <sup>#</sup>	An exception occurred or an invalid status was returned during the collection of the service " <i>service-name</i> " (DLL " <i>dll-name</i> "). Performance data returned from the counter DLL is not returned to the performance data block. The returned exception or status code is data <code>DWORD 0</code> .
1011	Perflib <sup>#</sup>	The library file " <i>dll-name</i> " specified for the service " <i>service-name</i> " could not be opened. Performance data for this service cannot be used. The status code is data <code>DWORD 0</code> .
2001	Perflib <sup>#</sup>	Service " <i>service-name</i> " does not have a Performance subkey, or its key could not be opened. Performance counter is not collected for this service. The Win32 error code is returned as data.
2002	Perflib <sup>#</sup>	Opening of the service " <i>service-name</i> " with a DLL " <i>dll-name</i> " took longer than the established standby time. There may be an error in this extendable counter or the service that is collecting data, or the system may have been busy when this call was tried.
2000	PerfDisk	Logical volume information cannot be read from the system. The returned status code is data <code>DWORD 0</code> .

#

For details about application event logs output by Perflib that are not listed in the above table, see the Microsoft Knowledge Base.

### Notes on records

- If Windows Server 2003 or Windows Server 2008 is running in the Internet Protocol version 6 (IPv6) environment, the performance information for the following records cannot be collected:
  - ICMP Overview (PI\_ICMP)
  - IP Overview (PI\_IP)
  - TCP Overview (PI\_TCP)

- UDP Overview (PI\_UDP)
- For those multi-instance records that have `_Total` in their instance names, the total value and average value for all instances are collected. If instance information is modified during a collection interval, value inconsistency may result.
- If the system resource is changed during record collection, the Agent Collector service issues the following message to the common message log and does not collect records twice:  

```
KAVF11406-W The system resources have been modified.  
(record-id)
```
- PFM - Agent for Platform cannot handle values that are greater than the data types defined in the data model. If values that are greater than the data types defined in the data model are collected, accurate values cannot be displayed.

### Notes on using the program name of a process

Data acquired from the Windows performance registry is set as the program name of a process. This name may not match the name displayed in Windows Task Manager or System Monitor in terms of case, for example.

When the program name of a process is used for defining an alarm or the display condition for the fields to be displayed in a report, it is case-sensitive. Check the program name of the process, including its case, by following the procedure described below. Afterwards, you can use the verified program name of the process to specify a monitoring process in an alarm definition or the display condition for the fields to be displayed in a report.

To check the program name of a process:

1. Start PFM - Web Console.
2. Start the report wizard.

For details about how to start the report wizard, see the chapter explaining creation of reports for operation analysis in the manual *Job Management Partner 1/Performance Management User's Guide*.

3. Define the fields to be displayed in the report.

In the report wizard's New Report > Field window, specify the record and field to be monitored.

- Record: Process Detail (PD)
  - Field: Program (INSTANCE)
4. Complete report creation by following the report wizard.
  5. Display the created report.

The program names of all processes within the system are displayed.

## Record generation results when data cannot be collected

The following explains the record generation results when data to be stored in fields cannot be collected:

- Records cannot be generated

When PFM - Agent for Platform cannot collect performance data to be stored in the fields defined as ODBC key fields, no records are generated.

- A record having a field with `Unknown` or `UNKNOWN` as its value is generated

When the value acquired from the OS is `unknown` or a value cannot be acquired for a field whose data type is *character string*, a record having a field with `Unknown` or `UNKNOWN` as its value is generated.

## Notes on reserved records

If PFM - Agent for Platform 07-00 or earlier is upgraded to 08-00 or later, records reserved in 08-00 or later appear in **Record** in the New Report > Field window of the PFM - Web Console report wizard during history collection setup. These records can be modified. However, if they are modified and then specified for data collection, no records will be collected. The following message is issued to the common message log during the first collection attempt only:

```
KAVF11201-W An illegal collection event occurred. (record-id,
rc=maintenance-information)
```

*Reference note:*

When you perform a new installation of PFM - Agent for Platform 08-00 or later, the properties of the reserved records are not displayed.

## Installing Active Directory

PFM - Agent for Platform 08-11 or later provides the Active Directory Overview (`PI_AD`) record for collecting Active Directory information. To collect performance data for Active Directory, you must first install Active Directory. In an environment in which Active Directory is not available, the KAVF11304-W message is output and the record cannot be collected. The following describes how to install Active Directory.

To install Active Directory:

1. Execute the `dcpromo` command.

From the Windows **Start** menu, choose **Run**. The **Run** dialog box appears. Enter `dcpromo` in the **Name** text box, and then click **OK**. The Active Directory installation wizard starts.

2. Install Active Directory.

Install Active Directory as directed by the Active Directory installation wizard.

## List of records

The table below shows the records that can be collected by PFM - Agent for Platform and the information stored in these records by category.

*Table 5-14: PFM - Agent for Platform record list (by category)*

Category	Record name	Record ID	Information stored
Active Directory	Active Directory Overview	PI_AD	Performance data per unit time on Active Directory, which is a directory service
Service function	WINS Server Overview	PI_WINS	Performance data per unit time on the communication of the WINS server service. This information cannot be used with Windows Server 2003 (x64) and the 64-bit version of Windows Server 2008.
System Memory Processor Network	System Overview	PI	Performance data per unit time on the following Windows performance objects: <ul style="list-style-type: none"> <li>• Cache objects</li> <li>• Memory objects</li> <li>• Objects objects</li> <li>• Processor objects</li> <li>• Redirector objects</li> <li>• Server objects</li> <li>• System objects</li> </ul>
Disk	Logical Disk Overview	PI_LOGD	Performance data per unit time on read, write, and transfer operations involving the logical partitions on a hard disk drive or fixed disk drive and on the areas of the logical partitions
	Physical Disk Overview	PI_PHYD	Performance data per unit time on read, write, and transfer operations involving a hard disk drive or fixed disk drive
Network	Browser Overview	PI_BRSR	Performance data per unit time on the Windows Browser service
	NBT Overview	PI_NBT	Performance data per unit time on the rate at which data was sent/received via a single NBT connection from the local computer to a remote computer

Category	Record name	Record ID	Information stored
	Network Interface Overview	PI_NETI	Performance data per unit time on the rate at which data and packets were sent/received via a TCP/IP connection and the number of different types of errors that occurred on the connection
Network processor	Server Work Queues Overview	PI_SVRQ	Performance data per unit time on the queue size of the server and the processing in the queue
Process	Process Detail	PD	Performance data at a given point in time showing the state of a single process, such as paging, memory, or time usage
	Process Detail Interval	PD_PDI	Performance data at a given point in time showing the state of a single process, such as paging, memory, or time usage
	Process End Detail	PD_PEND	Performance data showing the state existing after process termination
	Workgroup Summary	PI_WGRP	Performance data that summarizes, by workgroup, records stored in the Process Detail (PD) record at a given point in time
Process-related	Device Detail	PD_DEV	Performance data that shows the state of the file system driver and kernel driver devices at a given point in time
	Service Process Detail	PD_SVC	Performance data that shows, at a given point in time, the state of the application services, such as the Win32 process, that are registered in the Service Control Manager (SCM)
Processor	Processor Overview	PI_PCSR	Performance data per unit time on the processor's arithmetic operations, logical computation, initialization of peripheral device operations, the rate of interrupts such as process thread executions, and elapsed times
Protocol	ICMP Overview	PI_ICMP	Performance data per unit time on the rate at which ICMP messages were sent/received by the system using the ICMP protocol of Internet Protocol Version 4, and the number of different types of ICMP errors

Category	Record name	Record ID	Information stored
	ICMP Version 6 Overview	PI_ICM6	Performance data per unit of time on the rate at which ICMP messages were sent/received by the system using the ICMP protocol of Internet Protocol Version 6, and the number of different types of ICMP errors
	IP Overview	PI_IP	Performance data per unit time on the rate at which IP Datagrams were sent/received using the IP protocol of Internet Protocol Version 4, and the number of different types of IP errors
	IP Version 6 Overview	PI_IP6	Performance data per unit time on the rate at which IP Datagrams were sent/received using the IP protocol of Internet Protocol Version 6, and the number of different types of IP errors
	TCP Overview	PI_TCP	Performance data per unit time on the rate at which TCP segments were sent/received using the TCP protocol of Internet Protocol Version 4, and the number of TCP connections
	TCP Version 6 Overview	PI_TCP6	Performance data per unit time on the rate at which TCP segments were sent/received using the TCP protocol of Internet Protocol Version 6, and the number of TCP connections
	UDP Overview	PI_UDP	Performance data per unit time on the rate at which UDP Datagrams were sent/received using the UDP protocol of Internet Protocol Version 4, and the number of different types of UDP errors
	UDP Version 6 Overview	PI_UDP6	Performance data per unit time on the rate at which UDP Datagrams were sent/received using the UDP protocol of Internet Protocol Version 6, and the number of different types of UDP errors
Message	Event Log	PD_ELOG	Event log data including the following information about applications, systems, and security at given points in time: <ul style="list-style-type: none"> <li>• Times in each event log</li> <li>• Event source</li> <li>• Event type</li> <li>• Event ID</li> <li>• Event explanation</li> </ul>

Category	Record name	Record ID	Information stored
Memory	Page File Detail	PD_PAGF	Performance data showing the state of the system's paging file instance at a given point in time
User-defined record	Generic Data Detail	PD_GEND	User-defined performance data showing the state at a given point in time
	Generic Data Interval	PI_GENI	User-defined performance data per unit time
	Application Summary	PD_APP	Performance data that summarizes, by application, the records stored in the Process Detail (PD) record at a given point in time
	User Data Detail	PD_UPD	User-specific performance data showing the state at a given point in time
	User Data Detail - Extended	PD_UPDB	
	User Data Interval	PI_UPI	User-specific performance data per unit time
	User Data Interval - Extended	PI_UPIB	
Reserved record	Active Server Pages	PI_ASP2	Reserved records, which cannot be used
	Active Server Pages Overview	PI_ASP	
	AppleTalk Overview	PI_APPLE	
	Broker Service - MSNLogon	PI_BRKS	
	Chat Service Overview	PI_CHAT	
	Content Index Detail	PD_CIND	
	Content Index Filter Detail	PD_CINF	
	Exchange Conn for Lotus cc:Mail	PI_ECCM	
	Exchange Database Overview	PI_EDB	
	Exchange Dir Service Overview	PI_EDS	
	Exchange Info Store Perf Data	PI_EIPD	

Category	Record name	Record ID	Information stored
	Exchange Info Store Private	PI_EIPR	
	Exchange Info Store Public	PI_EIPU	
	Exchange Internet Mail Service	PI_EIMS	
	Exchange Internet Protocols	PI_EINP	
	Exchange MSMail Conn Interchange	PI_EMCI	
	Exchange MSMail Conn PC MTA Srv	PI_EMTC	
	Exchange MTA Connections	PI_EMTC	
	Exchange MTA Performance	PI_EMTC	
	Exchange Web Component Overview	PI_EWEB	
	FTP Server Overview	PI_FTSP	
	FTP Server Service Overview	PI_FTSP	
	Gateway Service for NetWare	PI_GTWY	
	Gopher Service Overview	PI_GOPH	
	HTTP Content Index Overview	PI_HTCI	
	HTTP Service Overview	PI_HTTP	
	Image Detail	PD_IMAG	
	Internet Addon Services Global	PI_IASG	
	Internet Info Server Global	PI_IIS	
	LDAP Server Overview	PI_LDAP	

Category	Record name	Record ID	Information stored
	Membership Agent Overview	PI_MEMA	
	Microsoft Commerce Server	PI_MCS	
	NetBEUI Interface Overview	PI_BEUI	
	NetBEUI Resource Overview	PI_BEUR	
	Network Link IPX Overview	PI_LIPX	
	Network Link NetBIOS Overview	PI_LBIO	
	Network Link SPX Overview	PI_LSPX	
	Network Segment Overview	PI_NSEG	
	NNTP Commands	PI_NWSC	
	NNTP Server	PI_NWSS	
	NNTP Server Client Overview	PI_NTFC	
	NNTP Server Service Overview	PI_NTFS	
	POP3 Server Overview	PI_POP3	
	Process Address Space Detail	PD_ADRS	
	Send Mail Overview	PI_SNDM	
	SMTP Server Overview	PI_SMTP	
	SMTP Server Service Overview	PI_SMT2	
	Telephony Overview	PI_TELE	
	Thread Detail	PD_THRD	
	Thread Details Detail	PD_THD	

<b>Category</b>	<b>Record name</b>	<b>Record ID</b>	<b>Information stored</b>
	Vote Management Overview	PI_VOTE	
	Web Proxy Server Cache Overview	PI_WPSC	
	Web Proxy Server Service	PI_WPSS	
	Web Service Overview	PI_WEB	
	WinSock Proxy Server Overview	PI_WSPS	

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## Active Directory Overview (PI\_AD)

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### Function

The Active Directory Overview (PI\_AD) record stores the performance data per unit time on Active Directory, which is a directory service. For Active Directory monitoring examples, see *1.3.2(7) Active Directory monitoring examples*.

*Note:*

In an environment in which Active Directory is not available, a warning message is issued and the Active Directory Overview (PI\_AD) record cannot be acquired. For details about how to install Active Directory, see *Installing Active Directory* in this chapter.

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

None

### Lifetime

From the time the Active Directory service is started until it terminates.

### Record size

- Fixed portion: 1533 bytes
- Variable portion: 0 bytes

### Fields

PFM-View name (PFM-Manager name)	Description	Summary	Format	Delta	Not Support ed versions	Data source
AB Client Sessions(AB_CLIE NT_SESSIONS)	The number of connected Address Book client sessions	HILO	ulong	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Supported versions</b>	<b>Data source</b>
ATQ Threads LDAP(ATQ_THR EADS_LDAP)	The number of threads the current ATQ has allocated for LDAP request processing	COPY	ulong	No	--	--
ATQ Threads Other(ATQ_THRE ADS_OTHER)	The number of threads the current ATQ has allocated for DS services other than LDAP	COPY	ulong	No	--	--
Cache % Hit(CACHE_HIT)	The percentage of page requests for database files that were executed by the database cache without generating a file operation	AVG	double	No	--	--
Cache Page Fault Stalls/ sec(CACHE_PAG E_FAULT_STALL S_SEC)	The number per second of page faults that could not be serviced because no pages were available for allocation from the database cache	AVG	double	No	--	--
Cache Page Faults/ sec(CACHE_PAG E_FAULTS_SEC)	The number per second of page requests for database files that required the database cache manager to allocate a new page from the database cache	AVG	double	No	--	--
Cache Size(CACHE_SIZ E)	The amount of system memory used by the database cache manager to store frequently used information from the database files	COPY	ulong	No	--	--
DRA In After Compress(DRA_I N_AFTER_COMP RESS)	The compressed size (in bytes) of inbound compressed replication data. Size after compression, from DSAs in other sites.	COPY	ulong	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
DRA In After Compress/ sec(DRA_IN_AFT ER_COMPRESS_ PER_SEC)	The compressed size (in bytes) of inbound compressed replication data. Size after compression, from DSAs in other sites (bytes/second).	AVG	double	No	--	--
DRA In Before Compress(DRA_I N_BEFORE_COM PRESS)	The original size (in bytes) of inbound compressed replication data. Size before compression, from DSAs in other sites.	COPY	ulong	No	--	--
DRA In Before Compress/ sec(DRA_IN_BEF ORE_COMPRESS_ PER_SEC)	The original size (in bytes) of inbound compressed replication data. Size before compression, from DSAs in other sites (bytes/second).	AVG	double	No	--	--
DRA In Not Compress(DRA_I N_NOT_COMPRE SS)	The number of incoming bytes replicated that were not compressed at the source (that is, from DSAs in the same site)	COPY	ulong	No	--	--
DRA In Not Compress/ sec(DRA_IN_NOT _COMPRESS_PE R_SEC)	The number of incoming bytes replicated that were not compressed at the source (that is, from DSAs in the same site) (bytes/second)	AVG	double	No	--	--
DRA In Total(DRA_IN_TO TAL)	The total number of bytes replicated in. This counter is the sum of the number of uncompressed bytes (never compressed) and the number of compressed bytes (after compression).	COPY	ulong	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Supported versions</b>	<b>Data source</b>
DRA In Total/ sec(DRA_IN_TOT AL_PER_SEC)	The total number of bytes replicated in. This counter is the sum of the number of uncompressed bytes (never compressed) and the number of compressed bytes (after compression) (bytes/second).	COPY	double	No	--	--
DRA In Object Updates in Pkt(DRA_IN_OBJ ECT_UPDATES_I N_PKT)	The number of object updates received in the current directory replication update packet that have not yet been applied to the local server	COPY	ulong	No	--	--
DRA In Objects/ sec(DRA_IN_OBJ ECTS_PER_SEC)	The number of objects received (per second) from neighbors through inbound replication. A neighbor is a domain controller from which the local domain controller replicates locally (objects/second).	AVG	double	No	--	--
DRA In Property Apply/ sec(DRA_IN_PRO PERTY_APPLY_P ER_SEC)	The number of properties that are updated (per second) due to the incoming property's winning the reconciliation logic that determines the final value to be replicated (properties/second)	AVG	double	No	--	--
DRA In Property Filter/ sec(DRA_IN_PRO PERTY_FILTER_P ER_SEC)	The number of changes to object properties received (per second) during the replication that have already been made (properties/second)	AVG	double	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
DRA In Values/ sec(DRA_IN_VAL UES_PER_SEC)	The number of values of object properties received (per second) from replication partners in which the values are for object properties that belong to distinguished names (properties/second)	AVG	double	No	--	--
DRA Out After Compress(DRA_O UT_AFTER_COM PRESS)	The compressed size (in bytes) of outbound compressed replication data. Size after compression, from DSAs in other sites.	COPY	ulong	No	--	--
DRA Out After Compress/ sec(DRA_OUT_A FTER_COMPRES S_PER_SEC)	The compressed size (in bytes) of outbound compressed replication data. Size after compression, from DSAs in other sites (bytes/second).	AVG	double	No	--	--
DRA Out Before Compress(DRA_O UT_BEFORE_CO MPRESS)	The original size (in bytes) of outbound compressed replication data. Size before compression, from DSAs in other sites.	COPY	ulong	No	--	--
DRA Out Before Compress/ sec(DRA_OUT_B EFORE_COMPRE SS_PER_SEC)	The original size (in bytes) of outbound compressed replication data. Size before compression, from DSAs in other sites (bytes/second).	AVG	double	No	--	--
DRA Out Not Compress(DRA_O UT_NOT_COMPR ESS)	The number of bytes replicated out that were not compressed (that is, from DSAs in the same site)	COPY	ulong	No	--	--
DRA Out Not Compress/ sec(DRA_OUT_N OT_COMPRESS_ PER_SEC)	The number of bytes replicated out that were not compressed (that is, from DSAs in the same site) (bytes/second)	AVG	double	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Supported versions</b>	<b>Data source</b>
DRA Out Total(DRA_OUT_ TOTAL)	The total number of bytes replicated out. This counter is the sum of the number of uncompressed bytes (never compressed) and the number of compressed bytes (after compression).	COPY	ulong	No	--	--
DRA Out Total/ sec(DRA_OUT_T OTAL_PER_SEC)	The total number of bytes replicated out. This counter is the sum of the number of uncompressed bytes (never compressed) and the number of compressed bytes (after compression) (bytes/second).	AVG	double	No	--	--
DRA Out Objects Filter/ sec(DRA_OUT_O BJECTS_FILTER_ PER_SEC)	The number of objects that were determined (per second) by outbound replication to have no updates that the outbound partner did not already have (objects/second)	AVG	double	No	--	--
DRA Out Objects/ sec(DRA_OUT_O BJECTS_PER_SE C)	The number of objects replicated out (objects/second)	AVG	double	No	--	--
DRA Out Property/ sec(DRA_OUT_P ROPERTY_PER_S EC)	The number of properties replicated out. (properties/second).	AVG	double	No	--	--
DRA Out Values/ sec(DRA_OUT_V ALUES_PER_SEC )	The number of object property values containing DNs sent (per second) to outbound replication partners (properties/second)	AVG	double	No	--	--
DRA Pending Replication Sync(DRA_PENDI NG_REPLICATIO N_SYNC)	The number of directory synchronizations that are queued for this server but not yet processed	COPY	ulong	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
DRA Sync Failures on SM(DRA_SYNC_FAILURES_ON_SM)	The number of synchronization requests made to neighbors that failed because their schema are not synchronized	COPY	ulong	No	--	--
DRA Sync Requests Made(DRA_SYNC_REQUESTS_MADE)	The number of synchronization requests made to neighbors	COPY	ulong	No	--	--
DRA Sync Requests Successful(DRA_SYNC_REQUESTS_SUCCESSFUL)	The number of synchronization requests made to neighbors that were successfully returned	COPY	ulong	No	--	--
DS Directory Reads/sec(DS_DIRECTORY_READS_PER_SEC)	The number of directory reads per second	AVG	double	No	--	--
DS Directory Searches/sec(DS_DIRECTORY_SEARCHES_PER_SEC)	The number of directory searches per second	AVG	double	No	--	--
DS Directory Writes/sec(DS_DIRECTORY_WRITES_PER_SEC)	The number of directory writes per second	AVG	double	No	--	--
DS Monitor List Size(DS_MONITOR_LIST_SIZE)	The number of requests to be reported when objects are updated that are currently registered with this DSA	COPY	ulong	No	--	--
DS Name Cache hit rate(DS_NAME_CACHE_HIT_RATE)	The percentage of directory object name component lookups that are satisfied out of the DSA's name cache	AVG	double	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
DS Notify Queue Size(DS_NOTIFY_QUEUE_SIZE)	The number of pending update notifications that have been queued but not yet sent to clients	COPY	ulong	No	--	--
DS Sec DP Events(DS_SEC_DP_EVENTS)	The number of security descriptor propagation events that are queued but not yet processed	COPY	ulong	No	--	--
DS Sec DP Runtime Queue(DS_SEC_DP_RUNTIME_QUEUE)	The number of objects that remain to be examined while the current directory service security descriptor propagator event is being processed	COPY	ulong	No	--	--
DS Threads in Use(DS_THREADS_IN_USE)	The current number of threads in use by the directory service (which is different from the number of threads in the directory service process)	COPY	ulong	No	--	--
Interval(INTERVAL)	Collection interval during which the record was stored (seconds). For a real-time report, the first value is 5. If records are summarized into a historical report, the last stored value is displayed.	COPY	ulong	No	--	RECORD_TIME (T1) - RECORD_TIME (T0)
Interval2(INTERVAL2)	Collection interval during which the record was stored (seconds). For a real-time report, the first value is 5. If records are summarized into a historical report, the total of the summarized records is displayed.	ADD	ulong	No	--	RECORD_TIME (T1) - RECORD_TIME (T0)
Kerberos Authentications(KERBEROS_AUTHENTICATIONS)	The number of times per second that clients used a ticket to this DC in order to authenticate to this DC	AVG	double	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
LDAP Active Threads(LDAP_ACTIVE_THREADS)	The current number of threads in use by the LDAP subsystem of the local directory service	COPY	ulong	No	--	--
LDAP Bind Time(LDAP_BIND_TIME)	The time in milliseconds needed for the last successful LDAP bind	COPY	ulong	No	--	--
LDAP Client Sessions(LDAP_CLIENT_SESSIONS)	The number of currently connected LDAP client sessions	HILO	ulong	No	--	--
LDAP Searches/sec(LDAP_SEARCHES_PER_SEC)	The rate (per second) at which LDAP clients perform search operations	AVG	double	No	--	--
LDAP Successful Binds/sec(LDAP_SUCCESSFUL_BINDS_PER_SEC)	The percentage of LDAP bind attempts (per second) that are successful	AVG	double	No	--	--
LDAP UDP operations/sec(LDAP_UDP_OPERATIONS_PER_SEC)	The number of User Datagram Protocol (UDP) operations that the LDAP server is processing per second	AVG	double	No	--	--
Log Record Stalls/sec(LOG_RECORD_STALLS_SEC)	The number per second of log records that could not be added to the log buffers because the buffers were full	AVG	double	No	--	--
Log Threads Waiting(LOG_THREADS_WAITING)	The number of threads waiting for data to be written to the log file so that a database update could be completed	COPY	ulong	No	--	--
Log Writes/sec(LOG_WRITES_PER_SEC)	The number of times per second that data in the log buffers was written to a log file	AVG	double	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
NTLM Authentications(N TLM_AUTHENTICATIONS)	The number per second of NTLM authentications provided by this DC	AVG	double	No	--	--
Record Time(RECORD_TIME)	Time at which the record was created	COPY	time_t	No	--	--
Record Type(INPUT_RECORD_TYPE)	Record name. Always AD.	COPY	char(8)	No	--	--
SAM Password Changes/sec(SAM_PASSWORD_CHANGES_SEC)	The number per second of SAM password changes	AVG	double	No	--	--
Table Open Cache % Hit(TABLE_OPEN_CACHE_HIT)	The percentage of database tables opened by using cached schema information	AVG	double	No	--	--
Table Open Cache Hits/sec(TABLE_CACHE_HITS_SEC)	The number of database tables opened per second by using cached schema information	AVG	double	No	--	--
Table Open Cache Misses/sec(TABLE_OPEN_CACHE_MISSES_SEC)	The number of database tables opened per second without using cached schema information	AVG	double	No	--	--
Table Opens/sec(TABLE_OPEN_SEC)	The number of database tables opened per second	AVG	double	No	--	--
Zone Transfer Failure(ZONE_TRANSFER_FAILURE)	The total number of zone transfers that the master DNS server failed to perform	COPY	ulong	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Zone Transfer Request Received(ZONE_TRANSFER_REQUEST_RECEIVED)	The total number of zone transfer requests that the master DNS server received	COPY	ulong	No	--	--
Zone Transfer SOA Request Sent(ZONE_TRANSFER_SOA_REQUEST_SENT)	The total number of zone transfer SOA (start of authority) requests that the secondary DNS server sent	COPY	ulong	No	--	--
Zone Transfer Success(ZONE_TRANSFER_SUCCESS)	The total number of zone transfers that the master DNS server performed successfully	COPY	ulong	No	--	--

## Application Summary (PD\_APP)

### Function

The Application Summary (PD\_APP) record stores performance data that summarizes, by application, the records stored in the Process Detail (PD) record at a given point in time. One record is stored for each application. This record is a multi-instance record.

*Note:*

To change the application definition, you must change the settings from PFM - Web Console.

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Offset	0	No
Log	No	Yes
LOGIF	Blank	Yes
Sync Collection With	Detail Records, PD	No

### ODBC key field

PD\_APP\_APPLICATION\_NAME

### Lifetime

From the time the setting for monitoring application operation is specified using PFM - Web Console until the setting is deleted.

### Record size

- Fixed portion: 681 bytes
- Variable portion: 984 bytes

### Fields

PFM-View name (PFM-Manager name)	Description	Summary	Format	Delta	Not Support ed versions	Data source
Application Name(APPLICATI ON_NAME)	The name specified by Application monitoring setting	--	string(6 4)	No	--	--

PFM-View name (PFM-Manager name)	Description	Summary	Format	Delta	Not Supported versions	Data source
Application Status(APPLICATION_STATUS)	<p>The results of all Process Range conditions. NORMAL or ABNORMAL is displayed.</p> <p>When a blank is displayed for Process01 Status -Process15 Status, the blank is ignored.</p> <p>NORMAL: All the results of Process01 Status -Process15 Status are NORMAL.</p> <p>ABNORMAL: At least one of the results of Process01 Status -Process15 Status is ABNORMAL</p> <p>Blank: The settings are not set.</p>	--	string(10)	No	--	--
Application Exist(APPLICATION_EXIST)	<p>The results of all Process Range conditions. NORMAL or ABNORMAL is displayed.</p> <p>When a blank is displayed for Process01 Status -Process15 Status, the blank is ignored.</p> <p>NORMAL: At least one of the results of Process01 Status -Process15 Status is NORMAL.</p> <p>ABNORMAL: All the results of Process01 Status -Process15 Status are ABNORMAL.</p> <p>Blank: The settings are not set.</p>	--	string(10)	No	--	--
Interval(INTERVAL)	Interval for which the Application Summary (PD_APP) record was stored (in seconds). The normal value is 0.	--	ulong	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Process01 Count(PROCESS0 1_COUNT)	The number of processes currently operating	--	word	No	--	--
Process01 Kind(PROCESS01 _KIND)	The specified type of the condition is displayed	--	string(4)	No	--	--
Process01 Name(PROCESS0 1_NAME)	Process name	--	string(3 2)	No	--	--
Process01 Range(PROCESS0 1_RANGE)	The range conditions for each process. The conditions are displayed as "Minimum value-Maximum value".	--	string(1 2)	No	--	--
Process01 Status(PROCESS0 1_STATUS)	The Process Range condition result for each process. NORMAL, ABNORMAL, or a blank is displayed. NORMAL: No error exists. ABNORMAL: An error exists. Blank: The settings are not set.	--	string(1 0)	No	--	--
Process02 Count(PROCESS0 2_COUNT)	The number of processes currently operating	--	word	No	--	--
Process02 Kind(PROCESS02 _KIND)	The specified type of the condition is displayed	--	string(4)	No	--	--
Process02 Name(PROCESS0 2_NAME)	Process name	--	string(3 2)	No	--	--
Process02 Range(PROCESS0 2_RANGE)	The range conditions for each process. The conditions are displayed as "Minimum value-Maximum value".	--	string(1 2)	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Process02 Status(PROCESS0 2_STATUS)	The Process Range condition result for each process. NORMAL, ABNORMAL, or a blank is displayed. NORMAL: No error exists. ABNORMAL: An error exists. Blank: The settings are not set.	--	string(1 0)	No	--	--
Process03 Count(PROCESS0 3_COUNT)	The number of processes currently operating.	--	word	No	--	--
Process03 Kind(PROCESS03 _KIND)	The specified type of the condition is displayed.	--	string(4)	No	--	--
Process03 Name(PROCESS0 3_NAME)	Process name	--	string(3 2)	No	--	--
Process03 Range(PROCESS0 3_RANGE)	The range conditions for each process. The conditions are displayed as "Minimum value-Maximum value".	--	string(1 2)	No	--	--
Process03 Status(PROCESS0 3_STATUS)	The Process Range condition result for each process. NORMAL, ABNORMAL, or a blank is displayed. NORMAL: No error exists. ABNORMAL: An error exists. Blank: The settings are not set.	--	string(1 0)	No	--	--
Process04 Count(PROCESS0 4_COUNT)	The number of processes currently operating	--	word	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Process04 Kind(PROCESS04 _KIND)	The specified type of the condition is displayed	--	string(4)	No	--	--
Process04 Name(PROCESS04 _NAME)	Process name	--	string(32)	No	--	--
Process04 Range(PROCESS04 _RANGE)	The range conditions for each process. The conditions are displayed as "Minimum value-Maximum value".	--	string(12)	No	--	--
Process04 Status(PROCESS04 _STATUS)	The Process Range condition result for each process. NORMAL, ABNORMAL, or a blank is displayed. NORMAL: No error exists. ABNORMAL: An error exists. Blank: The settings are not set.	--	string(10)	No	--	--
Process05 Count(PROCESS05 _COUNT)	The number of processes currently operating	--	word	No	--	--
Process05 Kind(PROCESS05 _KIND)	The specified type of the condition is displayed	--	string(4)	No	--	--
Process05 Name(PROCESS05 _NAME)	Process name	--	string(32)	No	--	--
Process05 Range(PROCESS05 _RANGE)	The range conditions for each process. The conditions are displayed as "Minimum value-Maximum value".	--	string(12)	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Process05 Status(PROCESS05_STATUS)	The Process Range condition result for each process. NORMAL, ABNORMAL, or a blank is displayed. NORMAL: No error exists. ABNORMAL: An error exists. Blank: The settings are not set.	--	string(10)	No	--	--
Process06 Count(PROCESS06_COUNT)	The number of processes currently operating	--	word	No	--	--
Process06 Kind(PROCESS06_KIND)	The specified type of the condition is displayed	--	string(4)	No	--	--
Process06 Name(PROCESS06_NAME)	Process name	--	string(32)	No	--	--
Process06 Range(PROCESS06_RANGE)	The range conditions for each process. The conditions are displayed as "Minimum value-Maximum value".	--	string(12)	No	--	--
Process06 Status(PROCESS06_STATUS)	The Process Range condition result for each process. NORMAL, ABNORMAL, or a blank is displayed. NORMAL: No error exists. ABNORMAL: An error exists. Blank: The settings are not set.	--	string(10)	No	--	--
Process07 Count(PROCESS07_COUNT)	The number of processes currently operating	--	word	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Process07 Kind(PROCESS07 _KIND)	The specified type of the condition is displayed	--	string(4)	No	--	--
Process07 Name(PROCESS07 _NAME)	Process name	--	string(32)	No	--	--
Process07 Range(PROCESS07 _RANGE)	The range conditions for each process. The conditions are displayed as "Minimum value-Maximum value".	--	string(12)	No	--	--
Process07 Status(PROCESS07 _STATUS)	The Process Range condition result for each process. NORMAL, ABNORMAL, or a blank is displayed. NORMAL: No error exists. ABNORMAL: An error exists. Blank: The settings are not set.	--	string(10)	No	--	--
Process08 Count(PROCESS08 _COUNT)	The number of processes currently operating	--	word	No	--	--
Process08 Kind(PROCESS08 _KIND)	The specified type of the condition is displayed	--	string(4)	No	--	--
Process08 Name(PROCESS08 _NAME)	Process name	--	string(32)	No	--	--
Process08 Range(PROCESS08 _RANGE)	The range conditions for each process. The conditions are displayed as "Minimum value-Maximum value".	--	string(12)	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Process08 Status(PROCESS08_STATUS)	The Process Range condition result for each process. NORMAL, ABNORMAL, or a blank is displayed. NORMAL: No error exists. ABNORMAL: An error exists. Blank: The settings are not set.	--	string(10)	No	--	--
Process09 Count(PROCESS09_COUNT)	The number of processes currently operating	--	word	No	--	--
Process09 Kind(PROCESS09_KIND)	The specified type of the condition is displayed	--	string(4)	No	--	--
Process09 Name(PROCESS09_NAME)	Process name	--	string(32)	No	--	--
Process09 Range(PROCESS09_RANGE)	The range conditions for each process. The conditions are displayed as "Minimum value-Maximum value".	--	string(12)	No	--	--
Process09 Status(PROCESS09_STATUS)	The Process Range condition result for each process. NORMAL, ABNORMAL, or a blank is displayed. NORMAL: No error exists. ABNORMAL: An error exists. Blank: The settings are not set.	--	string(10)	No	--	--
Process10 Count(PROCESS10_COUNT)	The number of processes currently operating	--	word	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Process10 Kind(PROCESS10 _KIND)	The specified type of the condition is displayed	--	string(4)	No	--	--
Process10 Name(PROCESS10 _NAME)	Process name	--	string(3 2)	No	--	--
Process10 Range(PROCESS10 _RANGE)	The range conditions for each process. The conditions are displayed as "Minimum value-Maximum value".	--	string(1 2)	No	--	--
Process10 Status(PROCESS10 _STATUS)	The Process Range condition result for each process. NORMAL, ABNORMAL, or a blank is displayed. NORMAL: No error exists. ABNORMAL: An error exists. Blank: The settings are not set.	--	string(1 0)	No	--	--
Process11 Count(PROCESS11 _COUNT)	The number of processes currently operating	--	word	No	--	--
Process11 Kind(PROCESS11 _KIND)	The specified type of the condition is displayed	--	string(4)	No	--	--
Process11 Name(PROCESS11 _NAME)	Process name	--	string(3 2)	No	--	--
Process11 Range(PROCESS11 _RANGE)	The range conditions for each process. The conditions are displayed as "Minimum value-Maximum value".	--	string(1 2)	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Process11 Status(PROCESS1 1_STATUS)	The Process Range condition result for each process. NORMAL, ABNORMAL, or a blank is displayed. NORMAL: No error exists. ABNORMAL: An error exists. Blank: The settings are not set.	--	string(1 0)	No	--	--
Process12 Count(PROCESS1 2_COUNT)	The number of processes currently operating	--	word	No	--	--
Process12 Kind(PROCESS12 _KIND)	The specified type of the condition is displayed	--	string(4)	No	--	--
Process12 Name(PROCESS1 2_NAME)	Process name	--	string(3 2)	No	--	--
Process12 Range(PROCESS1 2_RANGE)	The range conditions for each process. The conditions are displayed as "Minimum value-Maximum value".	--	string(1 2)	No	--	--
Process12 Status(PROCESS1 2_STATUS)	The Process Range condition result for each process. NORMAL, ABNORMAL, or a blank is displayed. NORMAL: No error exists. ABNORMAL: An error exists. Blank: The settings are not set.	--	string(1 0)	No	--	--
Process13 Count(PROCESS1 3_COUNT)	The number of processes currently operating	--	word	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Process13 Kind(PROCESS13 _KIND)	The specified type of the condition is displayed	--	string(4)	No	--	--
Process13 Name(PROCESS13 _NAME)	Process name	--	string(3 2)	No	--	--
Process13 Range(PROCESS13 _RANGE)	The range conditions for each process. The conditions are displayed as "Minimum value-Maximum value".	--	string(1 2)	No	--	--
Process13 Status(PROCESS13 _STATUS)	The Process Range condition result for each process. NORMAL, ABNORMAL, or a blank is displayed. NORMAL: No error exists. ABNORMAL: An error exists. Blank: The settings are not set.	--	string(1 0)	No	--	--
Process14 Count(PROCESS14 _COUNT)	The number of processes currently operating	--	word	No	--	--
Process14 Kind(PROCESS14 _KIND)	The specified type of the condition is displayed	--	string(4)	No	--	--
Process14 Name(PROCESS14 _NAME)	Process name	--	string(3 2)	No	--	--
Process14 Range(PROCESS14 _RANGE)	The range conditions for each process. The conditions are displayed as "Minimum value-Maximum value".	--	string(1 2)	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Process14 Status(PROCESS14_STATUS)	The Process Range condition result for each process. NORMAL, ABNORMAL, or a blank is displayed. NORMAL: No error exists. ABNORMAL: An error exists. Blank: The settings are not set.	--	string(10)	No	--	--
Process15 Count(PROCESS15_COUNT)	The number of processes currently operating	--	word	No	--	--
Process15 Kind(PROCESS15_KIND)	The specified type of the condition is displayed	--	string(4)	No	--	--
Process15 Name(PROCESS15_NAME)	Process name	--	string(32)	No	--	--
Process15 Range(PROCESS15_RANGE)	The range conditions for each process. The conditions are displayed as "Minimum value-Maximum value".	--	string(12)	No	--	--
Process15 Status(PROCESS15_STATUS)	The Process Range condition result for each process. NORMAL, ABNORMAL, or a blank is displayed. NORMAL: No error exists. ABNORMAL: An error exists. Blank: The settings are not set.	--	string(10)	No	--	--
Record Time(RECORD_TIME)	Time at which the record was created	--	time_t	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Record Type(INPUT_REC ORD_TYPE)	Record name. Always APP.	--	char(8)	No	--	--

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## Browser Overview (PI\_BRSR)

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### Function

The Browser Overview (PI\_BRSR) record stores the performance data per unit time on the Windows Browser service.

*Note:*

This record cannot be collected if the Computer Browser service (service name: `Browser`) provided by the OS is stopped.

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

None

### Lifetime

None

### Record size

- Fixed portion: 1,001 bytes
- Variable portion: 0 bytes

### Fields

PFM-View name (PFM-Manager name)	Description	Summary	Format	Delta	Not Support ed versions	Data source
Announcements Domain/ sec(ANNOUNCE MENTS_DOMAI N_PER_SEC)	Rate at which a domain announced itself to the network (announcements/ second).	AVG	float	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Announcements Server/ sec(ANNOUNCE MENTS_SERVER _PER_SEC)	Rate at which the domain server announced itself to the server (announcements/second).	AVG	float	No	--	--
Announcements Total/ sec(ANNOUNCE MENTS_TOTAL_ PER_SEC)	Total value of the Announcements Server/ sec field and the Announcements Domain/ sec field (announcements/ second).	AVG	float	No	--	--
Duplicate Master Announcements(D UPLICATE_MAS TER_ANNOUNC EMENTS)	Number of times the master browser detected other master browsers within the same domain. #	AVG	ulong	No	--	--
Election Pkts/ sec(ELECTION_P ACKETS_PER_SE C)	Rate at which the workstation received browser election packets (packets/second).	AVG	float	No	--	--
Enumerations Domain/ sec(ENUMERATI ONS_DOMAIN_P ER_SEC)	Rate at which the workstation processed domain reference requests (requests/second).	AVG	float	No	--	--
Enumerations Other/ sec(ENUMERATI ONS_OTHER_PE R_SEC)	Rate at which the workstation processed reference requests other than domain or server reference requests (requests/second).	AVG	float	No	--	--
Enumerations Server/ sec(ENUMERATI ONS_SERVER_P ER_SEC)	Rate at which the workstation processed server reference requests (requests/second).	AVG	float	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Enumerations Total/ sec(ENUMERATI ONS_TOTAL_PE R_SEC)	Rate at which the workstation processed reference requests (requests/second). Total value of the Enumerations Server/sec, Enumerations Domain/sec, and Enumerations Other/ sec fields.	AVG	float	No	--	--
Illegal Datagrams/ sec(ILLEGAL_DA TAGRAMS_PER_ SEC)	Rate at which the workstation received Datagrams having an invalid format (Datagrams/ second).	AVG	float	No	--	--
Interval(INTERVA L)	Collection interval time in which records were stored (in seconds). For a real-time report, the first value is 5. If records are summarized into a historical report, the total of the summarized records is displayed.	ADD	ulong	No	--	RECORD_TI ME (T1) - RECORD_TI ME (T0)
Mailslot Allocations Failed(MAILSLOT _ALLOCATIONS_ FAILED)	Number of times the Datagram receiver failed to allocate a buffer for storing a user mail slot entry. #	AVG	ulong	No	--	--
Mailslot Opens Failed/ sec(MAILSLOT_O PENS_FAILED_P ER_SEC)	Rate at which the workstation received mail slot messages to be delivered to other workstations' mail slots (messages/second).	AVG	float	No	--	--
Mailslot Receives Failed(MAILSLOT _RECEIVES_FAIL ED)	Number of mail slot messages that could not be received due to transport errors. #	AVG	ulong	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Mailslot Writes Failed(MAILSLOT WRITES_FAILED)	Number of mail slot messages that were received normally but could not be written into mail slots. #	AVG	ulong	No	--	--
Mailslot Writes/ sec(MAILSLOT WRITES_PER_SECOND)	Rate at which mail slot messages were received normally (messages/ second).	AVG	float	No	--	--
Missed Mailslot Datagrams(MISSED MAILSLOT_DATAGRAMS)	Number of mail slot Datagrams that were discarded due to a configuration or allocation limit. #	AVG	ulong	No	--	--
Missed Server Announcements(MISSED_SERVER ANNOUNCEMENTS)	Number of server announcements that were lost due to a configuration or allocation limit. #	AVG	ulong	No	--	--
Missed Server List Reqs(MISSED_SERVER_LIST_REQUESTS)	Number of requests to extract a browser server list that were received by the workstation but could not be processed. #	AVG	ulong	No	--	--
Record Time(RECORD_TIME)	Time at which the record was created.	COPY	time_t	No	--	--
Record Type(INPUT_RECORD_TYPE)	Record name. Always BRSR.	COPY	char(8)	No	--	--
Server Announce Allocs Failed/ sec(SERVER_AN NOUNCE_ALLOC_FAIL_PER_SECOND)	Rate at which server announcements or domain announcements failed due to memory shortage (failures/second).	AVG	float	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Server List Reqs/ sec(SERVER_LIST _REQUESTS_PER _SEC)	Rate at which the workstation processed requests to extract a browser server list (requests/second).	AVG	float	No	--	--

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## Device Detail (PD\_DEV)

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### Function

The Device Detail (PD\_DEV) record stores the performance data that shows the state of the file system driver and kernel driver devices at a given point in time. This is a multi-instance record.

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

- PD\_DEV\_DEVICE\_NAME
- PD\_DEV\_DEVICE\_TYPE

### Lifetime

From the installation of device drivers until their uninstallation.

### Record size

- Fixed portion: 681 bytes
- Variable portion: 2,392 bytes

### Fields

PFM-View name (PFM-Manager name)	Description	Summary	Format	Delta	Not Supported versions	Data source
Active(ACTIVE)	Indicates whether the device was active during data collection. The following values are valid: - YES - NO	--	string(8)	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Depend Group Name(DEPEND_G ROUP_NAME)	List of group names that must be loaded before devices are loaded. If there is no group name that must be loaded, this field is left blank.	--	string(256)	No	--	--
Depend Service Name(DEPEND_S ERVICE_NAME)	List of service names that must be loaded before devices are loaded. If there is no service name that must be loaded, this field is left blank.	--	string(256)	No	--	--
Device Name(DEVICE_N AME)	Device name. Name used by the user interface program to identify a device.	--	string(256)	No	--	--
Device Type(DEVICE_TY PE)	One of the following two device service types: - FILE_SYSTEM_DRIVER: File system's device driver service - KERNEL_DRIVER: Kernel's device driver service	--	string(36)	No	--	--

PFM-View name (PFM-Manager name)	Description	Summary	Format	Delta	Not Support ed versions	Data source
Error Control(ERROR_C ONTROL)	<p>Severity of the error that occurred during device service startup. The following values are valid.</p> <p>- CRITICAL: If possible, the starting program records the error in an error log. If the startup procedure used the normal configuration that was previously used, the startup fails. In other cases, use the normal configuration that was previously used to restart the system.</p> <p>- IGNORE: The starting program records the error in an error log and continues the startup operation.</p> <p>- NORMAL: The starting program records the error in an error log, displays a message in a pop-up box, and continues the startup operation.</p> <p>- SEVERE: The starting program records the error in an error log. If the startup procedure used the normal configuration that was previously used, the startup operation continues. In other cases, use the normal configuration that was previously used to restart the system.</p>	--	string(16)	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Group Name(GROUP_N AME)	Group name in the group list that determines the loading order registered in the registry, to which this device belongs. If the device does not belong to any group, this field is left blank.	--	string(256)	No	--	--
Image Path(IMAGE_PAT H)	Device image path name. If the device is not active, this field is left blank. If the image path name cannot be acquired because no information exists in the registry, this field is left blank.	--	string(1024)	No	--	--
Interval(INTERVA L)	Always 0.	--	ulong	No	--	--
Object Name(OBJECT_N AME)	Object name used by the system to load device drivers. If the default object name created by the I/O system is to be used as the driver name, this field is left blank.	--	string(256)	No	--	--
Record Time(RECORD_TI ME)	Time at which the record was created.	--	time_t	No	--	--
Record Type(INPUT_REC ORD_TYPE)	Record name. Always DEV.	--	char(8)	No	--	--

PFM-View name (PFM-Manager name)	Description	Summary	Format	Delta	Not Supported versions	Data source
Start Constant(START_ CONSTANT)	<p>The device's start value. The following values are available:</p> <ul style="list-style-type: none"> <li>- AUTO: The device automatically starts when the system starts.</li> <li>- BOOT: The device is started by the system loader.</li> <li>- DISABLED: Device service that cannot be started.</li> <li>- DEMAND: The device is started by SCM when a process calls the StartService facility (API).</li> <li>- SYSTEM: The device is started by the IoInitSystem facility (API).</li> </ul>	--	string(24)	No	--	--
Tag(TAG)	<p>Loading order within the group specified by the Group Name field if a tag sequential vector is specified in the field registry. If no device-related tag is specified, the value in this field is 0.</p>	--	long	No	--	--

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## Event Log (PD\_ELOG)

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### Function

The Event Log (PD\_ELOG) record stores event log data recording the following information about applications, systems, and security at given points in time:

- Time of each event log
- Event source
- Event type
- Event ID
- Event explanation

This is a multi-instance record.

#### Notes:

- This record collects the incremental data that has become available since the event log monitoring began. For a historical report, it may take as long as twice the specified collection interval before the first data is stored. For a real-time report, this record is collected during the second and subsequent collection intervals.
- If a large volume for an event log is recorded during the collection interval for this record, collection of other records may be delayed or a time-out may occur. When collecting this record, set the collection interval such that the incremental event log corresponding to a collection interval of 10 seconds does not exceed 1,000 items/  
*number-of-reports-to-be-concurrently-displayed*.
- This record collects only those event logs that occur during record collection after the start of the Agent Collector service. Therefore, it cannot collect event logs that occur during the start or stop of the OS, Performance Management, or collection of this record.
- This record collects the contents recorded in event logs, and thus is not suitable for automatically determining that the system has returned to the normal state after an error or warning was detected based on an alarm. Therefore, it is recommended that you use a setting, such as **Always notify**, that always issues notification about an alarm event when an error or warning condition is met.
- Note the following when you collect the data for this record in Windows Server 2003 (x64) or the 64-bit version of Windows Server 2008: The values in the following fields in the event logs output by 64-bit applications might

differ from the information displayed in the 64-bit version of Event Viewer (displayed by choosing **Administrative Tools** and then **Event Viewer**).

- The `Description` field outputs the content of the message KAVF11405-W.

- The `Event Category` field outputs an event category ID.

- You can use the collection data addition utility to specify the event log collection target.
- During record collection, if a non-collection target event log is changed to a collection target, the event logs that occurred since the previous collection time are collected.

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

- `PD_ELOG_EVENT_ID`
- `PD_ELOG_SOURCE_NAME`
- `PD_ELOG_TIME_GENERATED`

### Lifetime

None

### Record size

- Fixed portion: 677 bytes
- Variable portion: 944 bytes

**Fields**

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Computer Name(COMPUTE R_NAME)	Name of the computer that generated the event.	--	string(3 6)	No	--	--
Description(DESC RIPTION)	Event log explanation.	--	string(5 12)	No	--	--
Event Category(EVENT_ CATEGORY)	Sub-category unique to the event source.	--	string(3 6)	No	--	--
Event ID(EVENT_ID)	Event ID.	--	ulong	No	--	--
Event Type ID(EVENT_TYPE _ID)	Event type identifier. One of the following values is used for this field. When the OS is Windows Server 2003 or earlier: 1: Error 2: Warning 4: Information 8: Success Audit 16: Failure Audit When the OS is Windows Server 2008: 0: Success Audit 0: Failure Audit 1: Critical 2: Error 3: Warning 4: Information 5: Verbose	--	ulong	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Event Type Name(EVENT_TY PE_NAME)	Event type. One of the following values is used for this field. When the OS is Windows Server 2003 or earlier: - Error - Warning - Information - Success Audit - Failure Audit When the OS is Windows Server 2008: - Error - Warning - Information - Success Audit - Failure Audit - Critical - Verbose	--	string(2 6)	No	--	--
Log Name(LOG_NAM E)	Event log type. The value of this field is one of the following: - Application - Security - System	--	string(2 6)	No	--	--
Record Time(RECORD_TI ME)	Time at which the record was created.	--	time_t	No	--	--
Record Type(INPUT_REC ORD_TYPE)	Record name. Always ELOG.	--	char(8)	No	--	--
Source Name(SOURCE_N AME)	Name of the source (application, service, driver, or subsystem) that generated the entry.	--	string(2 56)	No	--	--
Time Generated(TIME_ GENERATED)	Time at which the event entry was submitted.	--	time_t	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
User Name(USER_NA ME)	User name that was active when the event was recorded.	--	string(3 6)	No	--	--
User Sid(USER_SID)	Type of user security ID that was active when the event was recorded. One of the following values is used for this field: 1: User 2: Group 3: Domain 4: Alias 5: Known group 6: Deleted account 7: Invalid 8: Unknown type 9: Computer 0: No information	--	ulong	No	--	--

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## Generic Data Detail (PD\_GEND)

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### Function

The Generic Data Detail (PD\_GEND) record is a user record that stores user-defined performance data showing the state at a given point in time. Because this record can store only the specific performance data rather than all performance data of the collection target object, it can reduce overhead and disk usage.

Depending on the performance data type, data is stored in one of the following two fields:

- Double (DOUBLE\_DATA)
- String Data (STRING\_DATA)

This is a multi-instance record.

*Notes:*

- If the collection target instance specified by the collection data addition utility does not exist, a record whose Data Type (DATA\_TYPE) field value is blank and that contains no performance data is created.
- This record is not suitable for collecting the performance data of an instance when instances having the same name are frequently created and disappear. Of the instances specified as collection targets by the collection data addition utility, if those with the same name are frequently created and disappear within the same data collection interval, these separate instances are treated as the same instance, and as a result, correct performance data cannot be collected.
- For the instances to be specified as collection targets by the collection data addition utility, do not specify instances having the same name that can concurrently exist.

When multiple instances specified as collection targets specified by the collection data addition utility have the same name (#*n* is added to the Instance (INSTANCE) field of the Generic Data Detail (PD\_GEND) record), if one or more of these instances disappear, the performance data on the remaining active instances with the same name may become corrupt.

Also, when instances having the same name are newly generated, the performance data on the remaining active instances having the same name may become corrupt.

- If collection records are added by the collection data addition utility during a collection interval, 0 is displayed for the initial performance value for a

record for which a performance value is computed from the information collected during the previous collection interval.

- When a user record is specified in a Windows Server 2003 (x64) or 64-bit version of Windows Server 2008 environment, objects that do not support WOW64 are not displayed in the PI\_GENI-PD\_GEND Record Settings dialog box of the collection data addition utility.

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

- PD\_GEND\_INSTANCE
- PD\_GEND\_COUNTER\_NAME
- PD\_GEND\_OBJECT\_NAME

### Lifetime

After the record is added by the collection data addition utility until the record is deleted.

### Record size

- Fixed portion: 681 bytes
- Variable portion: 1,052 bytes

### Fields

PFM-View name (PFM-Manager name)	Description	Summary	Format	Delta	Not Support ed versions	Data source
Counter Name(COUNTER_ NAME)	Counter name.	--	string(2 56)	No	--	Counter name of Performance Console

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Data Type(DATA_TYPE)	Type of data accumulated in the record. The following normal values are available: - DOUBLE - STRING	--	string(12)	No	--	--
Double(DOUBLE_DATA)	Value displayed as a real or integer type.	--	double	No	--	--
Float(FLOAT_DATA)	Always 0.	--	float	No	--	--
Instance(INSTANCE)	Instance name. Left blank for a single-instance object.	--	string(256)	No	--	Instance name of Performance Console
Integer(INTEGER_DATA)	Always 0.	--	long	No	--	--
Interval(INTERVAL)	Collection interval during which the record was stored (seconds). For a real-time report, the first value is 5.	--	ulong	No	--	RECORD_TIME (T1) - RECORD_TIME (T0)
Object Name(OBJECT_NAME)	Object name.	--	string(256)	No	--	Object name of Performance Console
Record Time(RECORD_TIME)	Time at which the record was created.	--	time_t	No	--	--
Record Type(INPUT_RECORD_TYPE)	Record name. The default record name is GEND.	--	char(8)	No	--	--
String Data(STRING_DATA)	Integer-type value is displayed as a character string in the hexadecimal (0x) format.	--	string(256)	No	--	--

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## Generic Data Interval (PI\_GENI)

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### Function

The Generic Data Interval (PI\_GENI) is a user record that stores user-defined performance data per unit time. Because this record can store only the specific performance data rather than all performance data of the collection target object, it can reduce overhead and disk usage.

Depending on the performance data type, data is stored in one of the following two fields:

- Double (DOUBLE\_DATA)
- String Data (STRING\_DATA)

This is a multi-instance record.

*Notes:*

- If the collection target instance specified by the collection data addition utility does not exist, a record whose Data Type (DATA\_TYPE) field value is blank and that contains no performance data is created.
- This record is not suitable for collecting the performance data of an instance when instances having the same name are frequently created and disappear. Of the instances specified as collection targets by the collection data addition utility, if those with the same name are frequently created and disappear within the same data collection interval, these separate instances are treated as the same instance, and as a result, correct performance data cannot be collected.
- For the instances to be specified as collection targets by the collection data addition utility, do not specify instances with the same name that can concurrently exist.

When multiple instances specified as collection targets specified by the collection data addition utility have the same name (#*n* is added to the Instance (INSTANCE) field of the Generic Data Detail (PD\_GENI) record), if one or more of them disappear, the performance data on the remaining active instances with the same name may become corrupt.

Also, when instances having the same name are newly generated, the performance data on the remaining active instances having the same name may become corrupt.

- If collection records are added by the collection data addition utility during a collection interval, 0 is displayed for the initial performance value for a

record for which a performance value is computed from the information collected during the previous collection interval.

- When a user record is specified in a Windows Server 2003 (x64) or 64-bit version of Windows Server 2008 environment, objects that do not support WOW64 are not displayed in the PI\_GENI-PD\_GEND Record Settings dialog box of the collection data addition utility

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

- PI\_GENI\_INSTANCE
- PI\_GENI\_COUNTER\_NAME
- PI\_GENI\_OBJECT\_NAME

### Lifetime

After the record is added by the collection data addition utility until the record is deleted.

### Record size

- Fixed portion: 681 bytes
- Variable portion: 1,092 bytes

### Fields

PFM-View name (PFM-Manager name)	Description	Summary	Format	Delta	Not Support ed versions	Data source
Counter Name(COUNTER_ NAME)	Counter name.	COPY	string(2 56)	No	--	Counter name of Performance Console

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Data Type(DATA_TYPE )	Type of data accumulated in the record. The following normal values are available: - DOUBLE - STRING	COPY	string(1 2)	No	--	--
Double(DOUBLE_ DATA)	Value displayed as a real or integer type.	AVG	double	No	--	--
Float(FLOAT_DAT A)	Always 0.	AVG	float	No	--	--
Instance(INSTANC E)	Instance name. Left blank for a single-instance object.	COPY	string(2 56)	No	--	Instance name of Performance Console
Integer(INTEGER_ DATA)	Always 0.	AVG	ulong	No	--	--
Interval(INTERVA L)	Collection interval during which the record was stored (seconds). For a real-time report, the first value is 5. If records are summarized into a historical report, the last stored value is displayed.	COPY	ulong	No	--	RECORD_TI ME (T1) - RECORD_TI ME (T0)
Interval2(INTERV AL2)	Collection interval during which the record was stored (seconds). For a real-time report, the first value is 5. If records are summarized into a historical report, the total of the summarized records is displayed.	ADD	ulong	No	--	RECORD_TI ME (T1) - RECORD_TI ME (T0)
Object Name(OBJECT_N AME)	Object name.	COPY	string(2 56)	No	--	Object name of Performance Console
Record Time(RECORD_TI ME)	Time at which the record was created.	COPY	time_t	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Supported versions</b>	<b>Data source</b>
Record Type(INPUT_REC ORD_TYPE)	Record name. The default record name is GENI.	COPY	char(8)	No	--	--
String Data(String_DATA)	Integer-type value is displayed as a character string in the hexadecimal (0x) format.	COPY	string(2 56)	No	--	--

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## ICMP Overview (PI\_ICMP)

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### Function

The ICMP Overview (PI\_ICMP) record stores the performance data per unit time on the number of ICMP messages that are sent/received by the system that is using the ICMP protocol of Internet Protocol Version 4, and the number of various types of ICMP errors.

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

None

### Lifetime

None

### Record size

- Fixed portion: 1,113 bytes
- Variable portion: 0 bytes

### Fields

PFM-View name (PFM-Manager name)	Description	Summary	Format	Delta	Not Support ed versions	Data source
Interval(INTERVAL)	Collection interval during which the record was stored (seconds). For a real-time report, the first value is 5. If records are summarized into a historical report, the total of the summarized records is displayed.	ADD	ulong	No	--	RECORD_TIME (T1) - RECORD_TIME (T0)

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Messages Outbound Errors(MESSAGE S_OUTBOUND_E RRORS)	Number of ICMP messages that could not be sent due to problems detected inside ICMP, such as a buffer shortage, following the OS startup. #	AVG	ulong	No	--	--
Messages Rcvd Errors(MESSAGE S_RECEIVED_ER RORS)	Number of ICMP messages that were received but were judged to contain an error following the OS startup. #	AVG	ulong	No	--	--
Messages Rcvd/ sec(MESSAGES_ RECEIVED_PER_ SEC)	Rate at which ICMP messages were received (messages/second). This field also includes the messages that caused an error when they were received.	AVG	float	No	--	--
Messages Sent/ sec(MESSAGES_S ENT_PER_SEC)	Rate at which ICMP messages were sent (messages/second). This field also includes the messages that caused an error when they were sent.	AVG	float	No	--	--
Messages/ sec(MESSAGES_P ER_SEC)	Rate at which ICMP messages were sent/ received (messages/ second). This field also includes the messages that caused an error when they were sent/ received.	AVG	float	No	--	--
Rcvd Address Mask(RECEIVED_ ADDRESS_MAS K)	Number of ICMP address mask request messages received following the OS startup. #	AVG	ulong	No	--	--
Rcvd Address Mask Reply(RECEIVED_ ADDRESS_MAS K_REPLY)	Number of ICMP address mask reply messages received following the OS startup. #	AVG	ulong	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Rcvd Destination Unreachable(RECEIVED_DEST_UNREACHABLE)	Number of ICMP destination unreachable messages received following the OS startup. #	AVG	ulong	No	--	--
Rcvd Echo Reply/sec(RECEIVED_ECHO_REPLY_PER_SEC)	Rate at which ICMP echo reply messages were received (messages/second).	AVG	float	No	--	--
Rcvd Echo/sec(RECEIVED_ECHO_PER_SEC)	Rate at which ICMP echo messages were received (messages/second).	AVG	float	No	--	--
Rcvd Parameter Problem(RECEIVED_PARAMETER_PROBLEM)	Number of ICMP parameter error messages received. #	AVG	ulong	No	--	--
Rcvd Redirect/sec(RECEIVED_REDIRECT_PER_SEC)	Rate at which ICMP redirect messages were received (messages/second).	AVG	float	No	--	--
Rcvd Source Quench(RECEIVED_SOURCE_QUENCH)	Number of ICMP source quench messages received following the OS startup. #	AVG	ulong	No	--	--
Rcvd Time Exceeded(RECEIVED_TIME_EXCEEDED)	Number of ICMP time exceeded messages received following the OS startup. #	AVG	ulong	No	--	--
Rcvd Timestamp Reply/sec(RECEIVED_TIMESTAMP_REPLY_PER_SEC)	Rate at which ICMP time stamp reply messages were received (messages/second).	AVG	float	No	--	--
Rcvd Timestamp/sec(RECEIVED_TIMESTAMP_PER_SEC)	Rate at which ICMP time stamp request messages were received (messages/second).	AVG	float	No	--	--
Record Time(RECORD_TIME)	Time at which the record was created.	COPY	time_t	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Record Type(INPUT_REC ORD_TYPE)	Record name. Always ICMP.	COPY	char(8)	No	--	--
Sent Address Mask(SENT_ADD RESS_MASK)	Number of ICMP address mask request messages sent following the OS startup. #	AVG	ulong	No	--	--
Sent Address Mask Reply(SENT_ADD RESS_MASK_RE PLY)	Number of ICMP address mask reply messages sent following the OS startup. #	AVG	ulong	No	--	--
Sent Destination Unreachable(SENT _DESTINATION UNREACHABLE)	Number of ICMP destination unreachable messages sent following the OS startup. #	AVG	ulong	No	--	--
Sent Echo Reply/ sec(SENT_ECHO REPLY_PER_SEC )	Rate at which ICMP echo reply messages were sent (messages/second).	AVG	float	No	--	--
Sent Echo/ sec(SENT_ECHO_ PER_SEC)	Rate at which ICMP echo messages were sent (messages/second).	AVG	float	No	--	--
Sent Parameter Problem(SENT_PA RAMETER_PROB LEM)	Number of ICMP parameter error messages sent following the OS startup. #	AVG	ulong	No	--	--
Sent Redirect/ sec(SENT_REDIR ECT_PER_SEC)	Rate at which ICMP redirect messages were sent (messages/second).	AVG	float	No	--	--
Sent Source Quench(SENT_SO URCE_QUENCH)	Number of ICMP source quench messages sent following the OS startup. #	AVG	ulong	No	--	--
Sent Time Exceeded(SENT_T IME_EXCEEDED)	Number of ICMP time exceeded messages sent following the OS startup. #	AVG	ulong	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Sent Timestamp Reply/ sec(SENT_TIMES TAMP_REPLY_P ER_SEC)	Rate at which ICMP time stamp reply messages were sent (messages/second).	AVG	float	No	--	--
Sent Timestamp/ sec(SENT_TIMES TAMP_PER_SEC)	Rate at which ICMP time stamp request messages were sent (messages/ second).	AVG	float	No	--	--

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## ICMP Version 6 Overview (PI\_ICM6)

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### Function

The ICMP Version 6 Overview (PI\_ICM6) record stores the performance data per unit time on the number of ICMP messages that are sent/received by a system that is using the ICMP protocol of Internet Protocol Version 6, and the number of various types of ICMP errors.

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

None

### Lifetime

None

### Record size

- Fixed portion: 1,209 bytes
- Variable portion: 0 bytes

### Fields

PFM-View name (PFM-Manager name)	Description	Summary	Format	Delta	Not Support ed versions	Data source
Interval(INTERVAL)	Collection interval during which the record was stored (seconds). For a real-time report, the first value is 5. If records are summarized into a historical report, the total of the summarized records is displayed.	ADD	ulong	No	--	RECORD_TIME (T1) - RECORD_TIME (T0)

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Messages Outbound Errors(MESSAGE S_OUTBOUND_E RRORS)	Number of ICMP messages that could not be sent due to problems detected inside ICMP, such as a buffer shortage, following the OS startup #	AVG	ulong	No	--	--
Messages Rcvd Errors(MESSAGE S_RECEIVED_ER RORS)	Number of ICMP messages that were received but were judged to contain an error following the OS startup #	AVG	ulong	No	--	--
Messages Rcvd/ sec(MESSAGES_ RECEIVED_PER_ SEC)	Rate at which ICMP messages were received (messages/second). This field also includes the messages that caused an error when they were received.	AVG	float	No	--	--
Messages Sent/ sec(MESSAGES_S ENT_PER_SEC)	Rate at which ICMP messages were sent (messages/second). This field also includes the messages that caused an error when they were sent.	AVG	float	No	--	--
Messages/ sec(MESSAGES_P ER_SEC)	Rate at which ICMP messages were sent/ received (messages/ second). This field also includes the messages that caused an error when they were sent/ received.	AVG	float	No	--	--
Rcvd Destination Unreachable(RECE IVED_DEST_UN REACHABLE)	Number of ICMP destination unreachable messages received following the OS startup #	AVG	ulong	No	--	--
Rcvd Echo Reply/ sec(RECEIVED_E CHO_REPLY_PE R_SEC)	Rate at which ICMP echo reply messages were received (messages/ second)	AVG	float	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Supported versions</b>	<b>Data source</b>
Rcvd Echo/ sec(RECEIVED_E CHO_PER_SEC)	Rate at which ICMP echo messages were received (messages/second)	AVG	float	No	--	--
Rcvd Membership Query(RECEIVED _MEMBERSHIP_ QUERY)	The number of received Group Membership Query packets	AVG	ulong	No	--	--
Rcvd Membership Reduction(RECEI VED_MEMBERS HIP_REDUCTION )	The number of received Group Membership Reduction packets	AVG	ulong	No	--	--
Rcvd Membership Report(RECEIVE D_MEMBERSHIP _REPORT)	The number of received Group Membership Report packets	AVG	ulong	No	--	--
Rcvd Neighbor Advert(RECEIVE D_NEIGHBOR_A DVERT)	The number of received Neighbor Advertisement packets	AVG	ulong	No	--	--
Rcvd Neighbor Solicit(RECEIVED _NEIGHBOR_SO LICIT)	The number of received Neighbor Solicitation packets	AVG	ulong	No	--	--
Rcvd Packet Too Big(RECEIVED_P ACKET_TOO_BI G)	The number of received packets that are larger than anticipated	AVG	ulong	No	--	--
Rcvd Parameter Problem(RECEIVE D_PARAMETER_ PROBLEM)	Number of ICMP parameter error messages received #	AVG	ulong	No	--	--
Rcvd Redirect/ sec(RECEIVED_R EDIRECT_PER_S EC)	Rate at which ICMP redirect messages were received (messages/ second)	AVG	float	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Rcvd Router Advert(RECEIVED_ROUTER_ADVERT)	The number of received Router Advertisement packets	AVG	ulong	No	--	--
Rcvd Router Solicit(RECEIVED_ROUTER_SOLICIT)	The number of received Router Solicitation packets	AVG	ulong	No	--	--
Rcvd Time Exceeded(RECEIVED_TIME_EXCEEDED)	Number of ICMP time exceeded messages received following the OS startup #	AVG	ulong	No	--	--
Record Time(RECORD_TIME)	Time at which the record was created	COPY	time_t	No	--	--
Record Type(INPUT_RECORD_TYPE)	Record name. Always ICM6.	COPY	char(8)	No	--	--
Sent Destination Unreachable(SENT_DESTINATION_UNREACHABLE)	Number of ICMP destination unreachable messages sent following the OS startup #	AVG	ulong	No	--	--
Sent Echo Reply/sec(SENT_ECHO_REPLY_PER_SEC)	Rate at which ICMP echo reply messages were sent (messages/second)	AVG	float	No	--	--
Sent Echo/sec(SENT_ECHO_PER_SEC)	Rate at which ICMP echo messages were sent (messages/second)	AVG	float	No	--	--
Sent Membership Query(SENT_MEMBERSHIP_QUERY)	The number of sent Group Membership Query packets	AVG	ulong	No	--	--
Sent Membership Reduction(SENT_MEMBERSHIP_REDUCTION)	The number of sent Group Membership Reduction packets	AVG	ulong	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Supported versions</b>	<b>Data source</b>
Sent Membership Report(SENT_MEMBERSHIP_REPORT)	The number of sent Group Membership Report packets	AVG	ulong	No	--	--
Sent Neighbor Advert(SENT_NEIGHBOR_ADVERT)	The number of sent Neighbor Advertisement packets	AVG	ulong	No	--	--
Sent Neighbor Solicit(SENT_NEIGHBOR_SOLICIT)	The number of sent Neighbor Solicitation packets	AVG	ulong	No	--	--
Sent Packet Too Big(SENT_PACKET_TOO_BIG)	The number of sent packets that are larger sizes than anticipated	AVG	ulong	No	--	--
Sent Parameter Problem(SENT_PARAMETER_PROBLEM)	Number of ICMP parameter error messages sent following the OS startup #	AVG	ulong	No	--	--
Sent Redirect/sec(SENT_REDIRECT_PER_SEC)	Rate at which ICMP redirect messages were sent (messages/second)	AVG	float	No	--	--
Sent Router Advert(SENT_ROUTER_ADVERT)	The number of sent Router Advertisement packets	AVG	ulong	No	--	--
Sent Router Solicit(SENT_ROUTER_SOLICIT)	The number of sent Router Solicitation packets	AVG	ulong	No	--	--
Sent Time Exceeded(SENT_TIME_EXCEEDED)	Number of ICMP time exceeded messages sent following the OS startup #	AVG	ulong	No	--	--

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## IP Overview (PI\_IP)

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### Function

The IP Overview (PI\_IP) record stores the performance data per unit time on the number of times IP Datagram was sent/received when the IP protocol of Internet Protocol Version 4 was used, and the number of various types of IP errors.

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

None

### Lifetime

None

### Record size

- Fixed portion: 953 bytes
- Variable portion: 0 bytes

### Fields

PFM-View name (PFM-Manager name)	Description	Summary	Format	Delta	Not Support ed versions	Data source
Datagrams Forwarded/ sec(DATAGRAMS _FORWARDED_P ER_SEC)	Rate at which forwarding routes for Datagrams were searched for because the destinations were not final (Datagrams/second).	AVG	float	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Datagrams Outbound Discarded(DATAGRAMS_OUTBOUND_DISCARDED)	Number of outbound Datagrams that were discarded due to a problem such as a buffer shortage, even though no problem preventing transmission to the destination was detected following the OS startup. #	AVG	ulong	No	--	--
Datagrams Outbound No Route(DATAGRAMS_OUTBOUND_NO_ROUTE)	Number of outbound Datagrams that were discarded because the route for transmitting to the destination could not be detected following the OS startup. #	AVG	ulong	No	--	--
Datagrams Rcvd Address Errors(DATAGRAMS_RECEIVED_ADDRESS_ERRORS)	Number of received Datagrams that were destroyed because the IP address in the destination field of the IP header was not valid as an address that could be received by the system following the OS startup. #	AVG	ulong	No	--	--
Datagrams Rcvd Delivered/ sec(DATAGRAMS_REC_DELIVERED_PER_SEC)	Rate at which received Datagrams were delivered normally to an IP user protocol such as ICMP (Datagrams/second).	AVG	float	No	--	--
Datagrams Rcvd Discarded(DATAGRAMS_REC_DISCARDED)	Number of received Datagrams that were discarded due to a problem such as a buffer shortage, even though no problem preventing continued processing was detected following the OS startup. #	AVG	ulong	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Datagrams Rcvd Header Errors(DATAGRAMS_RECEIVED_HEADER_ERRORS)	Number of received Datagrams that were destroyed due to IP header errors following the OS startup. #	AVG	ulong	No	--	--
Datagrams Rcvd Unknown Protocol(DATAGRAMS_REC_UNKNOWN_PROTOCOL)	Number of normally received Datagrams with local address specification that were discarded due to an unknown or unsupported protocol. #	AVG	ulong	No	--	--
Datagrams Rcvd/ sec(DATAGRAMS_RECEIVED_PER_SEC)	Rate at which Datagrams were received via a network interface (Datagrams/second).	AVG	float	No	--	--
Datagrams Sent/ sec(DATAGRAMS_SENT_PER_SEC)	Rate at which Datagrams were sent via a network interface (Datagrams/second).	AVG	float	No	--	--
Datagrams/ sec(DATAGRAMS_PER_SEC)	Rate at which Datagrams were sent/received via a network interface (Datagrams/second). This field shows the total of the Datagrams Rcvd/sec and Datagrams Sent/sec fields.	AVG	float	No	--	--
Fragment Reassembly Failures(FRAGMENT_REASSEMBLY_FAILURES)	Number of failures, such as time-outs and errors, detected by the IP reassembly algorithm following the OS startup. #	AVG	ulong	No	--	--
Fragmentation Failures(FRAGMENTATION_FAILURES)	Number of Datagrams that were discarded because the Don't Fragment flag was set, even though fragmentation was necessary following the OS startup. #	AVG	ulong	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Fragmented Datagrams/ sec(FRAGMENTE D_DATAGRAMS_ PER_SEC)	Rate at which Datagrams were fragmented normally (Datagrams/second).	AVG	float	No	--	--
Fragments Created/ sec(FRAGMENTS _CREATED_PER_ SEC)	Rate at which IP fragments were generated through Datagram fragmentation (Datagrams/second).	AVG	float	No	--	--
Fragments Rcvd/ sec(FRAGMENTS _RECEIVED_PER_ SEC)	Rate at which IP fragments requiring reassembling were received (fragments/ second).	AVG	float	No	--	--
Fragments Reassembled/ sec(FRAGMENTS _RE_ASSEMBLE D_PER_SEC)	Rate at which IP fragments were correctly reassembled (fragments/second).	AVG	float	No	--	--
Interval(INTERVA L)	Collection interval during which the record was stored (seconds). For a real-time report, the first value is 5. If records are summarized into a historical report, the total of the summarized records is displayed.	ADD	ulong	No	--	RECORD_TI ME (T1) - RECORD_TI ME (T0)
Record Time(RECORD_TI ME)	Time at which the record was created.	COPY	time_t	No	--	--
Record Type(INPUT_REC ORD_TYPE)	Record name. Always IP.	COPY	char(8)	No	--	--

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## IP Version 6 Overview (PI\_IP6)

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### Function

The IP Version 6 Overview (PI\_IP6) record stores the performance data per unit time on the number of times IP Datagram was sent/received when the IP protocol of Internet Protocol Version 6 was used, and the number of various types of IP errors.

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

None

### Lifetime

None

### Record size

- Fixed portion: 953 bytes
- Variable portion: 0 bytes

### Fields

PFM-View name (PFM-Manager name)	Description	Summary	Format	Delta	Not Support ed versions	Data source
Datagrams Forwarded/ sec(DATAGRAMS _FORWARDED_P ER_SEC)	Rate at which forwarding routes for Datagrams were searched for because the destinations were not final (Datagrams/second)	AVG	float	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Datagrams Outbound Discarded(DATAGRAMS_OUTBOUND_DISCARDED)	The number of outbound datagrams that were discarded due to a problem such as a buffer shortage, even though no problem preventing transmission to the destination was detected after OS startup. This counter includes datagrams counted in Datagrams Forwarded/sec that meet this criterion. #	AVG	ulong	No	--	--
Datagrams Outbound No Route(DATAGRAMS_OUTBOUND_NO_ROUTE)	The number of outbound datagrams that were discarded because the transmission route to the destination could not be detected after OS startup. This counter includes datagrams counted in Datagrams Forwarded/sec that meet this criterion. #	AVG	ulong	No	--	--
Datagrams Rcvd Address Errors(DATAGRAMS_RECEIVED_ADDRESS_ERRORS)	Number of received Datagrams that were destroyed because the IP address in the destination field of the IP header was not valid as an address that could be received by the system following the OS startup #	AVG	ulong	No	--	--
Datagrams Rcvd Delivered/ sec(DATAGRAMS_REC_DELIVERED_PER_SEC)	Rate at which received Datagrams were delivered normally to an IP user protocol such as ICMP (Datagrams/second)	AVG	float	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Datagrams Rcvd Discarded(DATAGRAMS_REC_DISCARDED)	Number of received Datagrams that were discarded due to a problem such as a buffer shortage, even though no problem preventing continued processing was detected following the OS startup #	AVG	ulong	No	--	--
Datagrams Rcvd Header Errors(DATAGRAMS_RECEIVED_HEADER_ERRORS)	Number of received Datagrams that were destroyed due to IP header errors following the OS startup #	AVG	ulong	No	--	--
Datagrams Rcvd Unknown Protocol(DATAGRAMS_REC_UNKNOWN_PROTOCOL)	Number of normally received Datagrams with local address specification that were discarded due to an unknown or unsupported protocol #	AVG	ulong	No	--	--
Datagrams Rcvd/sec(DATAGRAMS_RECEIVED_PER_SEC)	The rate (datagrams/second) that IP datagrams were received from a network interface, including datagrams with errors	AVG	float	No	--	--
Datagrams Sent/sec(DATAGRAMS_SENT_PER_SEC)	The rate (datagrams/second) that IP datagrams were supplied to IP for transmission by local IP user-protocols (including ICMP). This counter does not include any datagrams counted in Datagrams Forwarded/sec.	AVG	float	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Datagrams/ sec(DATAGRAMS _PER_SEC)	The rate (datagrams/ second) at which datagrams were sent or received via a network interface, including datagrams with errors. This counter does not include any datagrams counted in Datagrams Forwarded/sec.	AVG	float	No	--	--
Fragment Reassembly Failures(FRAGME NT_RE_ASSEMB LY_FAILURES)	Number of failures, such as time-outs and errors, detected by the IP reassembly algorithm following the OS startup #	AVG	ulong	No	--	--
Fragmentation Failures(FRAGME NTATION_FAILU RES)	Number of Datagrams that were discarded because the Don't Fragment flag was set, even though fragmentation was necessary following the OS startup #	AVG	ulong	No	--	--
Fragmented Datagrams/ sec(FRAGMENTE D_DATAGRAMS_ PER_SEC)	Rate at which Datagrams were fragmented normally (Datagrams/second)	AVG	float	No	--	--
Fragments Created/ sec(FRAGMENTS _CREATED_PER_ SEC)	Rate at which IP fragments were generated through Datagram fragmentation (Datagrams/second)	AVG	float	No	--	--
Fragments Rcvd/ sec(FRAGMENTS _RECEIVED_PER_ SEC)	Rate at which IP fragments requiring reassembling were received (fragments/ second)	AVG	float	No	--	--
Fragments Reassembled/ sec(FRAGMENTS _RE_ASSEMBLE D_PER_SEC)	Rate at which IP fragments were correctly reassembled (fragments/second)	AVG	float	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Interval(INTERVAL)	Collection interval during which the record was stored (seconds). For a real-time report, the first value is 5. If records are summarized into a historical report, the total of the summarized records is displayed.	ADD	ulong	No	--	RECORD_TIME (T1) - RECORD_TIME (T0)
Record Time(RECORD_TIME)	Time at which the record was created.	COPY	time_t	No	--	--
Record Type(INPUT_RECORD_TYPE)	Record name. Always IP6.	COPY	char(8)	No	--	--

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## Logical Disk Overview (PI\_LOGD)

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### Function

The Logical Disk Overview (PI\_LOGD) record stores the performance data per unit time on reading from, writing to, and areas on the logical partitions on a hard disk drive or fixed disk drive.

This is a multi-instance record.

*Notes:*

- This record collects performance information on hard disks or fixed disk drives. It cannot monitor the performance information of a network disk, for example.
- If a character string beginning with `Harddisk` is displayed for the ID (INSTANCE) field of this record, data cannot be correctly collected for the fields listed below. This phenomenon occurs when the OS cannot recognize the disk volume normally. Furthermore, if `_Total` is set in the ID (INSTANCE) field, it indicates a total value for the collected records, and thus a correct value cannot be collected. Consequently, if this field is monitored with an alarm, it may report an invalid error.
  - The Drive Type (DRIVE\_TYPE) field is displayed as `NO ROOT DIR`.
  - The Page File Size Mbytes (PAGE\_FILE\_SIZE\_BYTES) field and the Total Size Mbytes (TOTAL\_DISK\_SIZE) field are displayed as 0.
- Stop the Agent Collector service before you create, modify, or delete a disk volume (including mounted volumes) in either of the following situations:
  - While this record is being collected
  - While the LogicalDisk object counter is being monitored by using a Windows administration tool (**System Monitor** or **Performance Logs and Alerts**) in the Performance console

If a disk volume is not displayed in the ID (INSTANCE) field even after the Agent Collector service is restarted, restart the OS. If you collect records without a restart, items cannot be correctly collected.
- If a security setting prevents you from accessing the disk volume that corresponds to the ID (INSTANCE) field of this record, no record is created for the disk volume. If you need to create a record for this disk volume, specify a security setting that allows access by a SYSTEM user account.
- If the startup type of the Windows Management Instrumentation service (service name: `WinMgmt`), which provides the OS system management

information, is set to `Disable`, the Page File Size Mbytes field cannot be collected.

- This record cannot be used for monitoring the disk usage at each mount point created by using the Windows folder mount function.

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

PI\_LOGD\_INSTANCE

### Lifetime

From the time a disk drive is configured until its configuration is modified

### Record size

- Fixed portion: 681 bytes
- Variable portion: 700 bytes

### Fields

PFM-View name (PFM-Manager name)	Description	Summary	Format	Delta	Not Supported versions	Data source
% Disk Read Time(PCT_DISK_READ_TIME)	Percentage of time the disk was busy when a read request was processed (%).	%	float	No	--	--
% Disk Time(PCT_DISK_TIME)	Percentage of time the disk was busy when a read or write request was processed (%). Normally, if this value continues to be close to 100%, it indicates heavy use of the disk.	%	float	No	--	--
% Disk Usage(PCT_DISK_USAGE)	Percentage of the disk space being used (%). #	%	float	No	--	100 - PCT_FREE_SPACE

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Supported versions</b>	<b>Data source</b>
% Disk Write Time(PCT_DISK_ WRITE_TIME)	Percentage of time the disk was busy when a write request was processed (%).	%	float	No	--	--
% Free Space(PCT_FREE_ SPACE)	Percentage of the free disk space (%). #	%	float	No	--	--
% Idle Time(PCT_IDLE_ TIME)	Percentage of the time the disk was idle (%).	%	float	No	--	--
Available Space Mbytes(FREE_DIS K_SIZE)	Same value as that in the Free Mbytes field. #	AVG	ulong	No	--	--
Avg Disk Bytes/ Read(AVG_DISK_ BYTES_PER_RE AD)	Average number of bytes transferred from the disk during read operations (bytes/operation).	AVG	float	No	--	--
Avg Disk Bytes/ Write(AVG_DISK_ BYTES_PER_WRI TE)	Average number of bytes transferred to the disk during write operations (bytes/operation).	AVG	float	No	--	--
Avg Disk Bytes/ Xfer(AVG_DISK_ BYTES_PER_TR ANSFER)	Average number of bytes transferred between disks during write or read operations (bytes/ operation). Normally, the larger the transfer size, the more efficiently the system is operating.	AVG	float	No	--	--
Avg Disk Queue Length(AVG_DIS K_QUEUE LENG TH)	Average number of write and read requests that entered the disk's queue.	AVG	float	No	--	--
Avg Disk Read Queue Length(AVG_DIS K_READ_QUEUE LENGTH)	Average number of read requests that entered the disk's queue.	AVG	float	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Avg Disk Secs/ Read(AVG_DISK_ SEC_PER_READ)	Average time it took to read data from the disk (seconds).	AVG	float	No	--	--
Avg Disk Secs/ Write(AVG_DISK_ SEC_PER_WRITE )	Average time it took to write data to the disk (seconds).	AVG	float	No	--	--
Avg Disk Secs/ Xfer(AVG_DISK_ SEC_PER_TRANS FER)	Average time it took for disk transfers (seconds).	AVG	float	No	--	--
Avg Disk Write Queue Length(AVG_DIS K_WRITE_QUEU E_LENGTH)	Average number of write requests that entered the disk's queue.	AVG	float	No	--	--
Current Disk Queue Length(CURRENT _DISK_QUEUE_L ENGTH)	Number of requests remaining in the disk that were waiting to be processed or are currently being processed. Normally, if the queue length continues to exceed 2, it indicates processor congestion. #	AVG	ulong	No	--	--
Disk Bytes/ sec(DISK_BYTES _PER_SEC)	Speed at which data was transferred between disks during write or read operations (bytes/second). Normally, the higher the transfer speed, the more efficiently the system is operating.	AVG	float	No	--	--
Disk Read Bytes/ sec(DISK_READ_ BYTES_PER_SEC )	Speed at which data was transferred to the disk during read operation (bytes/second).	AVG	float	No	--	--
Disk Reads/ sec(DISK_READS _PER_SEC)	Disk read processing speed (reads/second).	AVG	float	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Supported versions</b>	<b>Data source</b>
Disk Write Bytes/ sec(DISK_WRITE _BYTES_PER_SE C)	Speed at which data was transferred to the disk during write operation (bytes/second).	AVG	float	No	--	--
Disk Writes/ sec(DISK_WRITE S_PER_SEC)	Disk write processing speed (writes/second).	AVG	float	No	--	--
Disk Xfers/ sec(DISK_TRANS FERS_PER_SEC)	Disk read and write processing speed (transfers/second).	AVG	float	No	--	--
Drive Type(DRIVE_TYP E)	Disk type. The following values are valid: - FIXED - NO ROOT DIR - REMOVABLE - DRIVE UNKNOWN	COPY	string(3 6)	No	--	--
Free Mbytes(FREE_ME GABYTES)	Free disk space as part of the total usable area (MB). If this field is summarized in a historical report, the minimum value is displayed. #	LO	ulong	No	--	--
ID(INSTANCE)	Logical disk volume name. (that is, C: or D:)	COPY	string(2 56)	No	--	--
Interval(INTERVA L)	Collection interval during which the record was stored (seconds). For a real-time report, the first value is 5. If records are summarized into a historical report, the last stored value is displayed.	COPY	ulong	No	--	RECORD_TI ME (T1) - RECORD_TI ME (T0)

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Interval2(INTERVAL2)	Collection interval during which the record was stored (seconds). For a real-time report, the first value is 5. If records are summarized into a historical report, the total of the summarized records is displayed.	ADD	ulong	No	--	RECORD_TIME (T1) - RECORD_TIME (T0)
Page File Size Mbytes(PAGE_FILE_SIZE_BYTES)	Physical size (in megabytes) of the valid paging file allocated to the drive. In Windows NT, the value of this field is always 0. #	COPY	double	No	2008(x86), 2008(x64)	ReturnValue / 1MB
Record Time(RECORD_TIME)	Time at which the record was created.	COPY	time_t	No	--	--
Record Type(INPUT_RECORD_TYPE)	Record name. Always LOGD.	COPY	char(8)	No	--	--
Split IO/Sec(SPLIT_IO_PER_SEC)	Number of I/Os into which an I/O to the disk was split (splits/second). I/O splitting occurs when an I/O is too large to fit in a single I/O or when the disk requests data in fragmented sizes.	AVG	float	No	--	--
Total Size Mbytes(TOTAL_DISK_SIZE)	Disk size (MB). #	COPY	double	No	--	(total-number-of-clusters-on-the-disk x number-of-sectors-per-cluster x number-of-bytes-per-sector) / 1 MB

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## NBT Overview (PI\_NBT)

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### Function

The NBT Overview (PI\_NBT) record stores the performance data per unit time on the rate of data transfer that is made via a single NBT connection that connects the local computer to a remote computer.

This is a multi-instance record.

*Notes:*

If a record for the Instance (INSTANCE) field is newly created during a collection interval, the fields listed below displays 0 because their values are computed from the information collected during the previous interval.

- Bytes Rcvd/sec
- Bytes Sent/sec
- Bytes Total/sec

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

PI\_NBT\_INSTANCE

### Lifetime

None

### Record size

- Fixed portion: 681 bytes
- Variable portion: 308 bytes

**Fields**

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Bytes Rcvd/ sec(BYTES_RECE IVED_PER_SEC)	Rate at which the local computer received data via the NBT connection to a remote computer (bytes/ second).	AVG	float	No	--	--
Bytes Sent/ sec(BYTES_SENT _PER_SEC)	Rate at which the local computer sent data via the NBT connection to a remote computer (bytes/ second).	AVG	float	No	--	--
Bytes Total/ sec(BYTES_TOTA L_PER_SEC)	Rate at which the local computer sent/received data via the NBT connection to a remote computer (bytes/second).	AVG	float	No	--	--
Instance(INSTANC E)	Remote connection name. Shown as a NetBIOS name. If a period (.) is added to the 16th byte, it indicates that NBT connection was made by a remote computer.	COPY	string(2 56)	No	--	--
Interval(INTERVA L)	Collection interval during which the record was stored (seconds). For a real-time report, the first value is 5. If records are summarized into a historical report, the last stored value is displayed.	COPY	ulong	No	--	RECORD_TI ME (T1) - RECORD_TI ME (T0)
Interval2(INTERV AL2)	Collection interval during which the record was stored (seconds). For a real-time report, the first value is 5. If records are summarized into a historical report, the total of the summarized records is displayed.	ADD	ulong	No	--	RECORD_TI ME (T1) - RECORD_TI ME (T0)

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Supported versions</b>	<b>Data source</b>
Record Time(RECORD_TIME)	Time at which the record was created.	COPY	time_t	No	--	--
Record Type(INPUT_RECORD_TYPE)	Record name. Always NBT.	COPY	char(8)	No	--	--

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## Network Interface Overview (PI\_NETI)

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### Function

The Network Interface Overview (PI\_NETI) stores the performance data per unit time on the rate of data and packet transfer made via TCP/IP connection and the number of various types of errors that occurred in the TCP/IP connection.

This is a multi-instance record.

*Notes:*

In an environment that uses both IPv4 and IPv6, consolidated IPv4 and IPv6 information is collected.

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

PI\_NETI\_INSTANCE

### Lifetime

From NIC installation until its removal

### Record size

- Fixed portion: 681 bytes
- Variable portion: 532 bytes

**Fields**

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Bytes Rcvd/ sec(BYTES_RECEIVED_PER_SEC)	Rate at which data was received through the network interface (bytes/second).	AVG	float	No	--	--
Bytes Sent/ sec(BYTES_SENT_PER_SEC)	Rate at which data was sent through the network interface (bytes/second).	AVG	float	No	--	--
Bytes Total/ sec(BYTES_TOTAL_PER_SEC)	Rate at which data was sent/received through the network interface (bytes/second).	AVG	float	No	--	--
Current Bandwidth(CURRENT_BANDWIDTH)	Estimated network interface bandwidth (bits/second). If the bandwidth was stable or an accurate bandwidth estimate could not be obtained, the field shows an estimated nominal bandwidth (bits/second). #	AVG	ulong	No	2008 (x86), 2008 (x64)	--
Instance(INSTANCE)	Instance name for the network. The instance name is a loopback address (127.0.0.1), NIC, or dial-out WAN wrapper for each device. It is displayed in the order of TCP/IP protocol binding (loopback is always the first) as follows: - Driver name for NIC	COPY	string(256)	No	--	--
Interval(INTERVAL)	Collection interval during which the record was stored (seconds). For a real-time report, the first value is 5. If records are summarized into a historical report, the last stored value is displayed.	COPY	ulong	No	--	RECORD_TIME (T1) - RECORD_TIME (T0)

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Interval2(INTERV AL2)	Collection interval during which the record was stored (seconds). For a real-time report, the first value is 5. If records are summarized into a historical report, the total of the summarized records is displayed.	ADD	ulong	No	--	RECORD_TI ME (T1) - RECORD_TI ME (T0)
Output Queue Length(OUTPUT QUEUE_LENGTH )	Length of the outbound packet queue (number of packets). This field always shows 0 because the NDIS (Network Driver Interface Specification) puts the requests in the queue. #	AVG	ulong	No	--	--
Pkts Outbound Discarded(PACKETS_OUTBOUND_ DISCARDED)	Number of outbound packets selected for discarding by emptying the buffer area, even though no error preventing transmission was detected following the OS startup. #	AVG	ulong	No	--	--
Pkts Outbound Errors(PACKETS_ OUTBOUND_ER RORS)	Number of outbound packets that could not be transmitted due to an error following the OS startup. #	AVG	ulong	No	--	--
Pkts Rcvd Discarded(PACKETS_RECEIVED_ DISCARDED)	Number of received packets selected for discarding by emptying the buffer area, even though no error preventing transfer to an upper-layer protocol was detected following the OS startup. #	AVG	ulong	No	--	--
Pkts Rcvd Errors(PACKETS_ RECEIVED_ERR ORS)	Number of received packets containing an error preventing transfer to an upper-layer protocol following the OS startup. #	AVG	ulong	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Pkts Rcvd Non-Unicast/ sec(PACKETS_RE C_NON_UNICAS T_PER_SEC)	Rate at which non-unicast (subnet broadcast or subnet multicast) packets are transferred to an upper-layer protocol (packets/second).	AVG	float	No	--	--
Pkts Rcvd Unicast/ sec(PACKETS_RE C_UNICAST_PER _SEC)	Rate at which subnet unicast packets are transferred to an upper-layer protocol (packets/second).	AVG	float	No	--	--
Pkts Rcvd Unknown(PACKE TS_RECEIVED_U NKNOWN)	Number of packets that were received through the network interface but were discarded due to an unknown or unsupported protocol following the OS startup. #	AVG	ulong	No	--	--
Pkts Rcvd/ sec(PACKETS_RE CEIVED_PER_SE C)	Rate at which packets were received through the network interface (packets/second).	AVG	float	No	--	--
Pkts Sent Non-Unicast/ sec(PACKETS_SE NT_NON_UNICA ST_PER_SEC)	Rate at which packets were transferred by an upper-layer protocol to non-unicast (subnet broadcast or subnet multicast) addresses (packets/second).	AVG	float	No	--	--
Pkts Sent Unicast/ sec(PACKETS_SE NT_UNICAST_PE R_SEC)	Rate at which packets were transferred by an upper-layer protocol to subnet unicast addresses (packets/second).	AVG	float	No	--	--
Pkts Sent/ sec(PACKETS_SE NT_PER_SEC)	Rate at which packets were sent through the network interface (packets/second).	AVG	float	No	--	--
Pkts/ sec(PACKETS_PE R_SEC)	Rate at which packets were sent/received through the network interface (packets/second).	AVG	float	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Record Time(RECORD_TI ME)	Time at which the record was created.	COPY	time_t	No	--	--
Record Type(INPUT_REC ORD_TYPE)	Record name. Always NETI.	COPY	char(8)	No	--	--

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## Page File Detail (PD\_PAGF)

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### Function

The Page File Detail (PD\_PAGF) record stores the performance data showing the state of the system's paging file instance at a given point in time.

A paging file is a reserved disk area for backing up committed physical memory.

This is a multi-instance record.

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

PD\_PAGF\_INSTANCE

### Lifetime

From the setup of a virtual memory paging file until its setting is changed

### Record size

- Fixed portion: 681 bytes
- Variable portion: 264 bytes

### Fields

PFM-View name (PFM-Manager name)	Description	Summary	Format	Delta	Not Support ed versions	Data source
% Usage(PCT_USAGE)	Paging file usage (%). #	--	float	No	--	--
% Usage Peak(PCT_USAGE _PEAK)	Peak paging file usage (%). #	--	float	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Instance(INSTANCE)	Paging file file path. (Displayed as \\?\C:\pagefile.sys, for example)	--	string(256)	No	--	--
Interval(INTERVAL)	Collection interval time in which records were stored (in seconds). For a real-time report, the first value is 5.	--	ulong	No	--	RECORD_TIME (T1) - RECORD_TIME (T0)
Record Time(RECORD_TIME)	Time at which the record was created.	--	time_t	No	--	--
Record Type(INPUT_RECORD_TYPE)	Record name. Always PAGE.	--	char(8)	No	--	--

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## Physical Disk Overview (PI\_PHYD)

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### Function

The Physical Disk Overview (PI\_PHYD) record stores the performance data per unit time on reading from, writing to, and transfers involving a hard disk drive or fixed disk drive. The total or average value for partitioned logical partitions is used for a physical disk.

This is a multi-instance record.

*Notes:*

- If you add or delete a physical disk volume while this record is being collected or while the PhysicalDisk object counter is being monitored using one of the Windows administration tools, **System Monitor** or **Performance Logs and Alerts** in the Performance console, restart the Agent Collector service.
- If a physical disk is not displayed in the ID (INSTANCE) field even after the Agent Collector service is restarted, restart the OS. If you collect records without a restart, items cannot be correctly collected.

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

PI\_PHYD\_INSTANCE

### Lifetime

From the time a hard disk is configured until a hard disk is added, deleted, or the configuration is modified

### Record size

- Fixed portion: 681 bytes
- Variable portion: 596 bytes

**Fields**

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
% Disk Read Time(PCT_DISK_ READ_TIME)	Percentage of time the disk was busy when a read request was processed (%).	%	float	No	--	--
% Disk Time(PCT_DISK_ TIME)	Percentage of time the disk was busy when a read or write request was processed (%). Normally, if this value continues to be close to 100%, it indicates heavy use of the disk.	%	float	No	--	--
% Disk Write Time(PCT_DISK_ WRITE_TIME)	Percentage of time the disk was busy when a write request was processed (%).	%	float	No	--	--
% Idle Time(PCT_IDLE_ TIME)	Percentage of the time the disk was idle (%).	%	float	No	--	--
Avg Disk Bytes/ Read(AVG_DISK_ BYTES_PER_RE AD)	Average number of bytes transferred from the disk during read operations (bytes/operation).	AVG	float	No	--	--
Avg Disk Bytes/ Write(AVG_DISK_ BYTES_PER_WRI TE)	Average number of bytes transferred to the disk during write operations (bytes/operation).	AVG	float	No	--	--
Avg Disk Bytes/ Xfer(AVG_DISK_ BYTES_PER_TR ANSFER)	Average number of bytes transferred between disks during write or read operations (bytes/operation). Normally, the larger the transfer size, the more efficiently the system is operating.	AVG	float	No	--	--
Avg Disk Queue Length(AVG_DIS K_QUEUE LENG TH)	Average number of write and read requests that entered the disk's queue.	AVG	float	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Avg Disk Read Queue Length(AVG_DISK_READ_QUEUE_LENGTH)	Average number of read requests that entered the disk's queue.	AVG	float	No	--	--
Avg Disk Secs/Read(AVG_DISK_SEC_PER_READ)	Average time it took to read data from the disk (seconds).	AVG	float	No	--	--
Avg Disk Secs/Write(AVG_DISK_SEC_PER_WRITE)	Average time it took to write data to the disk (seconds).	AVG	float	No	--	--
Avg Disk Secs/Xfer(AVG_DISK_SEC_PER_TRANSFER)	Average time it took for disk transfers (seconds).	AVG	float	No	--	--
Avg Disk Write Queue Length(AVG_DISK_WRITE_QUEUE_LENGTH)	Average number of write requests that entered the disk's queue.	AVG	float	No	--	--
Current Disk Queue Length(CURRENT_DISK_QUEUE_LENGTH)	Number of requests remaining on the disk that were waiting to be processed or currently are being processed. Normally, if the queue length continues to exceed 2, it indicates processor congestion. #	AVG	ulong	No	--	--
Disk Bytes/sec(DISK_BYTES_PER_SEC)	Speed at which data was transferred between disks during write or read operations (bytes/second). Normally, the higher the transfer speed, the more efficiently the system is operating.	AVG	float	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Disk Read Bytes/ sec(DISK_READ BYTES_PER_SEC )	Speed at which data was transferred to the disk during read operation (bytes/second).	AVG	float	No	--	--
Disk Reads/ sec(DISK_READS _PER_SEC)	Disk read processing speed (reads/second).	AVG	float	No	--	--
Disk Write Bytes/ sec(DISK_WRITE _BYTES_PER_SE C)	Speed at which data was transferred to the disk during write operation (bytes/second).	AVG	float	No	--	--
Disk Writes/ sec(DISK_WRITE S_PER_SEC)	Disk write processing speed (writes/second).	AVG	float	No	--	--
Disk Xfers/ sec(DISK_TRANS FERS_PER_SEC)	Disk read and write processing speed (transfers/second).	AVG	float	No	--	--
ID(INSTANCE)	Physical disk number.	COPY	string(2 56)	No	--	--
Interval(INTERVA L)	Collection interval during which the record was stored (seconds). For a real-time report, the first value is 5. If records are summarized into a historical report, the last stored value is displayed.	COPY	ulong	No	--	RECORD_TI ME (T1) - RECORD_TI ME (T0)
Interval2(INTERV AL2)	Collection interval during which the record was stored (seconds). For a real-time report, the first value is 5. If records are summarized into a historical report, the total of the summarized records is displayed.	ADD	ulong	No	--	RECORD_TI ME (T1) - RECORD_TI ME (T0)
Record Time(RECORD_TI ME)	Time at which the record was created.	COPY	time_t	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Supported versions</b>	<b>Data source</b>
Record Type(INPUT_REC ORD_TYPE)	Record name. Always PHYD.	COPY	char(8)	No	--	--
Split IO/ Sec(SPLIT_IO_P ER_SEC)	Number of I/Os into which an I/O to the disk was split (splits/second). I/O splitting occurs when an I/ O is too large to fit in a single I/O or when the disk requests data in fragmented sizes.	AVG	float	No	--	--

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## Process Detail (PD)

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### Function

The Process Detail (PD) record stores the performance data at a given point in time on a single process's paging, memory, time usage, and the like.

While processes continue to exist or PFM - Agent for Platform remains active, this record is created for each process that newly becomes active every time a record is collected. The performance data stored in this record is the same as that stored in the Process Detail Interval (PD\_PDI) record if the updating interval is the same. However, if performance data collected at a point in time is the same as the performance data collected in the previous interval for the same process, performance data is stored in the same record, overwriting the data in the database. This point is different from the Process Detail Interval (PD\_PDI) record.

This is a multi-instance record.

*Notes:*

- Each process represents a program that is being executed during data collection.
- If a new record corresponding to the Program (INSTANCE) field is generated during a collection interval, 0 is displayed as the first value for the following fields, because their values are computed from the information collected during the previous collection interval:
  - CPU % (PCT\_PROCESSOR\_TIME)
  - IO Data Bytes/sec (IO\_DATA\_BYTES\_PER\_SEC)
  - IO Data Operations/sec (IO\_DATA\_OPERATIONS\_PER\_SEC)
  - IO Other Bytes/sec (IO\_OTHER\_BYTES\_PER\_SEC)
  - IO Other Operations/sec (IO\_OTHER\_OPERATIONS\_PER\_SEC)
  - IO Read Bytes/sec (IO\_READ\_BYTES\_PER\_SEC)
  - IO Read Operations/sec (IO\_READ\_OPERATIONS\_PER\_SEC)
  - IO Write Bytes/sec (IO\_WRITE\_BYTES\_PER\_SEC)
  - IO Write Operations/sec (IO\_WRITE\_OPERATIONS\_PER\_SEC)
  - Page Faults/sec (PAGE\_FAULTS\_PER\_SEC)
  - Privileged CPU % (PCT\_PRIVILEGED\_TIME)
  - User CPU % (PCT\_USER\_TIME)

- If the value in the Program (INSTANCE) field of this record is `System` or `Idle`, the data for the Elapsed Time (ELAPSED\_TIME) field may not be correctly collected. In this case, the value for the Elapsed Time (ELAPSED\_TIME) field is close to the value for the System Up Time (SYSTEM\_UP\_TIME) field of the System Overview (PI) record, so utilize this value.

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

- PD\_INSTANCE
- PD\_ID\_PROCESS

### Lifetime

From process execution until termination

### Record size

- Fixed portion: 681 bytes
- Variable portion: 472 bytes

### Fields

PFM-View name (PFM-Manager name)	Description	Summary	Format	Delta	Not Support ed versions	Data source
CPU %(PCT_PROCESS OR_TIME)	Percentage of the elapsed processor time used by processes (%). In a multi-processor environment, usage is displayed, with number-of-processors x 100% as the maximum value.	--	float	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Creating Process ID(PROCESS_ID)	Process ID of the process that activated this process. #	--	ulong	No	--	--
Elapsed Time(ELAPSED_T IME)	Total elapsed time for process execution (seconds). #	--	ulong	No	--	--
Group(GROUP_N AME)	Name of the group to which the user who executed the process belongs. The group name is a domain name or a name pre-defined by the local system (NT AUTHORITY, computer name, etc.). If no group name is found that corresponds to the process security ID, NONE_MAPPED is stored; if the executing group name cannot be acquired from the process ID, Unknown is stored.	--	string(3 6)	No	--	--
Handle Count(HANDLE_ COUNT)	Number of handles kept open by the process. #	--	ulong	No	--	--
IO Data Bytes/ sec(IO_DATA_BY TES_PER_SEC)	Rate at which data was read or write in all I/O operations generated by processes (bytes/second).	--	float	No	--	--
IO Data Operations/ sec(IO_DATA_OP ERATIONS_PER_ SEC)	Number of read and write operations in all I/O operations generated by processes (operations/ second).	--	float	No	--	--
IO Other Bytes/ sec(IO_OTHER_B YTES_PER_SEC)	Rate at which data was manipulated by operations other than read or write operations (control functions, etc.) in all I/O operations generated by processes (bytes/second).	--	float	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
IO Other Operations/ sec(IO_OTHER_O PERATIONS_PER _SEC)	Number of operations other than read or write operations (control functions, etc.) in all I/O operations generated by processes (operations/ second).	--	float	No	--	--
IO Read Bytes/ sec(IO_READ_BY TES_PER_SEC)	Rate at which data was read in all I/O operations generated by processes (bytes/second).	--	float	No	--	--
IO Read Operations/ sec(IO_READ_OP ERATIONS_PER_ SEC)	Number of read operations in all I/O operations generated by processes (operations/second).	--	float	No	--	--
IO Write Bytes/ sec(IO_WRITE_B YTES_PER_SEC)	Rate at which data was written in all I/O operations generated by processes (bytes/second).	--	float	No	--	--
IO Write Operations/ sec(IO_WRITE_O PERATIONS_PER _SEC)	Number of write operations in all I/O operations generated by processes (operations/ second).	--	float	No	--	--
Interval(INTERVA L)	Always 0.	--	ulong	No	--	--
PID(ID_PROCESS )	Process ID. Unique identifier of the executing process.	--	ulong	No	--	--
Page Faults/ sec(PAGE_FAULT S_PER_SEC)	Rate at which page faults occurred inside the process (faults/second).	--	float	No	--	--
Page File Kbytes(PAGE_FIL E_BYTES)	Size of the virtual memory area used by the process as paging files (KB). #	--	double	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Page File Kbytes Peak(PAGE_FILE_Bytes_Peak)	Maximum size of the virtual memory area used by the process as paging files (KB). #	--	double	No	--	--
Pool Nonpaged Kbytes(Pool_Nonpaged_Bytes)	Size of the memory that was used by the process and that cannot be paged (KB). #	--	double	No	--	--
Pool Paged Kbytes(Pool_Paged_Bytes)	Size of the memory that was used by the process and that can be paged (KB). #	--	double	No	--	--
Priority Base(Priority_Base)	Process base priority. The greater the value, the higher the priority. The following values are available: - 24: Real-time - 13: High - 10: Higher than normal - 8: Normal - 6: Lower than normal - 4: Low	--	ulong	No	--	--
Private Kbytes(Private_Bytes)	Size of the memory that was allocated to the process and cannot be shared with other processes (KB). #	--	double	No	--	--
Privileged CPU %(Privileged_CPU_Time)	Percentage of the elapsed time the process used the processor in the privileged mode (%). In a multi-processor environment, usage is displayed with number-of-processors x 100% as the maximum value.	--	float	No	--	--
Program(Instance)	Executing program name.	--	string(256)	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Record Time(RECORD_ TIME)	Time at which the record was created.	--	time_t	No	--	--
Record Type(INPUT_REC ORD_TYPE)	Record name. Always PD.	--	char(8)	No	--	--
Thread Count(THREAD_ COUNT)	Number of threads (unit for executing an instruction) inside a process. When a process is executed, at least one thread is started. #	--	ulong	No	--	--
User(USER_ NAME)	Executing user name for the process. If no user name is found that corresponds to the process security ID, NONE_MAPPED is stored; if the executing user name cannot be acquired from the process ID, Unknown is stored.	--	string(3 6)	No	--	--
User CPU %(PCT_USER_ TIME)	Amount of processor time used by processes in the user mode (%). In a multi-processor environment, usage is displayed with number-of-processors x 100% as the maximum value.	--	float	No	--	--
Virtual Kbytes(VIRTUAL_ BYTES)	Size of the virtual address space used by processes (KB). #	--	double	No	--	--
Virtual Kbytes Peak(VIRTUAL_ BYTES_PEAK)	Maximum size of the virtual address space used by processes (KB). #	--	double	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Working Set Kbytes(WORKIN G_SET)	Size of the memory used by processes (which is called a working set and indicates either the total memory size or the amount of memory that can be referenced without page faults) (KB). #	--	double	No	--	--
Working Set Kbytes Peak(WORKING_ SET_PEAK)	Maximum size of the memory used by processes (which is called a working set and indicates either the total memory size or the amount of memory that can be referenced without page faults) (KB). #	--	double	No	--	--

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## Process Detail Interval (PD\_PDI)

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### Function

The Process Detail Interval (PD\_PDI) record stores the performance data at a given point in time on a single process's paging, memory, and time usage, and the like.

While processes continue to exist or PFM - Agent for Platform remains active, this record is created for each process that newly becomes active every time a record is collected. The performance data stored in this record is the same as that stored in the Process Detail (PD) record if the updating interval is the same. However, if performance data collected at a point in time is the same as the performance data collected in the previous interval for the same process, performance data is not stored in the same record and a new record is stored in the database. This point is different from the Process Detail (PD) record.

This is a multi-instance record.

*Notes:*

- Each process represents a program that is being executed during data collection.
- If a new record corresponding to the Program (INSTANCE) field is generated during a collection interval, 0 is displayed as the first value for the following fields, because their values are computed from the information collected during the previous collection interval:
  - CPU % (PCT\_PROCESSOR\_TIME)
  - IO Data Bytes/sec (IO\_DATA\_BYTES\_PER\_SEC)
  - IO Data Operations/sec (IO\_DATA\_OPERATIONS\_PER\_SEC)
  - IO Other Bytes/sec (IO\_OTHER\_BYTES\_PER\_SEC)
  - IO Other Operations/sec (IO\_OTHER\_OPERATIONS\_PER\_SEC)
  - IO Read Bytes/sec (IO\_READ\_BYTES\_PER\_SEC)
  - IO Read Operations/sec (IO\_READ\_OPERATIONS\_PER\_SEC)
  - IO Write Bytes/sec (IO\_WRITE\_BYTES\_PER\_SEC)
  - IO Write Operations/sec (IO\_WRITE\_OPERATIONS\_PER\_SEC)
  - Page Faults/sec (PAGE\_FAULTS\_PER\_SEC)
  - Privileged CPU % (PCT\_PRIVILEGED\_TIME)
  - User CPU % (PCT\_USER\_TIME)

- If the value in the Program (INSTANCE) field of this record is *System* or *Idle*, the data for the Elapsed Time (ELAPSED\_TIME) field may not be correctly collected. In this case, the value for the Elapsed Time (ELAPSED\_TIME) field is close to the value for the System Up Time (SYSTEM\_UP\_TIME) field of the System Overview (PI) record, so utilize this value.

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

- PD\_PDI\_INSTANCE
- PD\_PDI\_ID\_PROCESS

### Lifetime

From process execution until termination

### Record size

- Fixed portion: 681 bytes
- Variable portion: 472 bytes

### Fields

PFM-View name (PFM-Manager name)	Description	Summary	Format	Delta	Not Support ed versions	Data source
CPU %(PCT_PROCESS OR_TIME)	Percentage of the processor time used by the process (%). In a multi-processor environment, usage is displayed, with number-of-processors x 100% as the maximum value.	--	float	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Supported versions</b>	<b>Data source</b>
Creating Process ID(PROCESS_ID)	Process ID of the process that activated this process. #	--	ulong	No	--	--
Elapsed Time(ELAPSED_T IME)	Total elapsed time for process execution (seconds). #	--	ulong	No	--	--
Group(GROUP_N AME)	Name of the group to which the user who executed the process belongs. The group name is a domain name or a name pre-defined by the local system (NT AUTHORITY, computer name, etc.). If no group name is found that corresponds to the process security ID, NONE_MAPPED is stored; if the executing group name cannot be acquired from the process ID, Unknown is stored.	--	string(3 6)	No	--	--
Handle Count(HANDLE_ COUNT)	Number of handles kept open by the process. #	--	ulong	No	--	--
IO Data Bytes/ sec(IO_DATA_BY TES_PER_SEC)	Rate at which data was read or write in all I/O operations generated by the process (bytes/second).	--	float	No	--	--
IO Data Operations/ sec(IO_DATA_OP ERATIONS_PER_ SEC)	Number of read and write operations in all I/O operations generated by the process (operations/ second).	--	float	No	--	--
IO Other Bytes/ sec(IO_OTHER_B YTES_PER_SEC)	Rate at which data was manipulated by operations other than read or write operations (control functions, etc.) in all I/O operations generated by the process (bytes/second).	--	float	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
IO Other Operations/ sec(IO_OTHER_O PERATIONS_PER _SEC)	Number of operations other than read or write operations (control functions, etc.) in all I/O operations generated by the process (operations/ second).	--	float	No	--	--
IO Read Bytes/ sec(IO_READ_BY TES_PER_SEC)	Rate at which data was read in all I/O operations generated by the process (bytes/second).	--	float	No	--	--
IO Read Operations/ sec(IO_READ_OP ERATIONS_PER_ SEC)	Number of read operations in all I/O operations generated by the process (operations/second).	--	float	No	--	--
IO Write Bytes/ sec(IO_WRITE_B YTES_PER_SEC)	Rate at which data was written in all I/O operations generated by the process (bytes/second).	--	float	No	--	--
IO Write Operations/ sec(IO_WRITE_O PERATIONS_PER _SEC)	Number of write operations in all I/O operations generated by the process (operations/ second).	--	float	No	--	--
Interval(INTERVA L)	Collection interval time in which records were stored (in seconds). For a real-time report, the first value is 5.	--	ulong	No	--	RECORD_TI ME (T1) - RECORD_TI ME (T0)
PID(ID_PROCESS )	Process ID. Unique identifier of the executing process.	--	ulong	No	--	--
Page Faults/ sec(PAGE_FAULT S_PER_SEC)	Rate at which page faults occurred inside the process (faults/second).	--	float	No	--	--
Page File Kbytes(PAGE_FIL E_BYTES)	Size of the virtual memory area used by the process as paging files (KB). #	--	double	No	--	--

PFM-View name (PFM-Manager name)	Description	Summary	Format	Delta	Not Supported versions	Data source
Page File Kbytes Peak(PAGE_FILE_Bytes_Peak)	Maximum size of the virtual memory area used by the process as paging files (KB). #	--	double	No	--	--
Pool Nonpaged Kbytes(Pool_Nonpaged_Bytes)	Size of the memory that was used by the process and that cannot be paged (KB). #	--	double	No	--	--
Pool Paged Kbytes(Pool_Paged_Bytes)	Size of the memory that was used by the process and that can be paged (KB). #	--	double	No	--	--
Priority Base(Priority_Base)	Process base priority. The greater the value, the higher the priority. The following values are available: - 24: Real-time - 13: High - 10: Higher than normal - 8: Normal - 6: Lower than normal - 4: Low	--	ulong	No	--	--
Private Kbytes(Private_Bytes)	Size of the memory that was allocated to the process and could not be shared with other processes (KB). #	--	double	No	--	--
Privileged CPU %(Privileged_CPU_Time)	Percentage of the time the process used the processor in the privileged mode (%). In a multi-processor environment, usage is displayed, with number-of-processors x 100% as the maximum value.	--	float	No	--	--
Program(Instance)	Executing program name.	--	string(256)	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Record Time(RECORD_TI ME)	Time at which the record was created.	--	time_t	No	--	--
Record Type(INPUT_REC ORD_TYPE)	Record name. Always PDI.	--	char(8)	No	--	--
Thread Count(THREAD_ COUNT)	Number of threads (unit for executing an instruction) inside a process. When a process is executed, at least one thread is started. #	--	ulong	No	--	--
User(USER_NAM E)	Executing user name for the process. If no user name is found that corresponds to the process security ID, NONE_MAPPED is stored; if the executing user name cannot be acquired from the process ID, Unknown is stored.	--	string(3 6)	No	--	--
User CPU %(PCT_USER_TI ME)	Amount of processor time used by processes in the user mode (%). In a multi-processor environment, usage is displayed with number-of-processors x 100% as the maximum value.	--	float	No	--	--
Virtual Kbytes(VIRTUAL _BYTES)	Size of the virtual address space used by processes (KB). #	--	double	No	--	--
Virtual Kbytes Peak(VIRTUAL_B BYTES_PEAK)	Maximum size of the virtual address space used by processes (KB). #	--	double	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Working Set Kbytes(WORKIN G_SET)	Size of the memory used by processes (which is called a working set and indicates either the total memory size or the amount of memory that can be referenced without page faults) (KB). #	--	double	No	--	--
Working Set Kbytes Peak(WORKING_ SET_PEAK)	Maximum size of the memory used by processes (which is called a working set and indicates either the total memory size or the amount of memory that can be referenced without page faults) (KB). #	--	double	No	--	--

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## Process End Detail (PD\_PEND)

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### Function

The Process End Detail (PD\_PEND) record stores the performance data showing the state after the process has terminated.

This is a multi-instance record.

*Notes:*

- This record cannot be collected on a real-time basis.
- Each process represents a program that was being executed before data collection.
- This record is constantly monitoring process performance data at 60-second intervals, separately from the collection interval, and holds a maximum of 1,000 cases of data on terminated processes inside the service. Therefore, it cannot collect information on processes that terminate with an operation duration of less than 60 seconds.

Furthermore, the data on terminated processes held inside the service is stored in the Store database for each collection interval. Therefore, set the collection interval such that the number of terminated processes does not exceed 1,000.

- The performance data stored in this record is different from that stored in the Process Detail (PD) or Process Detail Interval (PD\_PDI) record.

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

- PD\_PEND\_PROCESS\_ID
- PD\_PEND\_PROCESS\_NAME

### Lifetime

From process execution until termination

**Record size**

- Fixed portion: 681 bytes
- Variable portion: 352 bytes

**Fields**

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Supported versions</b>	<b>Data source</b>
CPU %(PROCESSOR_P ERCENT)	Percentage of the elapsed processor time spent by all of the threads of the process for code execution (percent/second).	--	float	No	--	(USER_TIME + KERNEL_TI ME) / (EXIT_TIME - CREATION_T IME)
Creation Time(CREATION_ TIME)	Time at which the process was created.	--	time_t	No	--	--
Elapsed Time(ELAPSED_T IME)	Total elapsed time for process execution (seconds).	--	ulong	No	--	EXIT_TIME - CREATION_T IME
Exit Code(EXIT_CODE )	Exit code of the process.	--	long	No	--	--
Exit Time(EXIT_TIME)	Time at which the process terminated.	--	time_t	No	--	--
Interval(INTERVA L)	Always 0.	--	ulong	No	--	--
Kernel Time(KERNEL_TI ME)	Time spent on executing codes in the kernel mode to gain access to the system private data (seconds).	--	utime	No	--	--
PID(PROCESS_ID )	Process identifier.	--	long	No	--	--

PFM-View name (PFM-Manager name)	Description	Summary	Format	Delta	Not Support ed versions	Data source
Priority(PRIORITY)	Process base priority. The following values are available: - REALTIME - HIGH - ABOVE-NORMAL - NORMAL - BELOW-NORMAL - IDLE - Not Applicable	--	string(24)	No	--	--
Privileged CPU%(KERNEL_PERCENT)	Percentage of the elapsed time, spent by the process threads on executing codes in the kernel mode, to gain access to the system private data (percent/second).	--	float	No	--	KERNEL_TIME / (EXIT_TIME - CREATION_TIME)
Program(PROCESS_NAME)	Executing program name.	--	string(256)	No	--	--
Record Time(RECORD_TIME)	Time at which the record was created.	--	time_t	No	--	--
Record Type(INPUT_RECORD_TYPE)	Record name. Always PEND.	--	char(8)	No	--	--
Total CPU Time(TOTAL_CPU_TIME)	Time spent on code execution in the kernel and user modes (seconds).	--	utime	No	--	USER_TIME + KERNEL_TIME
User CPU %(USER_PERCENT)	Percentage of the elapsed time spent by the process threads on executing codes in the user mode (percent/second).	--	float	No	--	USER_TIME / (EXIT_TIME - CREATION_TIME)
User Time(USER_TIME)	Time spent on code execution in the user mode (seconds).	--	utime	No	--	--
Working Set Max Kbytes(WORKING_SET_MAX)	Maximum working set size in the process (KB).	--	double	No	--	ReturnValue / 1KB

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Supported versions</b>	<b>Data source</b>
Working Set Min Kbytes(WORKING G_SET_MIN)	Minimum working set size in the process (KB).	--	double	No	--	ReturnValue / 1KB

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## Processor Overview (PI\_PCSR)

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### Function

The Processor Overview (PI\_PCSR) record stores the performance data per unit time on the processor's arithmetic operations, logical computation, initialization of peripheral device operations, the rate of interrupts such as process thread execution, and the time spent.

This is a multi-instance record.

*Note:*

In a multi-processor environment, the maximum value for the fields listed below is 100 if `_Total` is indicated for the Instance (INSTANCE) field:

- % DPC Time (PCT\_DPC\_TIME)
- % Interrupt Time (PCT\_INTERRUPT\_TIME)
- CPU % (PCT\_PROCESSOR\_TIME)
- Privileged CPU % (PCT\_PRIVILEGED\_TIME)
- User CPU % (PCT\_USER\_TIME)

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

PI\_PCSR\_INSTANCE

### Lifetime

None

### Record size

- Fixed portion: 681 bytes
- Variable portion: 532 bytes

**Fields**

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
% C1 Time(PCT_C1_T IME)	Percentage of the time the processor was in the C1 low power consumption state (C1 state) (%). This is a low power consumption state in which the processor maintains all contexts and can quickly return to the executing state. If the processor does not support the C1 state, this field is always 0.	%	float	No	--	--
% C2 Time(PCT_C2_T IME)	Percentage of the time the processor was in the C2 low power consumption state (C2 state) (%). This is a low power consumption state that consumes less power than the C1 state, in which the processor maintains only the system cache contexts. If the processor does not support the C2 state, this field is always 0.	%	float	No	--	--
% C3 Time(PCT_C3_T IME)	Percentage of the time the processor was in the C3 low power consumption state (C3 state) (%). This is a low power consumption state that consumes less power than the C2 state, in which the processor cannot maintain cache integrity. If the processor does not support the C3 state, this field is always 0.	%	float	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
% DPC Time(PCT_DPC_T IME)	Percentage of time the processor was used for handling DPC (Delayed Procedure Call) interrupts in the privileged mode, which are executed at lower priority than the standard interrupts (%).	%	float	No	--	--
% Idle Time(PCT_IDLE_ TIME)	Percentage of time the processor was idle (%).	%	float	No	--	--
% Interrupt Time(PCT_INTER RUPT_TIME)	Percentage of time the processor was used for processing hardware (devices that cause interrupts, such as system clock, mouse, disk driver, data communication line, NIC, and other peripheral devices) interrupts (%).	%	float	No	--	--
APC Bypasses/ sec(APC_BYPASS ES_PER_SEC)	Rate at which the kernel APC (Asynchronous Procedure Call) interrupts were bypassed at the processor (bypasses/second).	AVG	float	No	2003(x86) , 2003(x64) , 2008(x86) , 2008(x64)	--
C1 Trans/ sec(PCT_C1_TRA NSITIONS_PER_S EC)	Number of times the processor entered the C1 low power consumption state (C1 state) (transitions/second). When the processor is in a sufficiently idle state, it enters the C1 state, and exits the C1 state when an interrupt occurs. If the processor does not support the C1 state, this field is always 0.	%	float	No	--	--

PFM-View name (PFM-Manager name)	Description	Summary	Format	Delta	Not Supported versions	Data source
C2 Trans/sec(PCT_C2_TRANSITIONS_PER_SEC)	Number of times the processor entered the C2 low power consumption state (C2 state) (transitions/second). If the processor requires less power than the C1 state and is in a sufficiently idle state, it shifts from the C1 state to the C2 state, and exits the C2 state when an interrupt occurs. If the processor does not support the C2 state, this field is always 0.	%	float	No	--	--
C3 Trans/sec(PCT_C3_TRANSITIONS_PER_SEC)	Number of times the processor entered the C3 low power consumption state (C3 state) (transitions/second). If the processor requires less power than the C2 state and is in a sufficiently idle state, it shifts from the C2 state to the C3 state, and exits the C3 state when an interrupt occurs. If the processor does not support the C3 state, this field is always 0.	%	float	No	--	--
CPU % (PCT_PROCESSOR_TIME)	Processor usage (%). Percentage of the elapsed time used by the processor for executing non-idle threads.	%	float	No	--	--
DPC Bypasses/sec(DPC_BYPASSES_PER_SEC)	Rate at which DPC (Delayed Procedure Call) interrupts in the privileged mode, which are executed at lower priority than the standard interrupts, were bypassed at the processor (bypasses/second).	AVG	float	No	2003(x86) , 2003(x64) , 2008(x86) , 2008(x64)	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
DPC Rate(DPC_RATE)	Average processor clock value between timer checks when DPC (Delayed Procedure Call) interrupts in the privileged mode, which are executed at lower priority than the standard interrupts, were added to the processor's DPC queue. #	AVG	ulong	No	--	--
DPCs Queued/ sec(DPCS_QUEUE ED_PER_SEC)	Average number of DPC (Delayed Procedure Call) interrupts in the privileged mode, which are executed at lower priority than the standard interrupts, that were added to the processor's DPC queue (interrupts/second).	AVG	float	No	--	--
Instance(INSTANC E)	Processor instance name. Shown as a number that begins at 0.	COPY	string(256)	No	--	--
Interrupts/ sec(INTERRUPTS _PER_SEC)	Rate at which the processor received and processed hardware (devices that cause interrupts, such as system clock, mouse, disk driver, data communication line, NIC, and other peripheral devices) interrupts (interrupts/second). Does not include DPC (Delayed Procedure Call) interrupts. Normally, if the value in this field has increased significantly when there is no system activity, it indicates a hardware problem, such as the presence of a slow device.	AVG	float	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Interval(INTERVAL)	Collection interval during which the record was stored (seconds). For a real-time report, the first value is 5. If records are summarized into a historical report, the last stored value is displayed.	COPY	ulong	No	--	RECORD_TIME (T1) - RECORD_TIME (T0)
Interval2(INTERVAL2)	Collection interval during which the record was stored (seconds). For a real-time report, the first value is 5. If records are summarized into a historical report, the total of the summarized records is displayed.	ADD	ulong	No	--	RECORD_TIME (T1) - RECORD_TIME (T0)
Privileged CPU %(PCT_PRIVILEGED_TIME)	Processor usage in the privileged mode (%). Percentage of the elapsed time the processor used for executing non-idle threads in the privileged mode.	%	float	No	--	--
Record Time(RECORD_TIME)	Time at which the record was created.	COPY	time_t	No	--	--
Record Type(INPUT_RECORD_TYPE)	Record name. Always PCSR.	COPY	char(8)	No	--	--
User CPU %(PCT_USER_TIME)	Processor usage in the user mode (%). Percentage of the elapsed time the processor used for executing non-idle threads in the user mode.	%	float	No	--	--

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## Server Work Queues Overview (PI\_SVRQ)

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### Function

The Server Work Queues Overview (PI\_SVRQ) record stores the performance data per unit time on the server's queue size and the processing inside the queue.

This is a multi-instance record.

*Note:*

This record cannot be collected if the server service (service name: LanmanServer) provided by the OS is stopped.

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

PI\_SVRQ\_INSTANCE

### Lifetime

None

### Record size

- Fixed portion: 681 bytes
- Variable portion: 532 bytes

**Fields**

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Active Threads(ACTIVE_ THREADS)	Number of threads in which the processor was processing requests from server clients. The system tries to minimize this value to minimize unnecessary context switching. #	AVG	ulong	No	--	--
Available Threads(AVAILAB LE_THREADS)	Number of server threads in which the processor was not processing requests from server clients. The server dynamically adjusts the number of threads to optimize the server performance. #	AVG	ulong	No	--	--
Available Work Items(AVAILABL E_WORK_ITEMS )	Number of work items (which indicate all requests from clients, and the server maintains an available work area for each process to accelerate processing) available to the processor. Normally, if a value other than 0 continues, the value in the MinFreeWorkItems registry in the Server service needs to be increased. The value in this field is always 0 if Blocking Queue is set in the Instance field. #	AVG	ulong	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Borrowed Work Items(BORROWE D_WORK_ITEMS )	Number of work items borrowed from another processor by the processor because it has run out of available work items (which indicate all requests from clients, and the server maintains an available work area for each process to accelerate processing). Normally, if this value continues to increase, the value in the MaxWorkItems or MinFreeWorkItems registry in the Server service needs to be increased. The value in this field is always 0 if Blocking Queue is set in the Instance field. #	AVG	ulong	No	--	--
Bytes Rcvd/ sec(BYTES_RECE IVED_PER_SEC)	Rate at which the server received data from network clients by using the processor (bytes/second).	AVG	float	No	--	--
Bytes Sent/ sec(BYTES_SENT _PER_SEC)	Rate at which the server sent data to network clients by using the processor (bytes/second).	AVG	float	No	--	--
Bytes Xferd/ sec(BYTES_TRA NSFERRED_PER_ SEC)	Rate at which the server exchanged data with network clients by using the processor (bytes/second).	AVG	float	No	--	--
Context Blocks Queued/ sec(CONTEXT_B LOCKS_QUEUED _PER_SEC)	Rate at which work context blocks had to be entered in the FSP queue because they had to wait for processing by the server (blocks/second).	AVG	float	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Current Clients(CURRENT _CLIENTS)	Number of clients processed by the processor. The server dynamically allocates the client load among all servers within the system. The value in this field is always 0 if Blocking Queue is set in the Instance field. #	AVG	ulong	No	--	--
Instance(INSTANCE)	Instance name of the server work queue. Displayed as Blocking Queue and a number that begins with 0.	COPY	string(256)	No	--	--
Interval(INTERVAL)	Collection interval during which the record was stored (seconds). For a real-time report, the first value is 5. If records are summarized into a historical report, the last stored value is displayed.	COPY	ulong	No	--	RECORD_TIME (T1) - RECORD_TIME (T0)
Interval2(INTERVAL2)	Collection interval during which the record was stored (seconds). For a real-time report, the first value is 5. If records are summarized into a historical report, the total of the summarized records is displayed.	ADD	ulong	No	--	RECORD_TIME (T1) - RECORD_TIME (T0)
Queue Length(QUEUE_LENGTH)	Current length of the CPU server operation queue. If the queue length continues to exceed 4, it can be assumed that processor load is high. This value is the count at a given point of time, and not an average value of the time interval.#	AVG	ulong	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Read Bytes/ sec(READ_BYTE S_PER_SEC)	Speed at which data was read from files by the server on behalf of clients, by using the processor (bytes/second).	AVG	float	No	--	--
Read Ops/ sec(READ_OPER ATIONS_PER_SE C)	Number of read operations in which the server used the processor to read data from files on behalf of clients (operations/second). The value in this field is always 0 if Blocking Queue is set in the Instance field.	AVG	float	No	--	--
Record Time(RECORD_TI ME)	Time at which the record was created.	COPY	time_t	No	--	--
Record Type(INPUT_REC ORD_TYPE)	Record name. Always SVRQ.	COPY	char(8)	No	--	--
Total Bytes/ sec(TOTAL_BYTE S_PER_SEC)	Speed at which data was read from or written to files by the server on behalf of clients, by using the processor (bytes/second).	AVG	float	No	--	--
Total Ops/ sec(TOTAL_OPER ATIONS_PER_SE C)	Number of operations in which the server used the processor to read data from or write data to files on behalf of clients (operations/second). The value in this field is always 0 if Blocking Queue is set in the Instance field.	AVG	float	No	--	--

PFM-View name (PFM-Manager name)	Description	Summary	Format	Delta	Not Supported versions	Data source
Work Item Shortages(WORK_ITEM_SHORTAGES)	<p>Shortage in the number of work items (which indicate all requests from clients, and the server maintains an available work area for each process to accelerate processing) available to the processor.</p> <p>Normally, if this value continues to be a value other than 0, the value in the MaxWorkItems registry in the Server service needs to be increased.</p> <p>The value in this field is always 0 if Blocking Queue is set in the Instance field. #</p>	AVG	ulong	No	--	--
Write Bytes/sec(WRITE_BYTES_PER_SEC)	<p>Speed at which data was written to files by the server on behalf of clients, by using the processor (bytes/second).</p>	AVG	float	No	--	--
Write Ops/sec(WRITE_OPERATIONS_PER_SEC)	<p>Number of write operations in which the server used the processor to write data to files on behalf of clients (operations/second).</p> <p>The value in this field is always 0 if Blocking Queue is set in the Instance field.</p>	AVG	float	No	--	--

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## Service Process Detail (PD\_SVC)

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### Function

The Service Process Detail (PD\_SVC) record stores the performance data that shows the state of the application services, such as the Win32 process, that are registered in the Service Control Manager (SCM) at a given point in time.

This is a multi-instance record.

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

- PD\_SVC\_SERVICE\_NAME
- PD\_SVC\_TYPE

### Lifetime

From service installation until its uninstallation

### Record size

- Fixed portion: 681 bytes
- Variable portion: 1,775 bytes

**Fields**

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Supported versions</b>	<b>Data source</b>
Accepted Controls(ACCEPTED_CONTROLS)	<p>Control codes received by the service.</p> <p>The values in this field are all or some of the following:</p> <p>PAUSE_CONTINUE: The stop is temporary, and a restart is possible.</p> <p>SHUTDOWN: An OS shutdown is reported to the service.</p> <p>STOP: Stopping is possible.</p> <p>The following values are listed in data model version 4.1 or later:</p> <p>PARAMCHANGE: The beginning parameter can be reread without a restart.</p> <p>NETBINDCHANGE: The bind change can be accepted without restarting from the network.</p> <p>HARDWAREPROFILECHANGE: The service is notified when the hardware profile is changed.</p> <p>POWEREVENT: The service is notified when the state of the OS power supply is changed.</p> <p>SESSIONCHANGE: The service is notified when the state of the OS session is changed.</p>	--	string(128)	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Checkpoint(CHEC KPOINT)	Checkpoint progress counter (based on an incremental method) used by the service to report progress as each step (start, stop, or continuation) is completed. If there is no such processing step, the value in this field is 0.	--	long	No	--	--
Display Name(DISPLAY_ NAME)	Name used by the user interface program to identify a service.	--	string(2 56)	No	--	--
Image Path(IMAGE_PAT H)	Fully qualified path to the service's binary file.	--	string(1 024)	No	--	--
Interval(INTERVA L)	Always 0.	--	ulong	No	--	--
Record Time(RECORD_TI ME)	Time at which the record was created.	--	time_t	No	--	--
Record Type(INPUT_REC ORD_TYPE)	Record name. Always SVC.	--	char(8)	No	--	--
Service Exit Code(SERVICE_E XIT_CODE)	Exit code unique to the service.	--	long	No	--	--
Service Name(SERVICE_ NAME)	Service name used by the service control manager database.	--	string(2 56)	No	--	--

PFM-View name (PFM-Manager name)	Description	Summary	Format	Delta	Not Supported versions	Data source
Service Type(TYPE)	<p>One of the following two service types:</p> <ul style="list-style-type: none"> <li>- WIN32_OWN_PROCESS: The service application runs inside a process that is exclusively for the application.</li> <li>- WIN32_SHARE_PROCESS: The service application shares a single process with other services. To indicate that the service process is interactive with the desktop, the following type is also listed:</li> <li>- INTERACTIVE_PROCESS</li> </ul>	--	string(64)	No	--	--
State(STATE)	<p>Service state during data collection. One of the following values is used for this field:</p> <ul style="list-style-type: none"> <li>- CONTINUE_PENDING: Starting state with the Resume button after pausing.</li> <li>- PAUSE_PENDING: Pausing state.</li> <li>- PAUSED: Paused state.</li> <li>- RUNNING: Running state.</li> <li>- START_PENDING: Starting state.</li> <li>- STOP_PENDING: Stopping state.</li> <li>- STOPPED: Stopped state.</li> </ul>	--	string(31)	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Wait Hint(WAIT_HINT)	Time expected to be taken by the service to process the pending start, stop, or continuation processes before the service updates its state or checkpoint (milliseconds).	--	ulong	No	--	--
Win32 Exit Code(WIN32_EXI T_CODE)	Win32 exit code.	--	long	No	--	--

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## System Overview (PI)

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### Function

The System Overview (PI) record stores Performance data per unit time on the Windows performance objects listed below.

The System Overview (PI) record stores information for determining whether the system is being properly used. Each Windows performance objective is explained below.

- Cache object

The Cache object monitors information on the file system cache, which is a physical memory area for managing data to achieve high-speed access to data without accessing a disk during the operation of the cache manager and the file system driver.

Because the cache is normally used by applications, it can also be used as an indicator for application I/O operations. If the memory size is small, the cache is also small, and thus effective operations cannot be expected.

- Memory object

The Memory object manages physical and virtual memory operations.

The physical memory consists of RAM (random access memory) area while the virtual memory consists of areas inside both the physical memory and disks.

The virtual memory area is mapped onto the physical memory area, and pages that are not accessed for a certain amount of time are saved to the virtual memory to ensure effective use of the physical memory.

Paging is the transfer of codes and data between a disk and the physical memory based on page-in (loading of pages into the physical memory) and page-out (moving of pages to the virtual memory).

A page fault is an interrupt that occurs when an attempt is made to access a page that does not exist in the physical memory. Memory shortage caused by excessive paging can cause delays in system processing.

- Objects object

The Objects object monitors the system's logical objects, such as processes, threads, mutex, and semaphore.

Each object needs memory for storing the basic information on itself. This information can be used to detect unnecessary resource consumption.

- Processor object

The Processor object monitors the processor's processing state. A computer has multiple processors.

A processor is part of a computer that executes arithmetic operations and logical computation, initialization of peripheral device operations, and execution of process threads.

■ Redirector object

The Redirector object monitors the network connection initiated by a client computer.

■ Server object

The Server object monitors the server computer's communication between networks.

■ System object

The System object monitors various processing states of all processors within the entire system.

*Notes:*

- At the start of collection of the System Overview (PI) record, if the startup type of the Windows Management Instrumentation service (service name: WinMgmt), which provides the OS system management information, is set to Disable, the value for the System Type (SYSTEM\_TYPE) field cannot be correctly collected.
- The fields listed below corresponding to the Server object cannot be collected if the server service (service name: LanmanServer) provided by the OS is stopped:
  - Blocking Reqs Rejected (BLOCKING\_REQUESTS\_REJECTED)
  - Bytes Rcvd/sec (BYTES\_RECEIVED\_PER\_SEC)
  - Bytes Total/sec (BYTES\_TOTAL\_PER\_SEC)
  - Bytes Xmitd/sec (BYTES\_TRANSMITTED\_PER\_SEC)
  - Context Blocks Queued/sec (CONTEXT\_BLOCKS\_QUEUED\_PER\_SEC)
  - Errors Access Permissions (ERRORS\_ACCESS\_PERMISSIONS)
  - Errors Granted Access (ERRORS\_GRANTED\_ACCESS)
  - Errors Logon (ERRORS\_LOGON)
  - Errors System (ERRORS\_SYSTEM)
  - File Directory Searches (FILE\_DIRECTORY\_SEARCHES)
  - Files Open (FILES\_OPEN)

- Files Opened Total (FILES\_OPENED\_TOTAL)
- Logon Total (LOGON\_TOTAL)
- Logon/sec (LOGON\_PER\_SEC)
- Pool Nonpaged Failures (POOL\_NONPAGED\_FAILURES)
- Pool Nonpaged Peak (POOL\_NONPAGED\_PEAK)
- Pool Paged Failures (POOL\_PAGED\_FAILURES)
- Pool Paged Peak (POOL\_PAGED\_PEAK)
- Server Pool Nonpaged Bytes (SERVER\_POOL\_NONPAGED\_BYTES)
- Server Pool Paged Bytes (SERVER\_POOL\_PAGED\_BYTES)
- Server Sessions (SERVER\_SESSIONS)
- Sessions Errored Out (SESSIONS\_ERRORED\_OUT)
- Sessions Forced Off (SESSIONS\_FORCED\_OFF)
- Sessions Logged Off (SESSIONS\_LOGGED\_OFF)
- Sessions Timed Out (SESSIONS\_TIMED\_OUT)
- Work Item Shortages (WORK\_ITEM\_SHORTAGES)

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	Yes	Yes
LOGIF	Blank	Yes

### ODBC key fields

None

### Lifetime

None

### Record size

- Fixed portion: 3,235 bytes
- Variable portion: 0 bytes

**Fields**

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
% Committed Bytes in Use(PCT_COMMI TTED_BYTES_IN _USE)	Virtual memory usage (%). Amount of Committed Mbytes as a percentage of Commit Limit Mbytes. #	%	float	No	--	--
% Physical Mem(PCT_PHYSI CAL_MEMORY)	Physical memory usage (%). #	%	double	No	--	100 × USED_PHYSI CAL_MEMO RY_BYTES / TOTAL_PHYS ICAL_MEMO RY_KBYTES
% Registry Quota in Use(PCT_REGIST RY_QUOTA_IN_ USE)	Percentage of registry quotas available to processors that the system is using (%). #	%	float	No	--	--
% Total DPC Time(PCT_TOTAL _DPC_TIME)	Percentage of time the processor was used for handling DPC (Delayed Procedure Call) interrupts in the privileged mode, which are executed at lower priority than the standard interrupts (%). The maximum value is 100 even in a multi-processor environment.	%	float	No	--	--
% Total Interrupt Time(PCT_TOTAL _INTERRUPT_TI ME)	Percentage of time the processor was used for processing hardware (devices that cause interrupts, such as system clock, mouse, disk driver, data communication line, NIC, and other peripheral devices) interrupts (%). The maximum value is 100 even in a multi-processor environment.	%	float	No	--	--

PFM-View name (PFM-Manager name)	Description	Summary	Format	Delta	Not Support ed versions	Data source
Active CPUs(NUMBER_ OF_ACTIVE_CPU S)	Number of processors.	COPY	ulong	No	--	--
Alignment Fixups/ sec(ALIGNMENT _FIXUPS_PER_SE C)	Rate at which the system fixed alignment faults in processors (fixups/ second).	AVG	float	No	--	--
Async Copy Reads/ sec(ASYNC_COP Y_READS_PER_S EC)	Rate at which asynchronous read from file system cache pages, including memory copy from the cache to application buffers, occurred (reads/second).	AVG	float	No	--	--
Async Data Maps/ sec(ASYNC_DAT A_MAPS_PER_SE C)	Rate at which the system did not wait for a page to be extracted when the page mapped to the file system cache was not found in the main memory (maps/ second).	AVG	float	No	--	--
Async Fast Reads/ sec(ASYNC_FAST _READS_PER_SE C)	Rate at which data was asynchronously extracted directly from the cache without going through the file system (reads/second).	AVG	float	No	--	--
Async MDL Reads/ sec(ASYNC_MDL _READS_PER_SE C)	Rate at which the MDL (Memory Descriptor List) was used to access file system cache pages, resulting in asynchronous read operations (reads/ second).	AVG	float	No	--	--
Async Pin Reads/ sec(ASYNC_PIN _READS_PER_SEC )	Rate at which asynchronous read occurred inside the file system cache during the preprocessing for writing data back to the disk (reads/second).	AVG	float	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Available Mbytes(AVAILAB LE_BYTES)	Available size in the physical memory area (MB). The combined total of zero memory, free memory, and standby memory (cached) that can be immediately allocated to a process or be used by the system. Normally, if this value continues to be less than 5% of the value in the Total Physical Mem Mbytes field, it indicates that excessive paging is occurring. #	AVG	double	No	--	--
Blocking Reqs Rejected(BLOCKI NG_REQUESTS_ REJECTED)	Rate at which the server refused to block the SMB (network protocol to realize file service and print service) because of a shortage in the number of empty work items (rejections/second).	AVG	float	No	--	--
Bytes Rcvd/ sec(BYTES_RECE IVED_PER_SEC)	Rate at which the server received data from the network (bytes/second).	AVG	float	No	--	--
Bytes Total/ sec(BYTES_TOTA L_PER_SEC)	Rate at which the server exchanged data with the network (bytes/second).	AVG	double	No	--	--
Bytes Xmitd/ sec(BYTES_TRA NSMITTED_PER_ SEC)	Rate at which the server sent data to the network (bytes/second).	AVG	float	No	--	--
CPU %(PCT_TOTAL_P ROCESSOR_TIM E)	Processor usage (%). Percentage of elapsed time used by the processor for executing non-idle threads. The maximum value is 100 even in a multi-processor environment.	%	float	No	--	--

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Cache Faults/ sec(CACHE_FAU LTS_PER_SEC)	Rate at which page faults occurred in the file system cache (faults/second).	AVG	float	No	--	--
Cache Mbytes(CACHE_B BYTES)	Size being used inside the file system cache (MB). #	AVG	double	No	--	--
Cache Mbytes Peak(CACHE_BY TES_PEAK)	Maximum size that was used inside the file system cache (MB). #	AVG	double	No	--	--
Commit Limit Mbytes(COMMIT_ LIMIT)	Total size of the virtual memory area (MB). Total size of the memory area that can be committed without expanding the paging file. #	AVG	double	No	--	--
Committed Mbytes(COMMIT TED_BYTES)	Used (committed) size inside the virtual memory area (MB). Normally, if this value continues to be greater than the value in the Total Physical Mem Mbytes field, it indicates that a larger memory size may be necessary. #	AVG	double	No	--	--
Conns Core(CONNECTS _CORE)	Number of times it was necessary to connect to a server on which the original MS-Net SMB protocol was running following the OS startup. #	AVG	ulong	No	--	--
Conns LAN Manager 2.0(CONNECTS_L AN_MANAGER_ 20)	Number of times connection was made with a LAN Manager 2.0 server (including an LMX server). #	AVG	ulong	No	--	--
Conns LAN Manager 2.1(CONNECTS_L AN_MANAGER_ 21)	Number of times connection was made with a LAN Manager 2.1 server (including an LMX server). #	AVG	ulong	No	--	--

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Conns Windows NT(CONNECTS_ WINDOWS_NT)	Number of times connection was made with a previous OS after the OS has started.#	AVG	ulong	No	--	--
Context Blocks Queued/ sec(CONTEXT_B LOCKS_QUEUED _PER_SEC)	Rate at which work context blocks had to be entered in the FSP queue because they had to wait for processing by the server (blocks/second).	AVG	float	No	--	--
Context Switches/ sec(CONTEXT_S WITCHES_PER_S EC)	Number of context switches (when the executive thread arbitrarily releases the processor and is interrupted by a thread with higher priority, the mode is switched between the user mode and the privileged mode to use either the executive or subsystem service) in the processor that were caused by all process threads (switches/second).	AVG	float	No	--	--
Copy Read Hits %(COPY_READ_ HITS_PCT)	Rate of requests to read from the file system cache page (%).	%	float	No	--	--
Copy Reads/ sec(COPY_READ S_PER_SEC)	Number of page reads from the file system cache, including memory copying from the cache to application buffer memory (reads/second).	AVG	float	No	--	--
Current Commands(CURR ENT_COMMAND S)	Number of requests to the Redirector that have entered the queue, waiting to be processed. #	AVG	ulong	No	--	--
Current Processes(CURRE NT_PROCESSES)	Number of processes executed by processors. #	AVG	ulong	No	--	--

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Current Threads(CURRENT_THREADS)	Number of threads executed by processors. #	AVG	ulong	No	--	--
Data Flush Pages/ sec(DATA_FLUSH_PAGES_PER_SEC)	Number of times the file system cache wrote the cache content into a disk (pages/second).	AVG	float	No	--	--
Data Flushes/ sec(DATA_FLUSHES_PER_SEC)	Rate at which the file system cache wrote the cache content into a disk (flushes/second).	AVG	float	No	--	--
Data Map Hits %(DATA_MAP_HITS_PCT)	Percentage of the requests in which pages were mapped to the file system cache without paging occurring (%).	%	float	No	--	--
Data Map Pins/ sec(DATA_MAP_PINS_PER_SEC)	Always 0 because it is not supported.	AVG	float	No	--	--
Data Maps/ sec(DATA_MAPS_PER_SEC)	Rate at which pages were mapped to the file system cache (maps/second).	AVG	float	No	--	--
Demand Zero Faults/ sec(DEMAND_ZERO_FAULTS_PER_SEC)	Number of zero pages (pages no longer containing data, and containing only zeros) necessary for resolving page faults (faults/second).	AVG	float	No	--	--
Errors Access Permissions(ERRORS_ACCESS_PERMISSIONS)	Number of times the STATUS_ACCESS_DENIED error occurred during attempts to open a file because the user (as a client) was trying to access a file that is not properly protected following the OS startup. If summarized into a historical report, the maximum value is displayed. #	HI	ulong	No	--	--

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Errors Granted Access(ERRORS_GRANTED_ACCESS)	Number of times access was denied because a user without file access permission was trying to access a file that opened normally following the OS startup. If summarized into a historical report, the maximum value is displayed. #	HI	ulong	No	--	--
Errors Logon(ERRORS_LOGON)	Number of times server logon attempts failed following the OS startup. Indicates whether a password-guessing program designed to break the server security is being used. If summarized into a historical report, the maximum value is displayed. #	HI	ulong	No	--	--
Errors System(ERRORS_SYSTEM)	Number of times unexpected errors occurred on the server following the OS startup. #	AVG	ulong	No	--	--
Events(EVENTS)	Number of active events (in which two or more threads achieve execution synchronization). #	AVG	ulong	No	--	--
Exception Dispatches/sec(EXCEPTION_DISPATCHES_PER_SEC)	Rate at which the system dispatched exceptions in processors (exceptions/second).	AVG	float	No	--	--
Fast Read Not Possibles/sec(FAST_READ_NOT_POSSIBLES_PER_SEC)	Rate at which attempts to use API calls to acquire data from the file system cache without calling the file system failed (failures/second).	AVG	float	No	--	--

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Fast Read Resource Misses/ sec(FAST_READ_RESOURCE_MISSES_PER_SEC)	Rate at which cache misses occurred because requests could not be processed due to resource shortage (misses/second).	AVG	float	No	--	--
Fast Reads/ sec(FAST_READS_PER_SEC)	Rate at which data was extracted directly from the cache without going through the file system (reads/second).	AVG	float	No	--	--
File Control Bytes/ sec(FILE_CONTROL_BYTES_PER_SEC)	Rate at which data was transferred by processors in operations other than reading data from or writing data to the file system (bytes/second).	AVG	float	No	--	--
File Control Ops/ sec(FILE_CONTROL_OPERATIONS_PER_SEC)	Number of operations other than reading data from or writing data to the file system, that occurred in processors (operations/second).	AVG	float	No	--	--
File Data Ops/ sec(FILE_DATA_OPERATIONS_PER_SEC)	Number of operations in which processors read data from or wrote data to the file system (operations/second).	AVG	float	No	--	--
File Directory Searches(FILE_DIRECTORY_SEARCHES)	Number of times the files active on the server were searched. #	AVG	ulong	No	--	--
File Read Bytes/ sec(FILE_READ_BYTES_PER_SEC)	Rate at which data was transferred by processors in operations for reading data from the file system (bytes/second).	AVG	float	No	--	--
File Read Ops/ sec(FILE_READ_OPERATIONS_PER_SEC)	Rate at which operations for reading data from the file system occurred in processors (operations/second).	AVG	float	No	--	--

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File Write Bytes/ sec(FILE_WRITE BYTES_PER_SEC )	Rate at which data was transferred by processors in operations for writing data to the file system (bytes/second).	AVG	float	No	--	--
File Write Ops/ sec(FILE_WRITE OPERATIONS_P ER_SEC)	Rate at which operations for writing data to the file system occurred in processors (operations/second).	AVG	float	No	--	--
Files Open(FILE_S OPEN)	Number of files currently open on the server. #	AVG	ulong	No	--	--
Files Opened Total(FILE_S OPENED_T OTAL)	Number of times the server succeeded in opening files on behalf of clients following the OS startup. #	AVG	ulong	No	--	--
Floating Emulations/ sec(FLOATING_E MULATIONS_P ER_SEC)	Rate at which the system executed floating point emulations in processors (executions/second).	AVG	float	No	--	--
Free System Page Table Entries(FREE_S YSTEM_P AGE_T ABLE_E NTRIES)	Number of page table entries not used by the system. #	AVG	ulong	No	--	--
Interval(INTE RVAL)	Collection interval time in which records were stored (in seconds). For a real-time report, the first value is 5. If records are summarized into a historical report, the total of the summarized records is displayed.	ADD	ulong	No	--	RECORD_T IME (T1) - RECORD_T IME (T0)

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Lazy Write Flushes/ sec(LAZY_WRITE _FLUSHES_PER_ SEC)	Rate at which delay write (in which a disk is updated after a page is changed on the memory) threads wrote the cache content onto a disk (writes/second).	AVG	float	No	--	--
Lazy Write Pages/ sec(LAZY_WRITE _PAGES_PER_SE C)	Rate at which delay write (in which a disk is updated after a page is changed on the memory) threads wrote pages onto a disk (pages/second).	AVG	float	No	--	--
Logon Total(LOGON_TO TAL)	Total number of server logon attempts, including interactive logon, network logon, service logon, successful logon, and failed logon, following the OS startup. #	COPY	ulong	No	--	--
Logon/ sec(LOGON_PER_ SEC)	Rate at which interactive logon, network logon, service logon, successful logon, and failed logon occurred (logons/second).	AVG	float	No	--	--
MDL Read Hits %(MDL_READ_H ITS_PCT)	Percentage of read requests in which the MDL (Memory Descriptor List) was used to access file system cache pages to read data (%).	%	float	No	--	--
MDL Reads/ sec(MDL_READS _PER_SEC)	Rate at which the MDL (Memory Descriptor List) was used to access file system cache pages to read data (reads/second).	AVG	float	No	--	--
Mutexes(MUTEXE S)	Number of active mutexes (which control thread execution to enable execution of a single thread). #	AVG	ulong	No	--	--

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Net Errors/ sec(NETWORK_E RRORS_PER_SEC )	Rate at which unexpected errors occurred because of a serious communication error between the Redirector and the server (errors/second).	AVG	float	No	--	--
Non Committed Mbytes(NON_CO MMITTED_BYTE S)	Unused size in the virtual memory area (MB). #	AVG	double	No	--	COMMIT_LI MIT - COMMITTED _BYTES
Page Faults/ sec(PAGE_FAULT S_PER_SEC)	Rate at which page faults occurred (faults/second). Normally, if this value continues to exceed 5, it indicates a memory bottleneck.	AVG	float	No	--	--
Page Reads/ sec(PAGE_READS _PER_SEC)	The rate at which pagein operations were occurring when a page fault occurred (pagein operations/second).	AVG	float	No	--	--
Page Writes/ sec(PAGE_WRITE S_PER_SEC)	The rate at which pageout operations were occurring when a page fault occurred (pageout operations/second).	AVG	float	No	--	--
Pages Input/ sec(PAGES_INPU T_PER_SEC)	The rate at which pages were being paged in when a page fault occurred (pages/second).	AVG	float	No	--	--
Pages Output/ sec(PAGES_OUTP UT_PER_SEC)	The rate at which pages were being paged out when a page fault occurred (pages/second).	AVG	float	No	--	--

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Pages/ sec(PAGES_PER_ SEC)	The rate at which pages were being paged in and out when a page fault occurred (pages/second). This is the total of the values in the Pages Input/sec and Pages Output/sec fields. Normally, if this value continuously exceeds 5, lack of memory might be causing a system bottleneck.	AVG	float	No	--	--
Pin Read Hits %(PIN_READ_HI TS_PCT)	Percentage of the times requests to read data from a disk were not issued because pages inside the file system cache were accessed (%).	%	float	No	--	--
Pin Reads/ sec(PIN_READS_ PER_SEC)	Rate at which data was read into the file system cache during the preprocessing for writing data back to the disk (reads/second).	AVG	float	No	--	--
Pkts Rcvd/ sec(PACKETS_RE CEIVED_PER_SE C)	Rate at which the Redirector received packets (also called server message blocks [SMB]) (packets/second).	AVG	float	No	--	--
Pkts Xmitd/ sec(PACKETS_TR ANSMITTED_PE R_SEC)	Rate at which the Redirector sent packets (also called server message blocks [SMB]) (packets/second).	AVG	float	No	--	--
Pkts/ sec(PACKETS_PE R_SEC)	Rate at which the Redirector processed packets (also called server message blocks [SMB]) (packets/second).	AVG	float	No	--	--

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Pool Nonpaged Allocs(PPOOL_NO NPAGED_ALLOC S)	Number of times that a physical memory area allocated by a system component when it executed a task could not be paged out. #	AVG	ulong	No	--	--
Pool Nonpaged Bytes(PPOOL_NON PAGED_BYTES)	Size of the non-pageable physical memory area allocated by a system component when it executed a task (KB). Normally, if the value in this field continues to increase when the server activity level is not increasing, a process with memory leak may be being executed. #	AVG	double	No	--	--
Pool Nonpaged Failures(PPOOL_N ONPAGED_FAIL URES)	Average number of times allocation of non-pageable memory failed because of insufficient physical memory on the server (failures/second).	AVG	float	No	--	--
Pool Nonpaged Peak(PPOOL_NON PAGED_PEAK)	Maximum size of a non-pageable memory area allocated by a system component when it executed a task, and which was being used by the server at a given point in time following OS startup (bytes). The value in this field becomes an index for the physical memory to be installed on the computer. #	AVG	double	No	--	--

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Pool Paged Allocs(POOL_PAGED_ALLOCS)	Number of times that a physical memory area allocated by a system component when it executed a task could be paged out. #	AVG	ulong	No	--	--
Pool Paged Bytes(POOL_PAGED_BYTES)	Size of the physical memory area allocated by a system component when it executed a task that could be paged out (KB). #	AVG	double	No	--	--
Pool Paged Failures(POOL_PAGED_FAILURES)	Number of times allocation of pageable memory failed because of insufficient physical memory or virtual memory in the server following the OS startup. #	AVG	ulong	No	--	--
Pool Paged Peak(POOL_PAGED_PEAK)	Maximum size of a pageable memory area allocated by a system component when it executed a task, and which was being used by the server at a given point in time following OS startup (bytes). The value in this field becomes an index for the settings for the physical and virtual memory to be installed on the computer. #	AVG	double	No	--	--
Pool Paged Resident Bytes(POOL_PAGED_RESIDENT_BYTES)	Size of the resident physical memory area allocated by a system component when it executed a task that could be paged out (KB). #	AVG	double	No	--	--

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Privileged CPU %(PCT_TOTAL_P RIVILEGED_TIM E)	Percentage of the time the processor was used in the privileged mode (%). Percentage of the elapsed time used by the processor for executing non-idle threads in the privileged mode. The maximum value is 100 even in a multi-processor environment.	%	float	No	--	--
Processes(PROCE SSES)	Number of active processes held in the memory. #	AVG	ulong	No	--	--
Processor Queue Length(PROCESS OR_QUEUE_LEN GTH)	Number of threads in the processor queue. Unlike the disk counter, this counter counts only the threads ready to be executed. The threads being executed are ignored. If there are multiple processors, only one queue is used for the processor time.#	AVG	ulong	No	--	--
Read Aheads/ sec(READ_AHEA DS_PER_SEC)	Rate at which the cache manager detected sequential access to files and data was read from the file system cache (reads/second).	AVG	float	No	--	--
Read Bytes Cache/ sec(READ_BYTE S_CACHE_PER_S EC)	Rate at which applications used the Redirector to read data into the file system cache (bytes/second).	AVG	float	No	--	--
Read Bytes Net/ sec(READ_BYTE S_NETWORK_PE R_SEC)	Rate at which applications read data via the network because the data was not present in the file system cache (bytes/second).	AVG	float	No	--	--

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Read Bytes Nonpaging/ sec(READ_BYTE S_NON_PAGING_ PER_SEC)	Rate at which the Redirector read applications' normal file requests into the network computer (bytes/second).	AVG	float	No	--	--
Read Bytes Paging/ sec(READ_BYTE S_PAGING_PER_ SEC)	Rate at which the Redirector read data during applications' page faults (bytes/second).	AVG	float	No	--	--
Read Ops Random/ sec(READ_OPER ATIONS_RANDO M_PER_SEC)	Number of read operations in which a specific file handle was used to acquire data as a whole file and then read data randomly (operations/second).	AVG	float	No	--	--
Read Pkts Small/ sec(READ_PACK ETS_SMALL_PE R_SEC)	Rate at which applications read data that was less than 1/4 of the server's adjusted buffer size (packets/ second).	AVG	float	No	--	--
Read Pkts/ sec(READ_PACK ETS_PER_SEC)	Rate at which read packets issued data-reading requests to the network (packets/second).	AVG	float	No	--	--
Reads Denied/ sec(READS_DENI ED_PER_SEC)	Rate at which the server could not accept read requests (requests/second).	AVG	float	No	--	--
Reads Large/ sec(READS_LAR GE_PER_SEC)	Rate at which applications read data that was more than twice the server's adjusted buffer size (reads/ second).	AVG	float	No	--	--
Record Time(RECORD_TI ME)	Time at which the record was created.	COPY	time_t	No	--	--
Record Type(INPUT_REC ORD_TYPE)	Record name. Always PI.	COPY	char(8)	No	--	--

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Redir Bytes Rcvd/ sec(REDIR_BYTE S_RECEIVED_PE R_SEC)	Rate at which the Redirector received data from the network (bytes/ second).	AVG	float	No	--	--
Redir Bytes Total/ sec(REDIR_BYTE S_TOTAL_PER_S EC)	Rate at which the Redirector exchanged data from the network (bytes/ second).	AVG	float	No	--	--
Redir Bytes Xmitd/ sec(REDIR_BYTE S_TRANSMITTE D_PER_SEC)	Rate at which the Redirector sent data to the network (bytes/second).	AVG	float	No	--	--
Redir File Data Ops/ sec(REDIR_FILE_ DATA_OPERATIO NS_PER_SEC)	Number of data operations the Redirector was processing (operations/ second).	AVG	float	No	--	--
Redir File Read Ops/ sec(REDIR_FILE_ READ_OPS_PER_ SEC)	Rate at which applications requested data from the Redirector (operations/ second).	AVG	float	No	--	--
Redir File Write Ops/ sec(REDIR_FILE_ WRITE_OPS_PER_ SEC)	Rate at which applications sent data to the Redirector (operations/second).	AVG	float	No	--	--
Redir Server Sessions(REDIR_S ERVER_SESSION S)	Number of security object sessions managed by the Redirector following the OS startup. #	AVG	ulong	No	--	--
Sections(SECTION S)	Number of active sections (virtual memory areas created by processes for storing data). #	AVG	ulong	No	--	--

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Semaphores(SEMAPHORES)	Number of active semaphores (using a semaphore to acquire exclusive access to data that is shared with other threads). #	AVG	ulong	No	--	--
Server Disconnects(SERVER_DISCONNECTS)	Number of times the server ended connection to the Redirector following the OS startup. #	AVG	ulong	No	--	--
Server Pool Nonpaged Bytes(SERVER_POOL_NONPAGED_BYTES)	Size of the non-pageable physical memory area allocated by a system component when it executed a task that is being used by a server (bytes). #	AVG	double	No	--	--
Server Pool Paged Bytes(SERVER_POOL_PAGED_BYTES)	Size of the pageable physical memory area allocated by a system component when it executed a task that could be paged out (bytes). #	AVG	double	No	--	--
Server Reconnects(SERVER_RECONNECTS)	Number of times the Redirector had to reconnect to the server to complete new active requests following the OS startup. #	AVG	ulong	No	--	--
Server Sessions(SERVER_SESSIONS)	Number of sessions that were active on the server. #	AVG	ulong	No	--	--
Server Sessions Hung(SERVER_SESSIONS_HUNG)	Number of active sessions that could not continue processing because there is no response from a remote server, resulting in time-out. #	AVG	ulong	No	--	--

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Sessions Errored Out(SESSIONS_ER RRORED_OUT)	Number of sessions that were terminated by unexpected errors, automatic disconnection time-outs, or normally connected sessions. #	AVG	ulong	No	--	--
Sessions Forced Off(SESSIONS_F ORCED_OFF)	Number of sessions that were forcibly logged off following the OS startup. #	AVG	ulong	No	--	--
Sessions Logged Off(SESSIONS_L OGGED_OFF)	Number of sessions that were terminated normally following the OS startup. #	AVG	ulong	No	--	--
Sessions Timed Out(SESSIONS_T IMED_OUT)	Number of sessions that were terminated because the idle time exceeded the value of the server's AutoDisconnect parameter following the OS startup. #	AVG	ulong	No	--	--
Sync Copy Reads/ sec(SYNC_COPY_ READS_PER_SEC )	Rate at which synchronous read from file system cache pages, including memory copy from the cache to application buffers, occurred (reads/second).	AVG	float	No	--	--
Sync Data Maps/ sec(SYNC_DATA_ MAPS_PER_SEC)	Rate at which the system waited for a page to be extracted when the page mapped to the file system cache was not found in the main memory (maps/second).	AVG	float	No	--	--
Sync Fast Reads/ sec(SYNC_FAST_ READS_PER_SEC )	Rate at which data was synchronously extracted directly from the cache without going through the file system (reads/second).	AVG	float	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Supported versions</b>	<b>Data source</b>
Sync MDL Reads/ sec(SYNC_MDL_ READS_PER_SEC )	Rate at which the MDL (Memory Descriptor List) was used to access file system cache pages, resulting in synchronous read operations (reads/second).	AVG	float	No	--	--
Sync Pin Reads/ sec(SYNC_PIN_R EADS_PER_SEC)	Rate at which synchronous read occurred inside the file system cache during the preprocessing for writing data back to the disk (reads/second).	AVG	float	No	--	--
System Cache Resident Bytes(SYSTEM_C ACHE_RESIDEN T_BYTES)	Size of pageable physical memory inside the file system cache, used by the OS code (file system that is read by Ntoskrnl.exe, Hal.dll, boot driver, or Ntldr/osloader) (bytes). #	AVG	double	No	--	--
System Calls/ sec(SYSTEM_CA LLS_PER_SEC)	Rate at which a process executed by a processor called a system service routine (calls/second).	AVG	float	No	--	--
System Code Resident Bytes(SYSTEM_C ODE_RESIDENT_ BYTES)	Size of pageable physical memory, used by the OS code (file system that is read by Ntoskrnl.exe, Hal.dll, boot driver, or Ntldr/osloader) (bytes). #	AVG	double	No	--	--
System Code Total Bytes(SYSTEM_C ODE_TOTAL_BY TES)	Size of pageable virtual memory, used by the OS code (file system that is read by Ntoskrnl.exe, Hal.dll, boot driver, or Ntldr/osloader) (bytes). #	AVG	double	No	--	--
System Driver Resident Bytes(SYSTEM_D RIVER_RESIDEN T_BYTES)	Size of pageable physical memory used by device drivers (bytes). #	AVG	double	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
System Driver Total Bytes(SYSTEM_DRIVER_TOTAL_BYTES)	Size of pageable virtual memory used by device drivers (bytes). #	AVG	double	No	--	--
System Type(SYSTEM_TYPE)	Processor type.	COPY	string(50)	No	--	--
System Up Time(SYSTEM_UP_TIME)	Amount of operation time since the OS started (seconds).	COPY	ulong	No	--	--
Threads(THREADS)	Number of active threads held on the memory. #	AVG	ulong	No	--	--
Total APC Bypasses/sec(TOTAL_APC_BYPASSES_PER_SEC)	Rate at which the kernel APC (Asynchronous Procedure Call) interrupts were bypassed at the processor (bypasses/second).	AVG	float	No	2003(x86) , 2003(x64) , 2008(x86) , 2008(x64)	--
Total DPC Bypasses/sec(TOTAL_DPC_BYPASSES_PER_SEC)	Rate at which DPC (Delayed Procedure Call) interrupts in the privileged mode, which are executed at lower priority than the standard interrupts, were bypassed at the processor (bypasses/second).	AVG	float	No	2003(x86) , 2003(x64) , 2008(x86) , 2008(x64)	--
Total DPC Rate(TOTAL_DPC_RATE)	Average processor clock value between timer checks when DPC (Delayed Procedure Call) interrupts in the privileged mode, which are executed at lower priority than the standard interrupts, were added to the processor's DPC queue. #	AVG	ulong	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Total DPCs Queued/ sec(TOTAL_DPCS _QUEUED_PER_ SEC)	Average number of DPC (Delayed Procedure Call) interrupts in the privileged mode, which are executed at lower priority than the standard interrupts, that were added to the processor's DPC queue (DPCs/second).	AVG	float	No	--	--
Total Interrupts/ sec(TOTAL_INTE RRUPTS_PER_SE C)	Rate at which the processor received and processed hardware (devices that cause interrupts, such as system clock, mouse, disk driver, data communication line, NIC, and other peripheral devices) interrupts (interrupts/second). Does not include DPC (Delayed Procedure Call) interrupts. Normally, if the value in this field has increased significantly when there is no system activity, it indicates a hardware problem, such as the presence of a slow device.	AVG	float	No	--	--
Total Physical Mem Mbytes(TOTAL_P HYSICAL_MEMO RY_KBYTES)	Total size of the physical memory area (MB). #	COPY	double	No	--	ReturnValue / 1MB
Trans Pages RePurposed/ sec(TRANS_PAGE S_REPURPOSED_ PER_SEC)	Rate at which transfer cache pages remaining inside the cache were reused for other purposes (pages/second).	AVG	double	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Transition Faults/ sec(TRANSITION _FAULTS_PER_S EC)	Number of times paging did not occur because a page that was being used by another process that shares the page or a page located in an updated page list or standby list was recovered when a paging fault occurred (faults/second).	AVG	float	No	--	--
Used Physical Mem Mbytes(USED_PH YSICAL_MEMOR Y_BYTES)	Size of physical memory area used (MB). #	AVG	double	No	--	TOTAL_PHYS ICAL_MEMO RY_KBYTES- AVAILABLE_ BYTES
User CPU %(PCT_TOTAL_U SER_TIME)	Processor usage in the user mode (%). Percentage of the elapsed time the processor used for executing non-idle threads in the user mode. The maximum value is 100 even in a multi-processor environment.	%	float	No	--	--
Work Item Shortages(WORK_ ITEM_SHORTAG ES)	Rate at which STATUS_DATA_NOT_ACCEPTED (work item cannot be used or has not been allocated) was returned during receipt reporting (work items/second).	AVG	float	No	--	--
Write Bytes Cache/ sec(WRITE_BYTE S_CACHE_PER_S EC)	Rate at which applications used the Redirector to write data into the file system cache (bytes/second).	AVG	float	No	--	--
Write Bytes Net/ sec(WRITE_BYTE S_NETWORK_PE R_SEC)	Rate at which applications wrote data via the network because the data was not in the file system cache (bytes/second).	AVG	float	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Write Bytes Nonpaging/ sec(WRITE_BYTE S_NON_PAGING_ PER_SEC)	Rate at which the Redirector wrote applications' normal file requests onto the network computer (bytes/second).	AVG	float	No	--	--
Write Bytes Paging/ sec(WRITE_BYTE S_PAGING_PER_ SEC)	Rate at which the Redirector wrote data during applications' page faults (bytes/second).	AVG	float	No	--	--
Write Copies/ sec(WRITE_COPI ES_PER_SEC)	Rate at which a page was copied from another location within the physical memory when a page fault occurred (writes/second).	AVG	float	No	--	--
Write Ops Random/ sec(WRITE_OPER ATIONS_RAND OM_PER_SEC)	Number of read operations in which a specific file handle was used to acquire data as a whole file and then write data randomly (operations/second).	AVG	float	No	--	--
Write Pkts Small/ sec(WRITE_PACK ETS_SMALL_P ER_SEC)	Rate at which applications wrote data that was less than 1/4 of the server's adjusted buffer size (packets/second).	AVG	float	No	--	--
Write Pkts/ sec(WRITE_PACK ETS_PER_SEC)	Rate at which write packets issued data-writing requests to the network (packets/second).	AVG	float	No	--	--
Writes Denied/ sec(WRITES_DEN IED_PER_SEC)	Rate at which the server could not accept write requests (rejections/ second).	AVG	float	No	--	--
Writes Large/ sec(WRITES_LAR GE_PER_SEC)	Rate at which applications wrote data that was more than twice the server's adjusted buffer size (writes/second).	AVG	float	No	--	--

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## TCP Overview (PI\_TCP)

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### Function

The TCP Overview (PI\_TCP) record stores the performance data per unit time on the number of times TCP segments were sent/received using the TCP protocol of Internet Protocol Version 4, and the number of TCP connections.

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

None

### Lifetime

None

### Record size

- Fixed portion: 825 bytes
- Variable portion: 0 bytes

**Fields**

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Conn Failures(CONNEC TION_FAILURES)	Combined total of the number of times the TCP connection state transitioned directly from SYN-SENT or SYN-RCVD to CLOSED, and the number of times the TCP connection state transitioned directly from SYN-RCVD to LISTEN following the OS startup. #	AVG	ulong	No	--	--
Conns Active(CONNECT IONS_ACTIVE)	Number of times the TCP connection state transitioned directly from CLOSED to SYN-SENT following the OS startup. #	AVG	ulong	No	--	--
Conns Established(CONN ECTIONS_ESTAB LISHED)	Total number of TCP connections that were either in the ESTABLISHED or CLOSE-WAIT state. #	AVG	ulong	No	--	--
Conns Passive(CONNEC TIONS_PASSIVE)	Number of times the TCP connection state transitioned directly from LISTEN to SYN-RCVD following the OS startup. #	AVG	ulong	No	--	--
Conns Reset(CONNECTI ONS_RESET)	Number of times the TCP connection state transitioned directly from ESTABLISHED or CLOSE-WAIT to CLOSED following the OS startup. #	AVG	ulong	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Interval(INTERVAL)	Collection interval time in which records were stored (in seconds). For a real-time report, the first value is 5. If records are summarized into a historical report, the total of the summarized records is displayed.	ADD	ulong	No	--	RECORD_TIME (T1) - RECORD_TIME (T0)
Record Time(RECORD_TIME)	Time at which the record was created.	COPY	time_t	No	--	--
Record Type(INPUT_RECORD_TYPE)	Record name. Always TCP.	COPY	char(8)	No	--	--
Segments Rcvd/sec(SEGMENTS_RECEIVED_PER_SEC)	Rate at which segments were received (segments/second). Includes those received in error and those that are on the established connection.	AVG	float	No	--	--
Segments Retransmitted/sec(SEGMENTS_RETRANSMITTED_PER_SEC)	Rate at which segments containing 1-byte or larger data that was transferred before were re-transferred (segments/second).	AVG	float	No	--	--
Segments Sent/sec(SEGMENTS_SENT_PER_SEC)	Rate at which segments were sent (segments/second). Includes connected segments but does not include segments containing resent bytes.	AVG	float	No	--	--
Segments/sec(SEGMENTS_PER_SEC)	Rate at which TCP segments were sent/received using the TCP protocol (segments/second).	AVG	float	No	--	--

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## TCP Version 6 Overview (PI\_TCP6)

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### Function

The TCP Version 6 Overview (PI\_TCP6) record stores the performance data per unit time on the number of times TCP segments were sent/received when the TCP protocol of Internet Protocol Version 6 was used, and the number of TCP connections.

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

None

### Lifetime

None

### Record size

- Fixed portion: 825 bytes
- Variable portion: 0 bytes

**Fields**

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Conn Failures(CONNEC TION_FAILURES)	Combined total of the number of times the TCP connection state transitioned directly from SYN-SENT or SYN-RCVD to CLOSED, and the number of times the TCP connection state transitioned directly from SYN-RCVD to LISTEN following the OS startup. #	AVG	ulong	No	--	--
Conns Active(CONNECT IONS_ACTIVE)	Number of times the TCP connection state transitioned directly from CLOSED to SYN-SENT following the OS startup #	AVG	ulong	No	--	--
Conns Established(CONN ECTIONS_ESTAB LISHED)	Total number of TCP connections that were either in the ESTABLISHED or CLOSE-WAIT state #	AVG	ulong	No	--	--
Conns Passive(CONNEC TIONS_PASSIVE)	Number of times the TCP connection state transitioned directly from LISTEN to SYN-RCVD following the OS startup #	AVG	ulong	No	--	--
Conns Reset(CONNECTI ONS_RESET)	Number of times the TCP connection state transitioned directly from ESTABLISHED or CLOSE-WAIT to CLOSED following the OS startup #	AVG	ulong	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Interval(INTERVAL)	Collection interval time in which records were stored (in seconds). For a real-time report, the first value is 5. If records are summarized into a historical report, the total of the summarized records is displayed.	ADD	ulong	No	--	RECORD_TIME (T1) - RECORD_TIME (T0)
Record Time(RECORD_TIME)	Time at which the record was created	COPY	time_t	No	--	--
Record Type(INPUT_RECORD_TYPE)	Record name. Always TCP6.	COPY	char(8)	No	--	--
Segments Rcvd/sec(SEGMENTS_RECEIVED_PER_SEC)	Rate at which segments were received (segments/second). Includes those received in error and those that are on the established connection	AVG	float	No	--	--
Segments Retransmitted/sec(SEGMENTS_RETRANSMITTED_PER_SEC)	Rate at which segments containing 1-byte or larger data that was transferred before were re-transferred (segments/second)	AVG	float	No	--	--
Segments Sent/sec(SEGMENTS_SENT_PER_SEC)	Rate at which segments were sent (segments/second). Includes connected segments but does not include segments containing resent bytes.	AVG	float	No	--	--
Segments/sec(SEGMENTS_PER_SEC)	Rate at which TCP segments were sent/received using the TCP protocol (segments/second)	AVG	float	No	--	--

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## UDP Overview (PI\_UDP)

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### Function

The UDP Overview (PI\_UDP) record stores the performance data per unit time on the number of times UDP Datagram was sent/received using the UDP protocol of Internet Protocol Version 4, and the number of various types of UDP errors.

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

None

### Lifetime

None

### Record size

- Fixed portion: 761 bytes
- Variable portion: 0 bytes

### Fields

PFM-View name (PFM-Manager name)	Description	Summary	Format	Delta	Not Support ed versions	Data source
Datagrams No Port/ sec(DATAGRAMS _NO_PORT_PER_ SEC)	Rate at which UDP Datagrams for which no application exists at the destination port were received (Datagrams/ second).	AVG	float	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Datagrams Rcvd Errors(DATAGRAMS_RECEIVED_ERRORS)	Number of received UDP Datagrams that could not be delivered for reasons other than the absence of application at the destination port following the OS startup. #	AVG	ulong	No	--	--
Datagrams Rcvd/ sec(DATAGRAMS_RECEIVED_PER_SEC)	Rate at which UDP Datagrams were delivered to UDP users (Datagrams/second).	AVG	float	No	--	--
Datagrams Sent/ sec(DATAGRAMS_SENT_PER_SEC)	Rate at which UDP Datagrams were sent by entities (Datagrams/second).	AVG	float	No	--	--
Datagrams/ sec(DATAGRAMS_PER_SEC)	Rate at which UDP Datagrams were sent/received by entities (Datagrams/second).	AVG	float	No	--	--
Interval(INTERVAL)	Collection interval time in which records were stored (in seconds). For a real-time report, the first value is 5. If records are summarized into a historical report, the total of the summarized records is displayed.	ADD	ulong	No	--	RECORD_TIME (T1) - RECORD_TIME (T0)
Record Time(RECORD_TIME)	Time at which the record was created.	COPY	time_t	No	--	--
Record Type(INPUT_RECORD_TYPE)	Record name. Always UDP.	COPY	char(8)	No	--	--

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## UDP Version 6 Overview (PI\_UDP6)

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### Function

The UDP Version 6 Overview (PI\_UDP6) record stores the performance data per unit time on the rate at which UDP Datagram was sent/received when the UDP protocol of Internet Protocol Version 6 was used, and the number of various types of UDP errors.

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

None

### Lifetime

None

### Record size

- Fixed portion: 761 bytes
- Variable portion: 0 bytes

### Fields

PFM-View name (PFM-Manager name)	Description	Sum mary	Format	De lta	Not Support ed versions	Data source
Datagrams No Port/ sec(DATAGRAMS _NO_PORT_PER_ SEC)	Rate at which UDP Datagrams for which no application exists at the destination port were received (Datagrams/ second)	AVG	float	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Datagrams Rcvd Errors(DATAGRAMS_RECEIVED_ERRORS)	Number of received UDP Datagrams that could not be delivered for reasons other than the absence of application at the destination port following the OS startup #	AVG	ulong	No	--	--
Datagrams Rcvd/ sec(DATAGRAMS_RECEIVED_PER_SEC)	Rate at which UDP Datagrams were delivered to UDP users (Datagrams/second)	AVG	float	No	--	--
Datagrams Sent/ sec(DATAGRAMS_SENT_PER_SEC)	Rate at which UDP Datagrams were sent by entities (Datagrams/second)	AVG	float	No	--	--
Datagrams/ sec(DATAGRAMS_PER_SEC)	Rate at which UDP Datagrams were sent/received by entities (Datagrams/second)	AVG	float	No	--	--
Interval(INTERVAL)	Collection interval time in which records were stored (in seconds). For a real-time report, the first value is 5. If records are summarized into a historical report, the total of the summarized records is displayed.	ADD	ulong	No	--	RECORD_TIME (T1) - RECORD_TIME (T0)
Record Time(RECORD_TIME)	Time at which the record was created	COPY	time_t	No	--	--
Record Type(INPUT_RECORD_TYPE)	Record name. Always UDP6.	COPY	char(8)	No	--	--

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## User Data Detail (PD\_UPD)

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### Function

The User Data Detail (PD\_UPD) record is a user-defined record that stores user-specific performance data showing the state at a given point in time.

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

- PD\_UPD\_TT
- PD\_UPD\_TS\_KEY
- PD\_UPD\_TD\_KEY

### Lifetime

From the time a `jpcuser` command is executed until the next `jpcuser` command is executed

### Record size

- Fixed portion: 681 bytes
- Variable portion: 284 bytes

### Fields

PFM-View name (PFM-Manager name)	Description	Sum mary	Format	De lta	Not Support ed versions	Data source
Record Type(INPUT_REC ORD_TYPE)	Record type (UPD)	--	char (8)	No	--	--
Record Time(RECORD_TI ME)	Time at which the record was created (GMT)	--	time_t	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Interval(INTERVAL)	Length in seconds of the interval for storing the record	--	ulong	No	--	--
Trans String Key(TS_KEY)	Transaction String Key	--	string(20)	No	--	--
Trans Data Key(TD_KEY)	Transaction Data Key	--	ulong	No	--	--
Trans Type(TT)	Transaction Type	--	string(20)	No	--	--
Collect Time(API_TIME)	Time when data was converted	--	time_t	No	--	--
User Long 1(L1)	Long integer value	--	double	No	--	--
User Long 2(L2)	Long integer value	--	double	No	--	--
User Unsigned Long 1(UL1)	Unsigned long value	--	ulong	No	--	--
User Unsigned Long 2(UL2)	Unsigned long value	--	ulong	No	--	--
User Float 1(F1)	Floating-point value	--	double	No	--	--
User Float 2(F2)	Floating-point value	--	double	No	--	--
User Time 1(T1)	Time value (Time is displayed at the PFM - Web Console)	--	time_t	No	--	--
User String 1(S1)	Character-string 16 characters in length	--	string(16)	No	--	--
User String 2(S2)	Character-string 16 characters in length	--	string(16)	No	--	--
User String 3(S3)	Character-string 16 characters in length	--	string(16)	No	--	--
User String 4(S4)	Character-string 16 characters in length	--	string(16)	No	--	--
User String 5(S5)	Character-string 32 characters in length	--	string(32)	No	--	--

User Data Detail (PD\_UPD)

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
User String 6(S6)	Character-string 32 characters in length	--	string(3 2)	No	--	--
User String 7(S7)	Character-string 64 characters in length	--	string(6 4)	No	--	--

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## User Data Detail - Extended (PD\_UPDB)

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### Function

The User Data Detail - Extended (PD\_UPDB) record is a user-defined record that stores user-specific performance data showing the state at a given point in time. This record has more fields than the User Data Detail (PD\_UPD) record.

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

- PD\_UPDB\_TT
- PD\_UPDB\_TS\_KEY
- PD\_UPDB\_TD\_KEY

### Lifetime

From the time a `jpcuser` command is executed until the next `jpcuser` command is executed

### Record size

- Fixed portion: 681 bytes
- Variable portion: 712 bytes

### Fields

PFM-View name (PFM-Manager name)	Description	Sum mary	Format	De lta	Not Support ed versions	Data source
Record Type(INPUT_REC ORD_TYPE)	Record type (UPDB)	--	char (8)	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Record Time(RECORD_TI ME)	Time at which the record was created (GMT)	--	time_t	No	--	--
Interval(INTERVA L)	Length in seconds of the interval for storing the record	--	ulong	No	--	--
Trans String Key(TS_KEY)	Transaction String Key	--	string(2 0)	No	--	--
Trans Data Key(TD_KEY)	Transaction Data Key	--	ulong	No	--	--
Trans Type(TT)	Transaction Type	--	string(2 0)	No	--	--
Collect Time(API_TIME)	Time when data was converted	--	time_t	No	--	--
User Long 1(L1)	Long integer value	--	double	No	--	--
User Long 2(L2)	Long integer value	--	double	No	--	--
User Long 3(L3)	Long integer value	--	double	No	--	--
User Long 4(L4)	Long integer value	--	double	No	--	--
User Long 5(L5)	Long integer value	--	double	No	--	--
User Unsigned Long 1(UL1)	Unsigned long value	--	ulong	No	--	--
User Unsigned Long 2(UL2)	Unsigned long value	--	ulong	No	--	--
User Unsigned Long 3(UL3)	Unsigned long value	--	ulong	No	--	--
User Unsigned Long 4(UL4)	Unsigned long value	--	ulong	No	--	--
User Unsigned Long 5(UL5)	Unsigned long value	--	ulong	No	--	--
User Float 1(F1)	Floating-point value	--	double	No	--	--
User Float 2(F2)	Floating-point value	--	double	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
User Float 3(F3)	Floating-point value	--	double	No	--	--
User Float 4(F4)	Floating-point value	--	double	No	--	--
User Float 5(F5)	Floating-point value	--	double	No	--	--
User Time 1(T1)	Time value (Time is displayed at the PFM - Web Console)	--	time_t	No	--	--
User String 1(S1)	Character-string 16 characters in length	--	string(16)	No	--	--
User String 2(S2)	Character-string 16 characters in length	--	string(16)	No	--	--
User String 3(S3)	Character-string 16 characters in length	--	string(16)	No	--	--
User String 4(S4)	Character-string 16 characters in length	--	string(16)	No	--	--
User String 5(S5)	Character-string 16 characters in length	--	string(16)	No	--	--
User String 6(S6)	Character-string 32 characters in length	--	string(32)	No	--	--
User String 7(S7)	Character-string 32 characters in length	--	string(32)	No	--	--
User String 8(S8)	Character-string 32 characters in length	--	string(32)	No	--	--
User String 9(S9)	Character-string 32 characters in length	--	string(32)	No	--	--
User String 10(S10)	Character-string 32 characters in length	--	string(32)	No	--	--
User String 11(S11)	Character-string 64 characters in length	--	string(64)	No	--	--
User String 12(S12)	Character-string 64 characters in length	--	string(64)	No	--	--
User String 13(S13)	Character-string 64 characters in length	--	string(64)	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
User String 14(S14)	Character-string 64 characters in length	--	string(6 4)	No	--	--
User String 15(S15)	Character-string 64 characters in length	--	string(6 4)	No	--	--

---

## User Data Interval (PI\_UPI)

---

### Function

The User Data Interval (PI\_UPI) record is a user-defined record that stores user-specific performance data per unit time.

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

- PI\_UPI\_TT
- PI\_UPI\_TS\_KEY
- PI\_UPI\_TD\_KEY

### Lifetime

From the time a `jpcuser` command is executed until the next `jpcuser` command is executed

### Record size

- Fixed portion: 681 bytes
- Variable portion: 396 bytes

### Fields

PFM-View name (PFM-Manager name)	Description	Summary	Format	Delta	Not Supported versions	Data source
Record Type(INPUT_RECORD_TYPE)	Record type (UPI)	COPY	char (8)	No	--	--
Record Time(RECORD_TIME)	Time at which the record was created (GMT)	COPY	time_t	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Interval(INTERVAL)	Length in seconds of the interval for storing the record. The normal value is 0.	COPY	ulong	No	--	--
Trans String Key(TS_KEY)	Transaction String Key	COPY	string(20)	No	--	--
Trans Data Key(TD_KEY)	Transaction Data Key	COPY	ulong	No	--	--
Trans Type(TT)	Transaction Type	COPY	string(20)	No	--	--
Collect Time(API_TIME)	Time when data was converted	COPY	time_t	No	--	--
User Long 1(L1)	Long integer value	AVG	double	No	--	--
User Long 2(L2)	Long integer value	AVG	double	No	--	--
User Long Roll 1(L1_R)	Accumulated long integer value (This data is added when this data is summarized)	ADD	double	No	--	--
User Long Roll 2(L2_R)	Accumulated long integer value (This data is added when this data is summarized)	ADD	double	No	--	--
User Unsigned Long 1(UL1)	Unsigned long value	AVG	ulong	No	--	--
User Unsigned Long 2(UL2)	Unsigned long value	AVG	ulong	No	--	--
User Unsigned Long Roll 1(UL1_R)	Accumulated unsigned long integer value (This data is added when this data is summarized)	ADD	ulong	No	--	--
User Unsigned Long Roll 2(UL2_R)	Accumulated unsigned long integer value (This data is added when this data is summarized)	ADD	ulong	No	--	--
User Float 1(F1)	Floating-point value	AVG	double	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Supported versions</b>	<b>Data source</b>
User Float 2(F2)	Floating-point value	AVG	double	No	--	--
User Float Roll 1(F1_R)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Roll 2(F2_R)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Time 1(T1)	Time value (Time is displayed at the PFM - Web Console)	COPY	time_t	No	--	--
User String 1(S1)	Character-string 16 characters in length	COPY	string(1 6)	No	--	--
User String 2(S2)	Character-string 16 characters in length	COPY	string(1 6)	No	--	--
User String 3(S3)	Character-string 16 characters in length	COPY	string(1 6)	No	--	--
User String 4(S4)	Character-string 16 characters in length	COPY	string(1 6)	No	--	--
User String 5(S5)	Character-string 32 characters in length	COPY	string(3 2)	No	--	--
User String 6(S6)	Character-string 32 characters in length	COPY	string(3 2)	No	--	--
User String 7(S7)	Character-string 64 characters in length	COPY	string(6 4)	No	--	--

---

## User Data Interval - Extended (PI\_UPIB)

---

### Function

The User Data Interval - Extended (PI\_UPIB) record is a user-defined record that stores user-specific performance data per unit time. This record has more fields than the User Data Interval (PI\_UPI) record.

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

- PI\_UPIB\_TT
- PI\_UPIB\_TS\_KEY
- PI\_UPIB\_TD\_KEY

### Lifetime

From the time a `jpcuser` command is executed until the next `jpcuser` command is executed

### Record size

- Fixed portion: 681 bytes
- Variable portion: 992 bytes

### Fields

PFM-View name (PFM-Manager name)	Description	Sum mary	Format	De lta	Not Support ed versions	Data source
Record Time(RECORD_TI ME)	Time at which the record was created (GMT)	COPY	time_t	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Record Type(INPUT_RECORD_TYPE)	Record type (UPIB)	COPY	char (8)	No	--	--
Interval(INTERVAL)	length in seconds of the interval for storing the record. The normal value is 0.	COPY	ulong	No	--	--
Trans String Key(TS_KEY)	Transaction String Key	COPY	string(20)	No	--	--
Trans Data Key(TD_KEY)	Transaction Data Key	COPY	ulong	No	--	--
Trans Type(TT)	Transaction Type	COPY	string(20)	No	--	--
Collect Time(API_TIME)	Time when data was converted	COPY	time_t	No	--	--
User Long 1(L1)	Long integer value	AVG	double	No	--	--
User Long 2(L2)	Long integer value	AVG	double	No	--	--
User Long 3(L3)	Long integer value	AVG	double	No	--	--
User Long 4(L4)	Long integer value	AVG	double	No	--	--
User Long 5(L5)	Long integer value	AVG	double	No	--	--
User Long Roll 1(L1_R)	Accumulated long integer value (This data is added when this data is summarized)	ADD	double	No	--	--
User Long Roll 2(L2_R)	Accumulated long integer value (This data is added when this data is summarized)	ADD	double	No	--	--
User Long Roll 3(L3_R)	Accumulated long integer value (This data is added when this data is summarized)	ADD	double	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
User Long Roll 4(L4_R)	Accumulated long integer value (This data is added when this data is summarized)	ADD	double	No	--	--
User Long Roll 5(L5_R)	Accumulated long integer value (This data is added when this data is summarized)	ADD	double	No	--	--
User Unsigned Long 1(UL1)	Unsigned long value	AVG	ulong	No	--	--
User Unsigned Long 2(UL2)	Unsigned long value	AVG	ulong	No	--	--
User Unsigned Long 3(UL3)	Unsigned long value	AVG	ulong	No	--	--
User Unsigned Long 4(UL4)	Unsigned long value	AVG	ulong	No	--	--
User Unsigned Long 5(UL5)	Unsigned long value	AVG	ulong	No	--	--
User Unsigned Long Roll 1(UL1_R)	Accumulated unsigned long value (This data is added when this data is summarized)	ADD	ulong	No	--	--
User Unsigned Long Roll 2(UL2_R)	Accumulated unsigned long value (This data is added when this data is summarized)	ADD	ulong	No	--	--
User Unsigned Long Roll 3(UL3_R)	Accumulated unsigned long value (This data is added when this data is summarized)	ADD	ulong	No	--	--
User Unsigned Long Roll 4(UL4_R)	Accumulated unsigned long value (This data is added when this data is summarized)	ADD	ulong	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
User Unsigned Long Roll 5(UL5_R)	Accumulated unsigned long value (This data is added when this data is summarized)	ADD	ulong	No	--	--
User Float 1(F1)	Floating-point value	AVG	double	No	--	--
User Float 2(F2)	Floating-point value	AVG	double	No	--	--
User Float 3(F3)	Floating-point value	AVG	double	No	--	--
User Float 4(F4)	Floating-point value	AVG	double	No	--	--
User Float 5(F5)	Floating-point value	AVG	double	No	--	--
User Float Roll 1(F1_R)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Roll 2(F2_R)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Roll 3(F3_R)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Roll 4(F4_R)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Roll 5(F5_R)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Time 1(T1)	Time value (Time is displayed at the PFM - Web Console)	COPY	time_t	No	--	--
User String 1(S1)	Character-string 16 characters in length	COPY	string(16)	No	--	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
User String 2(S2)	Character-string 16 characters in length	COPY	string(16)	No	--	--
User String 3(S3)	Character-string 16 characters in length	COPY	string(16)	No	--	--
User String 4(S4)	Character-string 16 characters in length	COPY	string(16)	No	--	--
User String 5(S5)	Character-string 16 characters in length	COPY	string(16)	No	--	--
User String 6(S6)	Character-string 32 characters in length	COPY	string(32)	No	--	--
User String 7(S7)	Character-string 32 characters in length	COPY	string(32)	No	--	--
User String 8(S8)	Character-string 32 characters in length	COPY	string(32)	No	--	--
User String 9(S9)	Character-string 32 characters in length	COPY	string(32)	No	--	--
User String 10(S10)	Character-string 32 characters in length	COPY	string(32)	No	--	--
User String 11(S11)	Character-string 64 characters in length	COPY	string(64)	No	--	--
User String 12(S12)	Character-string 64 characters in length	COPY	string(64)	No	--	--
User String 13(S13)	Character-string 64 characters in length	COPY	string(64)	No	--	--
User String 14(S14)	Character-string 64 characters in length	COPY	string(64)	No	--	--
User String 15(S15)	Character-string 64 characters in length	COPY	string(64)	No	--	--

---

## WINS Server Overview (PI\_WINS)

---

### Function

The WINS Server Overview (PI\_WINS) record stores the performance data per unit time on the communication of the WINS server service.

*Notes:*

- This record cannot be used in Windows Server 2003 (x64) and the 64-bit version of Windows Server 2008.
- Windows Internet Name Service (WINS), a network service, must be installed.

### Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset	0	Yes
Log	No	Yes
LOGIF	Blank	Yes

### ODBC key fields

None

### Lifetime

None

### Record size

- Fixed portion: 921 bytes
- Variable portion: 0 bytes

### Fields

PFM-View name (PFM-Manager name)	Description	Sum mary	Format	De lta	Not Support ed versions	Data source
Failed Queries/ sec(FAILED_QUE RIES_PER_SEC)	Rate at which the WINS server failed to receive queries (failures/second).	AVG	float	No	2003(x64) , 2008(x64)	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Failed Releases/ sec(FAILED_REL EASES_PER_SEC )	Rate at which the WINS server failed to receive releases (failures/second).	AVG	float	No	2003(x64) , 2008(x64)	--
Group Conflicts/ sec(GROUP_CON FLICTS_PER_SE C)	Rate at which the group registrations received by the WINS server conflicted with records inside the database (conflicts/ second).	AVG	float	No	2003(x64) , 2008(x64)	--
Group Registrations/ sec(GROUP_REGI STRATIONS_PER _SEC)	Rate at which the WINS server received group registrations (registrations/ second).	AVG	float	No	2003(x64) , 2008(x64)	--
Group Renewals/ sec(GROUP_REN EWALS_PER_SE C)	Rate at which the WINS server received group renewals (renewals/ second).	AVG	float	No	2003(x64) , 2008(x64)	--
Interval(INTERVA L)	Collection interval time in which records were stored (in seconds). For a real-time report, the first value is 5. If records are summarized into a historical report, the total of the summarized records is displayed.	ADD	ulong	No	2003(x64) , 2008(x64)	RECORD_TI ME (T1) - RECORD_TI ME (T0)
Queries/ sec(QUERIES_PE R_SEC)	Rate at which the WINS server received queries (queries/second).	AVG	float	No	2003(x64) , 2008(x64)	--
Record Time(RECORD_TI ME)	Time at which the record was created.	COPY	time_t	No	2003(x64) , 2008(x64)	--
Record Type(INPUT_REC ORD_TYPE)	Record name. Always WINS.	COPY	char(8)	No	2003(x64) , 2008(x64)	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Supported versions</b>	<b>Data source</b>
Releases/ sec(RELEASES_ PER_SEC)	Rate at which the WINS server received releases (releases/second).	AVG	float	No	2003(x64) , 2008(x64)	--
Successful Queries/ sec(SUCCESSFUL _QUERIES_PER_ SEC)	Rate at which the WINS server successfully received queries (queries/second).	AVG	float	No	2003(x64) , 2008(x64)	--
Successful Releases/ sec(SUCCESSFUL _RELEASES_PER_ SEC)	Rate at which the WINS server successfully received releases (releases/second).	AVG	float	No	2003(x64) , 2008(x64)	--
Total Conflicts/ sec(TOTAL_NUM BER_OF_CONFLI CTS_PER_SEC)	Rate at which the WINS server recognized conflicts (conflicts/second). The value in this field is the total of the values in the Group Conflicts/sec and Unique Conflicts/sec fields.	AVG	float	No	2003(x64) , 2008(x64)	--
Total Registrations/ sec(TOTAL_NUM BER_OF_REGS_P ER_SEC)	Rate at which the WINS server received registrations (registrations/second). The value in this field is the total of the values in the Group Registrations/sec and Unique Registrations/sec fields.	AVG	float	No	2003(x64) , 2008(x64)	--
Total Renewals/ sec(TOTAL_NUM BER_OF_RENEW ALS_PER_SEC)	Rate at which the WINS server received renewals (renewals/second). The value in this field is the total of the values in the Group Renewals/sec and Unique Renewals/sec fields.	AVG	float	No	2003(x64) , 2008(x64)	--

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Unique Conflicts/ sec(UNIQUE_CONFLICTS_PER_SECOND)	Rate at which unique registrations and renewals received by the WINS server conflicted with records inside the database (conflicts/second).	AVG	float	No	2003(x64) , 2008(x64)	--
Unique Registrations/ sec(UNIQUE_REGISTRATIONS_PER_SECOND)	Rate at which the WINS server received unique registrations (registrations/second).	AVG	float	No	2003(x64) , 2008(x64)	--
Unique Renewals/ sec(UNIQUE_RENEWALS_PER_SECOND)	Rate at which the WINS server received unique renewals (renewals/second).	AVG	float	No	2003(x64) , 2008(x64)	--

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## Workgroup Summary (PI\_WGRP)

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### Function

The Workgroup Summary (PI\_WGRP) record stores the performance data that summarizes the records stored in the Process Detail (PD) record, by workgroups at a given point in time.

One record is stored for each workgroup. This is a multi-instance record.

To store all process records that do not belong to any of the defined workgroups, a workgroup named `Other` is automatically created.

*Notes:*

- You must specify workgroup information by using the collection data addition utility. For details about workgroup information and the collection data addition utility, see 3. *User-Defined Record Collection*.
- If the value of the Program (INSTANCE) field is `_Total` and the value of the PID (ID\_PROCESS) field is 0 in the Process Detail (PD) record, its data expresses a total or average, and thus the record is not collected.
- When there are many objects to be collected because, for example, there are many processes on the machine, increased throughput results in a heavier processing load.

### Default values and values that can be specified

Item	Default value	Modifiable
Log	No	Yes
LOGIF	Blank	Yes
Sync Collection With	Detail Records, PD	No

### ODBC key fields

- PI\_WGRP\_WORKGROUP\_NAME
- PI\_WGRP\_CONDITION

### Lifetime

From the time a record is added by the collection data addition utility until the record is deleted.

### Record size

- Fixed portion: 681 bytes

- Variable portion: 608 bytes

## Fields

PFM-View name (PFM-Manager name)	Description	Summary	Format	Delta	Not Support ed versions	Data source
CPU %(PCT_PROCESS OR_TIME)	Percentage of the elapsed processor time used by workgroups (%). In a multi-processor environment, usage is displayed, with number-of-processors x 100% as the maximum value.	%	double	No	--	PD record PCT_PROCES SOR_TIME field
Condition(CONDI TION)	Workgroup collection condition. The following values are available: - AND: Collects process whose Groups, Users, and Programs fields all match the conditions. - OR: Collects process whose Groups, Users, or Programs field matches the conditions.	COPY	string(4)	No	--	--
Groups(GROUPS)	Defined group name. If the group name is longer than 35 bytes, the first 35 bytes are saved and the last character becomes [>].	COPY	string(3 6)	No	--	Group name of the collection data addition utility
Handle Count(HANDLE_ COUNT)	Number of handles kept open by workgroups.	HILO	double	No	--	PD record HANDLE_CO UNT field
IO Data Bytes/ sec(IO_DATA_BY TES_PER_SEC)	Rate at which data was read or written in all I/O operations generated by workgroups (bytes/second).	AVG	double	No	--	PD record IO_DATA_BY TES_PER_SE C field

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
IO Data Operations/ sec(IO_DATA_OPERATIONS_PER_SEC)	Number of read and write operations in all I/O operations generated by workgroups (operations/second).	AVG	double	No	--	PD record IO_DATA_OPERATIONS_PER_SEC field
IO Other Bytes/ sec(IO_OTHER_BYTES_PER_SEC)	Rate at which data was manipulated by operations other than read or write operations (control functions, etc.) in all I/O operations generated by workgroups (bytes/second).	AVG	double	No	--	PD record IO_OTHER_BYTES_PER_SEC field
IO Other Operations/ sec(IO_OTHER_OPERATIONS_PER_SEC)	Number of operations other than read or write operations (control functions, etc.) in all I/O operations generated by workgroups (operations/second).	AVG	double	No	--	PD record IO_OTHER_OPERATIONS_PER_SEC field
IO Read Bytes/ sec(IO_READ_BYTES_PER_SEC)	Rate at which data was read in all I/O operations generated by workgroups (bytes/second).	AVG	double	No	--	PD record IO_READ_BYTES_PER_SEC field
IO Read Operations/ sec(IO_READ_OPERATIONS_PER_SEC)	Number of read operations in all I/O operations generated by workgroups (operations/second).	AVG	double	No	--	PD record IO_READ_OPERATIONS_PER_SEC field
IO Write Bytes/ sec(IO_WRITE_BYTES_PER_SEC)	Rate at which data was written in all I/O operations generated by workgroups (bytes/second).	AVG	double	No	--	PD record IO_WRITE_BYTES_PER_SEC field
IO Write Operations/ sec(IO_WRITE_OPERATIONS_PER_SEC)	Number of write operations in all I/O operations generated by workgroups (operations/second).	AVG	double	No	--	PD record IO_WRITE_OPERATIONS_PER_SEC field

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Interval(INTERVAL)	Collection interval during which the record was stored (seconds). For a real-time report, the first value is 5. If records are summarized into a historical report, the last stored value is displayed.	COPY	ulong	No	--	RECORD_TIME(T1) - RECORD_TIME(T0)
Interval2(INTERVAL2)	Collection interval during which the record was stored (seconds). For a real-time report, the first value is 5. If records are summarized into a historical report, the total of the summarized records is displayed.	ADD	ulong	No	--	RECORD_TIME(T1) - RECORD_TIME(T0)
Page Faults/ sec(PAGE_FAULTS_PER_SEC)	Rate at which page faults occurred inside workgroups (faults/second).	AVG	double	No	--	PD record PAGE_FAULTS_PER_SEC field
Page File Kbytes(PAGE_FILE_BYTES)	Size of the virtual memory area used by workgroups in paging files (KB).	AVG	double	No	--	PD record PAGE_FILE_BYTES field
Pool Nonpaged Kbytes(POOL_NONPAGED_BYTES)	Size of non-pageable memory used by workgroups (KB).	AVG	double	No	--	PD record POOL_NONPAGED_BYTES field
Pool Paged Kbytes(POOL_PAGED_BYTES)	Size of pageable memory used by workgroups (KB).	AVG	double	No	--	PD record POOL_PAGED_BYTES field
Private Kbytes(PRIVATE_BYTES)	Size of the memory that was allocated to a workgroup and could not be shared with other processes (KB).	AVG	double	No	--	PD record PRIVATE_BYTES field

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Summary</b>	<b>Format</b>	<b>Delta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Privileged CPU %(PCT_PRIVILE GED_TIME)	Percentage of the elapsed time the workgroup used the processor in the privileged mode (%). In a multi-processor environment, usage is displayed with number-of-processors x 100% as the maximum value.	%	double	No	--	PD record PCT_PRIVILE GED_TIME field
Process Count(PROCESS_ COUNT)	Number of processes executed by workgroups.	HILO	ulong	No	--	--
Programs(PROGR AMS)	Defined program name. If the group name is longer than 35 bytes, the first 35 bytes are saved and the last character becomes [>].	COPY	string(3 6)	No	--	Program name of the collection data addition utility
Record Time(RECORD_TI ME)	Time at which the record was created.	COPY	time_t	No	--	--
Record Type(INPUT_REC ORD_TYPE)	Record name. Always WGRP.	COPY	char(8)	No	--	--
Thread Count(THREAD_ COUNT)	Number of threads (unit for executing instructions) inside a workgroup. When a workgroup is executed, at least one thread is started.	HILO	double	No	--	PD record THREAD_CO UNT field
User CPU %(PCT_USER_TI ME)	Amount of processor time used by workgroups in the user mode (%). In a multi-processor environment, usage is displayed with number-of-processors x 100% as the maximum value.	%	double	No	--	PD record PCT_USER_T IME field

<b>PFM-View name (PFM-Manager name)</b>	<b>Description</b>	<b>Sum mary</b>	<b>Format</b>	<b>De lta</b>	<b>Not Support ed versions</b>	<b>Data source</b>
Users(USERS)	Defined user name. If the group name is longer than 35 bytes, the first 35 bytes are saved and the last character becomes [>].	COPY	string(36)	No	--	User name of the collection data addition utility
Virtual Kbytes(VIRTUAL_BYTES)	Size of the virtual address space being used by workgroups (KB).	AVG	double	No	--	PD record VIRTUAL_BYTES field
Workgroup(WORKGROUP_NAME)	Defined workgroup name.	COPY	string(36)	No	--	Workgroup name of the collection data addition utility
Working Set Kbytes(WORKING_SET)	Amount of memory used by workgroups (this memory is called a working set, and indicates either the total memory size or the amount of memory that can be referenced without page faults) (KB).	AVG	double	No	--	PD record WORKING_SET field

## Chapter

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# 6. Messages

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This chapter explains the PFM - Agent for Platform message format, message output destinations, Windows event logs, and messages.

- 6.1 Message format
- 6.2 Message output destinations
- 6.3 List of messages output to the Windows event log
- 6.4 Messages

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## 6.1 Message format

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This section shows the format of the messages that are output by PFM - Agent for Platform and how they are described in the manual.

### 6.1.1 Format of output messages

This section explains the format of the messages that are output by PFM - Agent for Platform. A message consists of a message ID followed by message text. The message format follows:

*KAVFnnnnn - Y message-text*

The message ID indicates the following content:

*K*

Indicates the system identifier.

*AVF*

Indicates that this is a PFM - Agent message.

*nnnnn*

Indicates a message serial number. The message number for PFM - Agent for Platform is 11xxx.

*Y*

Indicates a message type.

- *E*: Error  
Processing is halted.
- *w*: Warning  
Processing continues after the message is issued.
- *I*: Information  
Provides information to the user.
- *Q*: Response  
Prompts the user to respond.

The correspondence between the message type and Windows event log type is explained below.

-E

- Level: Error

- Meaning: Error message
- W
- Level: Warning
  - Meaning: Warning message
- I
- Level: Information
  - Meaning: Additional information message
- Q
- (Not output)

### 6.1.2 Format of message explanations

This section explains the message description format in this manual. The italicized portion of the message text means the display content differs depending on the circumstance under which the message is issued. Messages are listed in the order of message ID. An example of the message description format follows.

#### Message ID

Message text

Message explanation

(S)

Indicates the action taken by the system.

(O)

Indicates the action that should be taken by the operator when the message is displayed.

#### *Reference note:*

The system administrator who has been contacted by an operator must collect log information as described in *7. Error Handling Procedures*, and conduct an initial investigation.

When conducting an initial investigation of the problem, refer to the OS' log information (Windows event logs) and the various types of log information that is output by PFM - Agent for Platform. From these types of log information, determine what happened during the time period when the problem occurred and take actions to avoid or correct the problem. Also record the operating method used that led to the problem. At the same time, try to determine whether the problem can be reproduced.

## 6.2 Message output destinations

This section lists the output destinations of the messages that are output by PFM - Agent for Platform.

The following conventions are used in the table:

Legend:

Y: Message is output.

--: No message is output.

*Table 6-1: PFM - Agent for Platform message output destinations*

Message ID	Output destination								
	Windows event log	Common message log	Event Log (PD_E LOG) record field	Standard output	Standard error output	Public log	Debug log	JP1 system event# <sub>1</sub>	Agent event# <sub>2</sub>
KAVF11001	Y	Y	--	--	--	--	--	--	--
KAVF11002	Y	Y	--	--	--	--	--	--	--
KAVF11003	Y	Y	--	--	--	--	--	--	--
KAVF11004	Y	Y	--	--	--	--	--	Y	Y
KAVF11005	--	Y	--	--	--	--	--	--	--
KAVF11006	--	Y	--	--	--	--	--	--	--
KAVF11007	--	Y	--	--	--	--	--	--	--
KAVF11100	--	Y	--	--	--	--	--	--	--
KAVF11101	Y	Y	--	--	--	--	--	--	--

Message ID	Output destination								
	Windows event log	Common message log	Event Log (PD_E LOG) record field	Standard output	Standard error output	Public log	Debug log	JP1 system event# 1	Agent event# 2
KAVF11201	--	Y	--	--	--	--	--	--	--
KAVF11300	--	Y	--	--	--	--	--	Y	Y
KAVF11301	Y	Y	--	--	--	--	--	--	--
KAVF11302	Y	Y	--	--	--	--	--	--	--
KAVF11304	--	Y	--	--	--	--	--	Y	Y
KAVF11307	Y	Y	--	--	--	--	--	--	--
KAVF11308	Y	Y	--	--	--	--	--	--	--
KAVF11310	Y	Y	--	--	--	--	--	--	--
KAVF11311	--	Y	--	--	--	--	--	Y	Y
KAVF11313	Y	Y	--	--	--	--	--	--	--
KAVF11316	--	Y	--	--	--	--	--	--	--
KAVF11317	--	Y	--	--	--	--	--	--	--
KAVF11318	--	Y	--	--	--	--	--	--	--
KAVF11404	--	--	Y#3	--	--	--	--	--	--

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Message ID	Output destination								
	Windows event log	Common message log	Event Log (PD_ELOG) record field	Standard output	Standard error output	Public log	Debug log	JP1 system event# 1	Agent event# 2
KAVF11405	--	--	Y#3	--	--	--	--	--	--
KAVF11406	--	Y	--	--	--	--	--	Y	Y
KAVF11407	--	Y	--	--	--	--	--	--	--
KAVF11500	--	Y	--	--	--	--	--	--	--
KAVF11501	--	Y	--	--	--	--	--	--	--
KAVF11502	--	--	--	--	--	--	--	Y	Y
KAVF11901	--	--	--	--	--	--	Y	--	--
KAVF11902	--	--	--	--	--	--	Y	--	--
KAVF11904	--	--	--	--	--	--	Y	--	--
KAVF11905	--	--	--	--	--	--	Y	--	--
KAVF11906	--	--	--	--	--	--	Y	--	--
KAVF11907	--	--	--	--	--	--	Y	--	--
KAVF11908	--	--	--	--	--	--	Y	--	--
KAVF11909	--	--	--	--	--	--	Y	--	--

Message ID	Output destination								
	Windows event log	Common message log	Event Log (PD_E LOG) record field	Standard output	Standard error output	Public log	Debug log	JP1 system event# 1	Agent event# 2
KAVF11910	--	--	--	--	--	--	Y	--	--
KAVF11911	--	--	--	--	--	--	Y	--	--
KAVF11912	--	--	--	--	--	--	Y	--	--
KAVF11913	--	--	--	--	--	--	Y	--	--
KAVF11914	--	--	--	--	--	--	Y	--	--
KAVF11915	--	--	--	--	--	--	Y	--	--
KAVF11916	--	--	--	--	Y	Y	--	--	--
KAVF11917	--	--	--	--	Y	Y	--	--	--
KAVF11919	--	--	--	--	Y	Y	--	--	--
KAVF11920	--	--	--	--	Y	Y	--	--	--
KAVF11923	--	--	--	--	Y	Y	--	--	--
KAVF11924	--	--	--	--	--	Y	--	--	--
KAVF11925	--	--	--	--	--	Y	--	--	--
KAVF11926	--	--	--	--	--	Y	--	--	--

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Message ID	Output destination								
	Windows event log	Common message log	Event Log (PD_ELOG) record field	Standard output	Standard error output	Public log	Debug log	JP1 system event# 1	Agent event# 2
KAVF11927	--	--	--	--	--	Y	--	--	--
KAVF11928	--	--	--	--	--	Y	--	--	--
KAVF11929	--	--	--	--	--	--	Y	--	--
KAVF11930	--	--	--	--	--	--	Y	--	--
KAVF11931	--	--	--	--	--	--	Y	--	--
KAVF11932	--	--	--	--	--	--	Y	--	--
KAVF11935	--	--	--	--	Y	Y	--	--	--
KAVF11941	--	--	--	--	Y	--	--	--	--
KAVF11943	--	--	--	--	Y	Y	--	--	--
KAVF11948	--	--	--	--	--	Y	--	--	--
KAVF11950	--	--	--	--	--	--	Y	--	--
KAVF11951	--	--	--	--	--	--	Y	--	--
KAVF11952	--	--	--	--	--	Y	--	--	--
KAVF11953	--	--	--	--	--	--	Y	--	--

Message ID	Output destination								
	Windows event log	Common message log	Event Log (PD_E LOG) record field	Standard output	Standard error output	Public log	Debug log	JP1 system event# 1	Agent event# 2
KAVF11954	--	--	--	--	--	Y	--	--	--
KAVF11957	--	--	--	Y	--	--	--	--	--
KAVF11959	--	--	--	--	--	Y	--	--	--
KAVF11983	--	--	--	--	Y	Y	--	--	--
KAVF11984	--	--	--	--	Y	Y	--	--	--
KAVF11985	--	--	--	--	Y	Y	--	--	--
KAVF11986	--	--	--	--	--	--	Y	--	--
KAVF11987	--	--	--	--	--	--	Y	--	--
KAVF11988	--	--	--	--	--	--	Y	--	--
KAVF11989	--	--	--	--	--	--	Y	--	--
KAVF11990	--	--	--	--	--	--	Y	--	--
KAVF11991	--	--	--	--	--	--	Y	--	--
KAVF11992	--	--	--	--	--	--	Y	--	--
KAVF11993	--	--	--	--	--	--	Y	--	--

Message ID	Output destination								
	Windows event log	Common message log	Event Log (PD_EVENT LOG) record field	Standard output	Standard error output	Public log	Debug log	JP1 system event# 1	Agent event# 2
KAVF11994	--	--	--	--	--	--	Y	--	--
KAVF11995	--	--	--	--	--	--	Y	--	--
KAVF11996	--	--	--	--	--	--	Y	--	--
KAVF11997	--	--	--	--	--	--	Y	--	--
KAVF11998	--	--	--	--	Y	--	--	--	--

#1

A JP1 system event notifies JP1/IM of changes in the agent status. For details about the JP1 system events, see the chapter explaining operation monitoring in linkage with the integrated management product (JP1/IM) in the manual *Job Management Partner 1/Performance Management User's Guide*.

The following table lists the prerequisite programs for issuing JP1 system events.

Table 6-2: Prerequisite programs for issuing JP1 system events

Host type	Prerequisite program	Version
Monitoring manager	PFM - Manager	09-00 or later
Monitoring console server	PFM - Web Console	08-00 or later
Monitoring agent	PFM - Agent for Platform	08-00 or later (To issue an event output by PFM - Agent, the version must be 09-00 or later.)
	PFM - Manager or PFM - Base	09-00 or later
	JP1/Base	09-00 or later

#2

An agent event notifies PFM - Manager of changes in the agent status. For details about the agent events, see the chapter explaining event display in the manual *Job Management Partner 1/Performance Management User's Guide*.

The following table lists the prerequisite programs for issuing agent events.

*Table 6-3: Prerequisite programs for issuing agent events*

Host type	Prerequisite program	Version
Monitoring manager	PFM - Manager	09-00 or later
Monitoring console server	PFM - Web Console	08-00 or later
Monitoring agent	PFM - Agent for Platform	09-00 or later
	PFM - Manager or PFM - Base	09-00 or later

#3

This message is output as collected data to the Description (DESCRIPTION) field of the Event Log (PD\_ELOG) record. The message is not output to a log.

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### 6.3 List of messages output to the Windows event log

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This section shows the message information that is output by PFM - Agent for Platform to the Windows event log.

Windows event log is displayed in the application log in the Event Viewer window.

*Reference note:*

To display the Event Viewer window, from the **Start** menu in Windows, choose **Administrative Tools** and then **Event Viewer**.

For an event that is output by PFM - Agent for Platform, the identifier **PFM-Platform** is displayed under **Source** in the Event Viewer window.

The table below shows the message information that is output by PFM - Agent for Platform to the Windows event log.

*Table 6-4:* Windows event log output message information

Message ID	Windows event log	
	Event ID	Type
KAVF11001-I	11001	Information
KAVF11002-E	11002	Error
KAVF11003-I	11003	Information
KAVF11004-E	11004	Error
KAVF11101-E	11101	Error
KAVF11301-E	11301	Error
KAVF11302-E	11302	Error
KAVF11307-E	11307	Error
KAVF11308-E	11308	Error
KAVF11310-E	11310	Error
KAVF11313-E	11313	Error

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## 6.4 Messages

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This section explains the messages that are output by PFM - Agent for Platform and how to handle them. The messages that are output by PFM - Agent for Platform are listed below.

**KAVF11001-I**

Agent Collector has stopped. (host=*host-name*,  
service=*host-name*<Windows>)

The Agent Collector service terminated normally.

(S)

Terminates processing of the Agent Collector service.

**KAVF11002-E**

Agent Collector failed to start.

Startup of the Agent Collector service failed.

(S)

Terminates processing of the Agent Collector service.

(O)

Check the preceding message that was output to the common message log and take the action indicated in it.

**KAVF11003-I**

Agent Collector has started. (host=*host-name*,  
service=*host-name*<Windows>)

Startup of the Agent Collector service was completed.

(S)

Begins collecting performance data on the Agent Collector service.

**KAVF11004-E**

Agent Collector stopped abnormally.

Agent Collector was abnormally stopped.

(S)

Terminates processing of the Agent Collector service.

(O)

Check the preceding message that was output to the event log or common message log and take the action indicated in it.

**KAVF11005-I**

Agent Store has been connected.

The Agent Store service was successfully connected during the startup of the Agent Collector service.

(S)

Continues the startup process of the Agent Collector service.

**KAVF11006-I**

Name Server has been connected.

The Name Server service was successfully connected during the startup of the Agent Collector service.

(S)

Continues the startup process of the Agent Collector service.

**KAVF11007-W**

A user command failed to start. (*record=record-id, en=OS-detail-code*)

An attempt to start a user command has failed.

(S)

Continues subsequent processing.

(O)

Check the execution status of the user command.

**KAVF11100-E**

An error occurred in an OS API (*function-name*). (*rc=error-code, maintenance-information*)

An error occurred in an OS API function. If no maintenance information exists, *maintenance-information* is left blank.

(S)

Terminates processing of the Agent Collector if the error occurred during startup.

(O)

Collect maintenance information and then contact the system administrator. For details about how to collect maintenance information, see the chapter explaining troubleshooting in the manual *Job Management Partner 1/Performance Management User's Guide*.

**KAVF11101-E**

An error occurred in a function (*function-name*). (*rc=error-code, maintenance-information*)

An error occurred in a control function. If no maintenance information exists,

*maintenance-information* is left blank.

(S)

Terminates processing of Agent Collector.

(O)

Collect maintenance information and then contact the system administrator. For details about how to collect maintenance information, see the chapter explaining troubleshooting in the manual *Job Management Partner 1/Performance Management User's Guide*.

**KAVF11201-W**

An illegal collection event occurred. (*record-id*,  
*rc=maintenance-information*)

An unsupported collection event indicated by *record-id* occurred.

- *rc* = 0: Real-time report
- *rc* = 1: Historical report or alarm

(S)

Does not collect the record indicated by *record-id*. Continues processing of Agent Collector.

(O)

An attempt is being made to collect a real-time report of an unsupported record, monitor it using an alarm, or record it in the Store database.

- For a real-time report, stop the collection for the record.
- For monitoring using an alarm, cancel the binding from the alarm that is using the record not supported by the host. For details about how to cancel binding from an alarm, see the chapter explaining operation monitoring using alarms in the manual *Job Management Partner 1/Performance Management User's Guide*.
- For recording in the Store database, stop recording the record not supported by the host in the Store database. For details about how to stop recording in the Store database, see *E.2 Agent Collector service properties*.

**KAVF11300-W**

An attempt to allocate memory for (*record-id*) failed.

Memory allocation failed for the record indicated by *record-id*. If UNKNOWN is output as the record ID, it indicates that memory allocation failed for multiple record IDs.

(S)

Suspends collection of the record indicated by *record-id*, and continues to collect

the next record.

(O)

Close other applications or increase the amount of memory.

If the cause cannot be determined, collect maintenance information and then contact the system administrator. For details about how to collect maintenance information, see the chapter explaining troubleshooting in the manual *Job Management Partner 1/Performance Management User's Guide*.

**KAVF11301-E**

Initialization of Agent Configuration failed.

Loading of the service startup initialization file failed during the startup of the Agent Collector service.

(S)

Terminates processing of the Agent Collector service.

(O)

Check whether the service startup initialization file (`jpcagt.ini`) is located under the *installation-folder\agtt\agent* folder. If it is not there, copy the `jpcagt.ini.model` file to the `jpcagt.ini` file. If the cause cannot be determined, collect maintenance information and then contact the system administrator. For details about how to collect maintenance information, see the chapter explaining troubleshooting in the manual *Job Management Partner 1/Performance Management User's Guide*.

**KAVF11302-E**

TCP/IP initialization failed.

TCP/IP initialization failed during the startup of the Agent Collector service.

(S)

Terminates processing of the Agent Collector service.

(O)

Check to make sure that the network settings are correct.

**KAVF11304-W**

Data could not be collected for a record *record-id*. (*rc=return-code*).

Data for the record indicated by *record-id* could not be collected.

(S)

Continues processing of the Agent Collector service.

(O)

Check whether the service corresponding to *record-id* is installed and whether the service has been started.

Check the content indicated by the return code and determine whether a shortage has occurred in the system resources such as memory.

If the cause cannot be determined, collect maintenance information and then contact the system administrator. For details about how to collect maintenance information, see the chapter explaining troubleshooting in the manual *Job Management Partner 1/Performance Management User's Guide*.

**KAVF11307-E**

The registry key could not be opened. (*registry-key-name*, *rc=error-code*)

The registry key indicated by *registry-key-name* could not be opened.

(S)

Stops the Agent Collector service.

(O)

Check whether the registry can be correctly accessed. If not, check whether there is a shortage in the OS resources or an error has occurred in the overall OS.

**KAVF11308-E**

The value for the open registry key could not be obtained.  
(*registry-key-name*, *rc=error-code*)

The registry key indicated by *registry-key-name* was successfully opened, but a value could not be obtained for the registry.

(S)

Stops the Agent Collector service.

(O)

Check whether the registry can be correctly accessed. If not, check whether there is a shortage in the OS resources or an error has occurred in the overall OS.

**KAVF11310-E**

Information about the open registry key could not be retrieved.  
(*registry-key-name*, *rc=error-code*)

Information could not be obtained from the open registry key.

(S)

Stops the Agent Collector service.

(O)

Check whether there is a shortage in the OS resources or an error has occurred in the overall OS.

**KAVF11311-W**

An attempt to open a file (*file-name*) failed. (*rc=error-code*)

The performance data definition file or performance data definition log file indicated by *file-name* could not be opened.

Because the Agent Collector service that is currently running collects the equivalent information by referencing the Windows registry, there is no problem in the overall operation. However, part of the system may be damaged.

(S)

Continues processing of the Agent Collector service.

(O)

Check whether the specified file exists. If the file does not exist, check whether an error has occurred in the overall OS.

**KAVF11313-E**

Information about the performance registry could not be retrieved.

Information could not be obtained from the performance registry.

(S)

Terminates processing of the Agent Collector service.

(O)

Check whether there is a shortage in the OS resources or an error has occurred in the overall OS.

**KAVF11316-W**

The information to be collected has not been set by the Collection Data Addition utility. (*record-id*)

The information to be collected for the record indicated by *record-ID* has not been set by the collection data addition utility.

(S)

Continues processing of the Agent Collector service. The record indicated by *record-ID* is not collected.

(O)

Use the collection data addition utility to set the information to be collected, and then collect the record.

**KAVF11317-W**

The information to be collected has not been set in Web Console. (*record-id*)

The information to be collected for the record indicated by *record-ID* has not been set in PFM - Web Console.

(S)

Continues processing of the Agent Collector service. The record indicated by *record-ID* is not collected.

(O)

Set the information to be collected in PFM - Web Console, and then collect the record.

**KAVF11318-W**

Invalid entry in *file-name*.

An error was found in the definition file or specification of the user command properties.

(S)

Ignores the definition, and continues startup of the Agent Collector service.

(O)

Correct the definition in the indicated file, and then restart the service. Alternatively, correct the user command properties.

**KAVF11404-W**

The description for Event ID (*event-id*) in Source (*source-name*) cannot be found. The local computer may not have the necessary registry information or message DLL files to display messages from a remote computer. The following information is part of the event: *character-string*.

In Windows Server 2000, the event log message indicated by the source name and event ID could not be obtained.

(S)

Continues Agent Collector processing.

(O)

Check whether the service corresponding to the specified source name has been uninstalled and whether a file with the source name exists.

**KAVF11405-W**

The description for Event ID (*event-id*) in Source (*source-name*) cannot be found. The local computer may not have the necessary registry information or message DLL files to display messages from a remote computer. You may be able to use the /AUXSOURCE= flag to retrieve this description; see Help and Support for

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details. The following information is part of the event:  
*character-string*.

In Windows Server 2003, the event log message indicated by the source name and event ID could not be obtained.

(S)

Continues processing the Agent Collector service.

(O)

Check whether the service corresponding to the specified source name has been uninstalled or a file with the source name exists.

### **KAVF11406-W**

The system resources have been modified. (*record-id*)

The related system resources indicated by *record-id* have been modified.

(S)

Skips the collection of the record indicated by *record-id* twice.

### **KAVF11407-E**

Performance data cannot be collected because the Remote Registry Service (*service-name*:Remote Registry) is not running.  
(*rc=return-code*)

Performance data cannot be collected because the Remote Registry Service is not running.

(S)

Terminates processing of the Agent Collector service.

(O)

Start the service indicated by *service-name* and then restart the Agent Collector service.

### **KAVF11500-W**

It failed to occur JP1 system event or Agent event extension.

An attempt to issue a JP1 system event or Agent event extension has failed.

(S)

Continues processing the Agent Collector service.

(O)

Check the preceding message that was output to the common message log and take the action indicated in it. If the cause cannot be determined, collect maintenance information and then contact the system administrator.

**KAVF11501-W**

It failed to issue JP1 system event or Agent event extension, because Memory is insufficient.

An attempt to issue a JP1 system event or Agent event extension has failed.

(S)

Continues processing the Agent Collector service.

(O)

Check whether system resources such as memory are sufficient. If the cause cannot be determined, collect maintenance information and then contact the system administrator.

**KAVF11502-W**

The event log message indicated by Event ID (*event-id*) in Source (*source-name*) could not be obtained. See Help and Support for details. The following information is part of the event: character-string.

In Windows Server 2003, the event log message indicated by the source name and event ID could not be obtained.

(S)

Continues processing the Agent Collector service.

(O)

Check whether the service corresponding to the specified source name has been uninstalled and whether a file with the source name exists.

**KAVF11901-W**

Warning: The specified value (*specified-value*) for the option (tt) is too long. (filename = *user-created-data-file-path*)

The value specified for the option (tt) is too long.

(S)

The jpcuser command skips the current line and continues processing.

(O)

Shorten the specified value.

**KAVF11902-W**

Warning: The specified value (*specified-value*) for the option (ks) is too long. (filename = *user-created-data-file-path*)

The value specified for the option (ks) is too long.

(S)

The jpcuser command skips the current line and continues processing.

(O)

Shorten the specified value.

**KAVF11904-W**

Warning: The data value count (*number-of-specified-values*) does not match the option count (*number-of-options*). (filename = *user-created-data-file-path*)

The number of specified values differs from the number of specified options.

(S)

The jpcuser command skips the current line and continues processing.

(O)

Specify the same number of values and options.

**KAVF11905-W**

Warning: The data line is too long. (filename = *user-created-data-file-path*)

The data line is too long.

(S)

The jpcuser command skips the current line and continues processing.

(O)

Shorten the data line.

**KAVF11906-W**

Warning: The specified value for the option must be 0 or a positive number. (*option-name* = *specified-value*, filename = *user-created-data-file-path*)

A value smaller than 0 was specified for the option indicated by *option-name*.

(S)

The jpcuser command sets 0 and continues processing.

(O)

Specify 0 or a greater value.

**KAVF11907-W**

Warning: The specified value for the option is too long. (*option-name* = *specified-value*, filename = *user-created-data-file-path*)

The value specified for the option indicated by *option-name* is too long.

(S)

The `jpcuser` command sets a blank line and continues processing.

(O)

Shorten the specified value.

**KAVF11908-W**

Warning: The specified value (*specified-value*) for the option (`t`) is invalid. (filename = *user-created-data-file-path*)

The value specified for the option (`t`) is invalid.

(S)

The `jpcuser` command sets n/a and continues processing.

(O)

Correct the specified value.

**KAVF11909-W**

Warning: The specified value for the option must be a numeric value. (*option-name* = *specified-value*, filename = *user-created-data-file-path*)

A value that is not a numeric value was specified for the option indicated by *option-name*.

(S)

The `jpcuser` command sets 0 and continues processing.

(O)

Specify a numeric value.

**KAVF11910-W**

Warning: The specified value for a floating-point number option is invalid. (*option-name* = *specified-value*, filename = *user-created-data-file-path*)

The value specified for the floating-point option indicated by *option-name* is invalid.

(S)

The `jpcuser` command sets 0 and continues processing.

(O)

Correct the specified value.

**KAVF11911-W**

Warning: An overflow or an underflow occurred for the value specified for the option. (*option-name* = *specified-value*, filename = *user-created-data-file-path*)

An overflow or an underflow occurred due to the value specified for the option

indicated by *option-name*.

(S)

The jpcuser command continues processing.

(O)

Correct the specified value.

**KAVF11912-W**

Warning: "" is specified for the option (*option-name*). (filename = *user-created-data-file-path*)

No value is specified for the option indicated by *option-name*.

(S)

The jpcuser command sets 0 for and continues processing.

(O)

Specify a value.

**KAVF11913-W**

Warning: The specified value (*specified-value*) for the option(*ki*) must be 0 or a positive number. (filename = *user-created-data-file-path*)

A value smaller than 0 was specified for the option (*ki*).

(S)

The jpcuser command skips the current line and continues processing.

(O)

Specify 0 or a larger value.

**KAVF11914-W**

Warning: An overflow or an underflow occurred for the value (*specified-value*) specified for the option (*ki*). (filename = *user-created-data-file-path*)

An overflow or an underflow occurred due to the value specified for the option (*ki*).

(S)

The jpcuser command skips the current line and continues processing.

(O)

Correct the specified value.

**KAVF11915-W**

Warning: "" is specified for the option (*tt*). (filename = *user-created-data-file-path*)

No value is specified for the option (tt).

(S)

The `jpcuser` command skips the current line and continues processing.

(O)

Specify a value.

**KAVF11916-E**

Error: The specified value (*specified-value*) for record-ID is invalid.

The value (*specified-value*) specified for the record ID is invalid.

(S)

Terminates processing of the `jpcuser` command.

(O)

Correct the specified value.

**KAVF11917-E**

Error: An invalid number of arguments was specified.

An invalid number of arguments was specified.

(S)

Terminates processing of the `jpcuser` command.

(O)

Correct the number of specified values.

**KAVF11919-E**

Error: An invalid arguments (*specified-value*) were specified.

An invalid argument was specified.

(S)

Terminates processing of the `jpcuser` command.

(O)

Correct the specified value.

**KAVF11920-E**

Error: The user-defined data file option (`-file`) is not specified.

The user-created data file option (`-file`) is not specified.

(S)

Terminates processing of the `jpcuser` command.

(O)

Specify the user-created data file option (`-file`).

**KAVF11923-E**

Error: The user-defined data file cannot be opened. (filename = *file-name*)

The user-created data file cannot be accessed.

(S)

Terminates processing of the `jpcuser` command.

(O)

Check whether the specified file name is correct and whether the file specified by *file-name* exists and is accessible. If the cause cannot be determined, collect maintenance information and then contact the system administrator.

**KAVF11924-E**

Error: There is no product information section in the user-defined data file.

There is no product information section in the user-created data file.

(S)

Terminates processing of the `jpcuser` command.

(O)

Specify a product information section.

**KAVF11925-E**

Error: The product information section of the user-defined data file is invalid. Product Name=*product-name*, FormVer=*format-version*

The product information section in the user-created data file is invalid.

(S)

Terminates processing of the `jpcuser` command.

(O)

Correct the product information section.

**KAVF11926-E**

Error: The user-defined data file does not contain an option header line.

The user-created data file does not contain an option header line.

(S)

Terminates processing of the `jpcuser` command.

(O)

Specify an option header line.

**KAVF11927-E**

Error: The user-defined data file does not contain any data lines.

The user-created data file does not contain any data lines.

(S)

Terminates processing of the `jpcuser` command.

(O)

Specify a data line.

**KAVF11928-E**

Error: The option header line is too long.

The option header line is too long.

(S)

Terminates processing of the `jpcuser` command.

(O)

Shorten the option header line.

**KAVF11929-E**

Error: Too many options (*specified-value*) were specified.

Too many options were specified.

(S)

Terminates processing of the `jpcuser` command.

(O)

Correct the specification of options.

**KAVF11930-E**

Error: An invalid option (*option-name*) was specified.

An invalid option was specified for the option indicated by *option-name*.

(S)

Terminates processing of the `jpcuser` command.

(O)

Correct the option.

**KAVF11931-E**

Error: The option (*option-name*) is not supported for the specified record (*record-id*).

The specified option is not supported for the specified record ID.

(S)

Terminates processing of the `jpcuser` command.

(O)

Correct the record ID or option.

**KAVF11932-E**

Error: The option (`tt`) is not specified.

The option (`tt`) is not specified.

(S)

Terminates processing of the `jpcuser` command.

(O)

Specify the option (`tt`).

**KAVF11935-E**

Error: A fatal error has occurred.

A fatal error has occurred.

(S)

Terminates processing of the `jpcuser` command.

(O)

Collect maintenance information and then contact the system administrator.

**KAVF11941-E**

Error: Administrator permissions are required.

A user who is not a member of the Administrators group attempted to execute the `jpcuser` command.

(S)

Terminates processing of the `jpcuser` command.

(O)

Execute the `jpcuser` command as a user who is a member of the Administrators group.

**KAVF11943-E**

Error: `jpcuser` terminated with error.

The `jpcuser` command terminated abnormally.

(S)

Terminates processing of the `jpcuser` command.

(O)

Check the preceding message that was output to the public log, and take the action indicated in it.

**KAVF11948-I**

Information: `jpcuser` terminated successfully.

The `jpcuser` command terminated normally.

(S)

Terminates processing of the `jpcuser` command.

**KAVF11950-W**

Warning: "" is specified for the option (`ki`). (`filename = user-created-data-file-path`)

"" is specified for the option (`ki`).

(S)

The `jpcuser` command skips the current line and continues processing.

(O)

Specify a valid value for the option (`ki`).

**KAVF11951-W**

Warning: "" is specified for the option (`ks`). (`filename = user-created-data-file-path`)

"" is specified for the option (`ks`).

(S)

The `jpcuser` command skips the current line and continues processing.

(O)

Specify a valid value for the option (`ks`).

**KAVF11952-E**

Error: The option header line specified in the user-defined data file is incorrect. (`specified-value`)

The option header line specified in the user-created data file is incorrect.

(S)

Terminates processing of the `jpcuser` command.

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(O)

Correct the option header line.

### **KAVF11953-W**

Warning: The data line specified in the user-defined data file is incorrect. (*specified-value*, filename = *user-created-data-file-path*)

The data line specified in the user-created data file is incorrect.

(S)

The `jpcuser` command skips the current line and continues processing.

(O)

Correct the data line.

### **KAVF11954-W**

Warning: `jpcuser` terminated with a warning.

The `jpcuser` command terminated with a warning.

(S)

Terminates processing of the `jpcuser` command.

(O)

Correct the problem generating the warning indicated in the preceding message.

### **KAVF11957-I**

Information: Usage: `jpcuser` <Record Name> -file <User-defined Data File Path> [-file <User-defined Data File Path>]... [-debug <value>]

This message explains how to use the `jpcuser` command.

(S)

Terminates processing of the `jpcuser` command.

### **KAVF11959-E**

Error: An attempt to allocate memory failed.

An attempt to allocate memory has failed.

(S)

Terminates processing of the `jpcuser` command.

(O)

Terminate other applications or increase memory. If the cause cannot be determined, collect maintenance information and then contact the system administrator.

**KAVF11983-E**

Error: The name of a user-defined data file is duplicated.  
(filename = *file-name*)

The name of the user-created data file duplicates the name of another file.

(S)

Terminates processing of the `jpcuser` command.

(O)

Correct the duplication of user-created data files.

**KAVF11984-E**

Error: The debug option is duplicated.

The debug option has been specified twice.

(S)

Terminates processing of the `jpcuser` command.

(O)

Either do not specify the debug option, or specify it only once.

**KAVF11985-E**

Error: There are no user-defined data files.

There are no user-created data files.

(S)

Terminates processing of the `jpcuser` command.

(O)

Check whether the specified file name is correct and whether the file specified by *file-name* exists and is accessible. If the cause cannot be determined, collect maintenance information and then contact the system administrator.

**KAVF11986-W**

Warning: The option header line specified in the user-defined data file is incorrect. (option = *specified-value*, filename = *user-created-data-file-path*)

The option header line specified in the user-created data file is incorrect.

(S)

Skips this user-created data file.

(O)

Correct the option header line.

**KAVF11987-W**

Warning: The user-defined data file cannot be opened. (filename = *file-name*)

The user-created data file cannot be accessed.

(S)

Skips this user-created data file.

(O)

Check whether the specified file name is correct and whether the file specified by *file-name* exists and is accessible. If the cause cannot be determined, collect maintenance information and then contact the system administrator.

**KAVF11988-W**

Warning: There is no product information section in the user-defined data file. (filename = *user-created-data-file-path*)

There is no product information section in the user-created data file.

(S)

Skips this user-created data file.

(O)

Specify a product information section.

**KAVF11989-W**

Warning: The product information section of the user-defined data file is invalid. Product Name = *product-name*, FormVer = *format-version*, filename = *user-created-data-file-path*

The product information section in the user-created data file is invalid.

(S)

Skips this user-created data file.

(O)

Correct the product information section.

**KAVF11990-W**

Warning: The user-defined data file does not contain an option header line. (filename = *user-created-data-file-path*)

The user-created data file does not contain an option header line.

(S)

Skips this user-created data file.

(O)

Specify an option header line.

**KAVF11991-W**

Warning: The user-defined data file does not contain any data lines. (filename = *user-created-data-file-path*)

The user-created data file does not contain any data lines.

(S)

Skips this user-created data file.

(O)

Specify a data line.

**KAVF11992-W**

Warning: The option header line is too long. (filename = *user-created-data-file-path*)

The option header line is too long.

(S)

Skips this user-created data file.

(O)

Shorten the option header line.

**KAVF11993-W**

Warning: Too many options (*specified-value*) were specified. (filename = *user-created-data-file-path*)

Too many options were specified.

(S)

Skips this user-created data file.

(O)

Correct the specification.

**KAVF11994-W**

Warning: An invalid option (*option-name*) was specified. (filename = *user-created-data-file-path*)

An invalid value was specified for the option indicated by *option-name*.

(S)

Skips this user-created data file.

(O)

Correct the option.

**KAVF11995-W**

Warning: The option (*option-name*) is not supported for the specified record (*record-id*). (filename = *user-created-data-file-path*)

The specified option is not supported for the specified record ID.

(S)

Skips this user-created data file.

(O)

Correct the record ID or option.

**KAVF11996-W**

Warning: The option (*tt*) is not specified. (filename = *user-created-data-file-path*)

The option (*tt*) is not specified.

(S)

Skips this user-created data file.

(O)

Specify the option (*tt*).

**KAVF11997-W**

Warning: The user-defined data file was skipped. (filename = *user-created-data-file-path*)

The user-created data file was skipped.

(S)

Skips the file and continues `jpcuser` command processing.

(O)

Check the message that was output immediately before this message and correct the error.

**KAVF11998-E**

Error: You do not have permission to execute the command.

You do not have permission to execute the `jpcuser` command.

(S)

Stops execution of the `jpcuser` command.

(O)

To execute the command, from the Windows **Start** menu, choose **Programs**, **Performance Management**, and then **Administrator console**. Alternatively, execute the command from the command prompt opened with **Run as**

**administrator** selected.



## Chapter

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# 7. Error Handling Procedures

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This chapter explains how to handle the errors that occur during the operation of Performance Management. It describes how to handle the errors that occur mainly in PFM - Agent. For details about how to handle errors that occur in the overall Performance Management system, see the chapter explaining troubleshooting in the manual *Job Management Partner 1/Performance Management User's Guide*.

- 7.1 Error handling procedures
- 7.2 Troubleshooting
- 7.3 Log information
- 7.4 Data to be collected if a problem occurs
- 7.5 Data collection procedure
- 7.6 Detecting problems within Performance Management
- 7.7 Performance Management system error recovery

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## 7.1 Error handling procedures

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This section explains how to handle the errors that occur in Performance Management.

### Checking the operating conditions

Check the following details:

- Operating conditions when the error occurred
- Message content (if a message has been issued)
- Log information in the common message log, for example

For details about the cause of each message and how to handle it, see *6. Messages*. For details about the log information that is output by Performance Management, see *7.3 Log information*.

### Collecting data

You must collect data to identify the error cause. See *7.4 Data to be collected if a problem occurs* and *7.5 Data collection procedure*, and collect the necessary data.

### Investigating the error

Based on the collected data, investigate the error cause and isolate the area in which the error occurred or determine the scope of the error.

## 7.2 Troubleshooting

This section explains troubleshooting for Performance Management. If an error occurs while you are using Performance Management, first check whether any of the phenomena explained in this section has occurred.

The table below shows the major errors that may occur in Performance Management.

*Table 7-1: Error description*

Category	Error description	Description location
Setting up or starting a service	<ul style="list-style-type: none"> <li>The Performance Management program service does not start.</li> <li>It takes a long time between a service startup request and the actual service startup.</li> <li>When another program begins a service immediately after a Performance Management program service has been stopped, communication cannot be correctly executed.</li> <li>After the message <code>The disk capacity is insufficient .</code> is issued, the Master Store service or Agent Store service stops.</li> </ul>	7.2.1
Executing commands	<ul style="list-style-type: none"> <li>When the <code>jpctool service list (jpcctrl list)</code> command is executed, a non-active service name is output.</li> <li>When the <code>jpctool db dump (jpcctrl dump)</code> command is executed, data that is different from the specified Store database is output.</li> </ul>	7.2.2
Report definitions	<ul style="list-style-type: none"> <li>Information for some period of time is not displayed in historical reports.</li> </ul>	7.2.3
Alarm definitions	<ul style="list-style-type: none"> <li>The program defined in action execution does not run correctly.</li> <li>No alarm event is displayed.</li> </ul>	7.2.4
Collecting and managing performance data	<ul style="list-style-type: none"> <li>Even though the data retention period is set to be short, the size of PFM - Agent's Store database does not decrease.</li> <li>The message <code>Illegal data was detected in the Store database .</code> is output to the common message log.</li> </ul>	7.2.5

Category	Error description	Description location
Hang-up and abnormal termination	<ul style="list-style-type: none"> <li>• Even though the PFM Agent for Windows service is running, performance information is not collected.</li> <li>• The PFM Agent for Windows service terminates abnormally.</li> <li>• When the PFM Agent for Windows service stops, the KAVE05034-E error message is output.</li> </ul>	7.2.6

## 7.2.1 Setting up or starting a service

This section explains how to handle errors related to setup and service startup.

### (1) Performance Management program service does not start

The possible causes and how to handle them are described below.

- PFM - Manager is stopped

When PFM - Manager and PFM - Agent are on the same host, if PFM - Manager is stopped, the PFM - Agent service cannot start. Make sure the PFM - Manager service is running. If the PFM - Manager service is not running, start it. For details about how to start a service, see the chapter explaining how to start and stop Performance Management in the manual *Job Management Partner 1/ Performance Management User's Guide*.

- The same port number is specified for multiple services of a Performance Management program

If the same port number is specified for multiple services of a Performance Management program, the service of the Performance Management program cannot start. By default, port numbers are automatically assigned, and thus no duplication occurs. If you specified a fixed port number for the service of a Performance Management program when setting up Performance Management, check the port number settings. If the same port number is specified for multiple services of a Performance Management program, specify different port numbers. For details about how to specify port numbers, see the chapter explaining installation and setup in the manual *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

- The folder specified for storing the Store database is invalid

If any of the folders listed below is specified in an inaccessible or nonexistent folder, the Agent Store service cannot start. Check the folder name and attributes and correct them if necessary.

- Store database storage destination folder

- Store database backup folder
- Store database partial backup folder
- Store database export destination folder
- Store database import destination folder

If any of these folders is specified for multiple Agent Store services, the Agent Store services cannot start. Check the folder settings and correct them if necessary.

- The machine's host name was modified using a method other than the specified method

For details about how to change a machine's host name, see the chapter explaining installation and setup in the manual *Job Management Partner 1/Performance Management Planning and Configuration Guide*. If the machine's host name is modified using a method other than the specified method, the service of a Performance Management program may not start in some cases.

- An error occurred in the service control manager

When the `jpcspm start (jpcstart)` command is executed in Windows, the message `An error occurred in the Windows service control manager.` may be displayed and the service startup may fail. If this condition occurs, re-execute the `jpcspm start (jpcstart)` command. If the same condition occurs frequently, change the retry interval and the number of retries to be used for service startup during the execution of the `jpcspm start (jpcstart)` command by editing the `jpccomm.ini` file. For details about how to change the retry interval and the number of retries, see the chapter explaining how to start and stop Performance Management in the manual *Job Management Partner 1/Performance Management User's Guide*.

## **(2) It takes a long time between a service startup request and the actual service startup**

It may take a long time after the `jpcspm start (jpcstart)` command is executed or a service is started using the **Service** icon before the service actually starts. If the startup takes a long time because of any of the causes listed below, the time it takes for the service startup is shortened during subsequent service startup operations.

- If you start a service in stand-alone mode, service startup may take a long time.
- If a service is started by restarting the system without specifying that the service be automatically stopped when the system is stopped, the Store database index may be rebuilt. In this case, service startup may take a long time.
- When the service is started after a new agent is added, the Store database index is created only during the initial startup. As a result, service startup may take a long time.

- If the Store service cannot be terminated normally because of a power failure, for example, the Store database index is rebuilt during a restart, and as a result, service startup may take a long time.

**(3) When another program begins a service immediately after a Performance Management program service has been stopped, communication cannot be correctly executed**

Immediately after a Performance Management program service has been stopped, if the port number that was used by this service is used by another program to start a service, communication may not be correctly executed. To avoid this condition, specify one of the following:

- Specify fixed port numbers for assignment to the services of the Performance Management program.

Assign fixed port numbers for the individual services of the Performance Management program. For details about how to specify port numbers, see the chapter explaining installation and setup in the manual *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

- Specify the TCP\_TIMEWAIT value

Set the connection wait time to the default in the TCP\_TIMEWAIT value. Use the following default value:

- In Windows Server 2003 and Windows Server 2008: 2 minutes

**(4) After the message "The disk capacity is insufficient." is issued, the Master Store service or Agent Store service stops**

If the disk used by the Store database does not have sufficient free space, storing of data in the Store database is halted. In this case, the message `The disk capacity is insufficient.` is issued and the Master Store service or Agent Store service stops.

When this message is issued, take one of the following steps:

- Allocate sufficient disk capacity

Estimate the disk space requirement for the Store database, and change the Store database storage destination to a disk that has sufficient capacity. For details about how to estimate the disk space requirement for the Store database, see *A. Estimating System Requirements*. For details about how to change the Store database storage destination, see *2.4 Changing the operation of PFM - Agent for Platform*.

- Change the saving conditions for the Store database

Change the saving conditions for the Store database and adjust the upper limit for the data volume in the Store database. For details about how to change the saving conditions for the Store database, see the chapter explaining management of

operation monitoring data in the manual *Job Management Partner 1/Performance Management User's Guide*.

If the Master Store service or Agent Store service still does not start even after one of these steps has been taken, an unrecoverable logical conflict has occurred in the Store database. In this case, first restore the Store database from backup data and then start the Master Store service or Agent Store service. If there is no available backup data, first initialize the Store database and then start the Master Store service or Agent Store service. To initialize the Store database, delete all of the following files, which are located in the Store database destination directory:

- Files with the extension `.DB`
- Files with the extension `.IDX`

For details about the Store database destination directory, see the chapter explaining installation and setup in the manual *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

## 7.2.2 Executing commands

This section explains the errors that are related to the execution of Performance Management commands.

### **(1) When the `jpctool service list (jpcctrl list)` command is executed, a non-active service name is output**

The possible causes and how to handle them are described below.

- A Performance Management program was uninstalled without deleting the service information of the Performance Management program

Even after a Performance Management program is uninstalled, the service information on the Performance Management program still remains in the database. Execute the `jpctool service delete (jpcctrl delete)` command to delete the service information on the Performance Management program. For details about how to delete service information, see the chapter explaining how to install and set up Performance Management in the manual *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

- The host name of the machine was changed without deleting the service information of the Performance Management program

If the host name of the machine is changed without deleting the service information of the Performance Management program, the service information of the service ID to which the previous host name is added remains in the database managed by the Master Manager service. Execute the `jpctool service delete (jpcctrl delete)` command to delete the service information of the Performance Management program. For details about how to delete service

information and how to change a host name, see the chapter explaining how to install and set up Performance Management in the manual *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

**(2) When the `jpctool db dump (jpcctrl dump)` command is executed, data that is different from the specified Store database is output**

If you specify the same export file name for the same Store service and execute the `jpctool db dump (jpcctrl dump)` command multiple times, the earlier output result is overwritten by the later output result. When executing the `jpctool db dump (jpcctrl dump)` command multiple times on the same Store service, specify export files having different names. For details about how to export the Store database, see the chapter explaining management of operation monitoring data in the manual *Job Management Partner 1/Performance Management User's Guide*.

### 7.2.3 Report definitions

This section explains the cause of a problem related to Performance Management report definitions.

**(1) Information for some period of time is not displayed in historical reports**

If the current time of the machine on which PFM - Agent has been installed is moved forward, history information between the original time and the new current time is not saved.

### 7.2.4 Alarm definitions

This section explains how to handle the errors related to Performance Management alarm definitions.

**(1) The program defined in action execution does not run correctly**

The possible causes and how to handle them are described below.

- PFM - Manager or the Action Handler service of the action execution destination host is not active

If PFM - Manager or the Action Handler service of the action execution destination host is stopped, actions cannot be executed. To execute an action, you must first start PFM - Manager or the Action Handler service of the action execution destination host.

**(2) No alarm event is displayed**

The possible causes and how to handle them are described below.

- PFM - Manager is not active

If PFM - Manager is stopped, alarm events from PFM - Agent cannot be correctly issued. To monitor alarm events, you must first start PFM - Manager.

## 7.2.5 Collecting and managing performance data

This section explains how to handle the errors related to the collection and management of Performance Management performance data.

### **(1) Even though the data retention period is set to be short, the size of PFM - Agent's Store database does not decrease**

In Store version 1.0, if the Store database file volume has already reached its limit, shortening the data retention period does not reduce the file size. In this case, after specifying a short retention period, back up the Store database, and then restore it.

For details about how to specify a data retention period, see the chapter explaining management of operation monitoring data in the manual *Job Management Partner 1/Performance Management User's Guide*. For details about how to back up and restore the Store database, see the chapter explaining backup and restore in the manual *Job Management Partner 1/Performance Management User's Guide*.

### **(2) The message "Illegal data was detected in the Store database." is output to the common message log**

Unexpected service stoppage or machine shutdown may have produced illegal data in the Store database. Take one of the following steps:

- If the Store database has been backed up, restore it.
- If the Store database has not been backed up, stop the Agent Store service and delete the corresponding database file (\*.DB files and \*.IDX files), and then restart the service.

## 7.2.6 Hang-up and abnormal termination

If any of the following occurs when Performance Management is in use, a problem caused by the extended counter DLL might have occurred.

- Even though the PFM Agent for Windows service is running, performance information is not collected.
- The PFM Agent for Windows service terminates abnormally.
- When the PFM Agent for Windows service stops, a KAVE05034-E error message is output.

In this case, see the following information in the Microsoft Knowledge Base provided:

- Performance monitor that hangs during startup or when a counter is added
- Troubleshooting for performance monitor counter problem

## 7.2.7 Other problems

Check the condition that was present when the error occurred. If a message has been issued, check its content. For details about the log information that is output by

Performance Management, see *7.3 Log information*.

If you cannot eliminate the error even after taking the steps described in *7.2.1 Setting up or starting a service* through *7.2.5 Collecting and managing performance data*, or if other errors occur, collect data for error cause investigation and contact the system administrator.

For details about the data that need to be collected and how to collect it, see *7.4 Data to be collected if a problem occurs* and *7.5 Data collection procedure*.

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## 7.3 Log information

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When an error occurs in Performance Management, check the log information to determine how to handle the error. When Performance Management is being used, the following four types of log information are output:

- System log
- Common message log
- Operation status log
- Trace log

These four types of log information and the log options that can be set in each type of log information are explained below.

### 7.3.1 Log types

#### (1) System log

The system log is used to report system statuses and errors. This log is output to the event log file.

For the output format, see the chapter explaining log information in the manual *Job Management Partner 1/Performance Management Reference*.

#### (2) Common message log

The common message log is used to report system statuses and errors. The log information that is output to the common message log is more detailed than the log information that is output to the system log. For details about the output destination file name for the common message log and file size, see 7.3.2 *Log files and folders*. For the output format, see the chapter explaining log information in the manual *Job Management Partner 1/Performance Management Reference*.

#### (3) Operation status log

The operation status log is output by PFM - Web Console. For details about the output destination file name for the operation status log and file size, see the chapter explaining troubleshooting in the manual *Job Management Partner 1/Performance Management User's Guide*. For the output format, see the chapter explaining log information in the manual *Job Management Partner 1/Performance Management Reference*.

#### (4) Trace log

The trace log is collected to investigate the process leading up to the error and to measure the time that was used for each process.

The trace log is output to the log file that each service of a Performance Management program has.

### 7.3.2 Log files and folders

This section explains the log information that is output by Performance Management. For details about the operation status log output destination file name and file size, see the chapter explaining troubleshooting in the manual *Job Management Partner 1/ Performance Management User's Guide*.

#### (1) Common message log

This section describes the common message log, which is one of the logs that are output by Performance Management. The table below shows the service name or control name, which is the output source for the common message log, log file names, and disk usage.

Table 7-2: Common message log file names (in Windows)

Log type	Output source	File name	Disk usage <sup>#1</sup> (KB)
Common message log	Performance Management	<i>installation-folder</i> \log\jpclog{01 02} <sup>#2</sup>	2,048 (x 2)
		<i>installation-folder</i> \log\jpclogw{01 02} <sup>#2</sup>	2,048 (x 2)

#1

The number inside the parentheses ( ) indicate the number of log files that are created for each service. For example, 2,048 (x 2) means that a maximum of two log files, each with a disk usage of 2,048 KB, are created. In this case, the total disk usage is 4,096 KB.

#2

The log file name of the common message log ends with 01 or 02.

Sequential file (jpclog) method

Log information is output first to a log file whose name ends with 01. When the size of this log file reaches its upper limit, the end of the log file name is changed from 01 to 02, and a new log file whose name ends with 01 is created. From this point on, log information is output to the log file whose name ends with 01. If a log file whose name ends with 02 already exists, it is overwritten. The latest log is always output to the log file whose name ends with 01.

Wrap-around file (jpclogw) method

Log information is output first to a log file whose name ends with 01. When the size of this log file reaches its upper limit, a new log file whose name ends with 02 is created. From this point on, log information is output to the log file whose name ends with 02. If a log file whose name ends with 02 already exists, all of its data is deleted first, and then log information is output beginning at the first line in this log file. Thereafter, the log output files are alternated.

For details about log file output methods, see the chapter explaining error detection in Performance Management in the manual *Job Management Partner 1/Performance Management User's Guide*.

## (2) Trace log

This section describes the trace log, which is one of the logs that are output by Performance Management. The table below shows the service name or control name, which is the output source for the trace log of PFM - Agent, and storage destination folder name.

Table 7-3: Trace log storage destination folder name (in Windows)

Log type	Output source	Folder name
Trace log	Performance Management command	<i>installation-folder</i> \tools\log\
	Agent Collector service	<i>installation-folder</i> \agtt\agent\log\
	Agent Store service	<i>installation-folder</i> \agtt\store\log\

## 7.4 Data to be collected if a problem occurs

If you cannot eliminate the error even when you have taken the steps described in 7.2 *Troubleshooting*, you must collect data to identify the error cause and contact the system administrator. This section explains the data that must be collected when an error occurs.

Performance Management provides a command for collecting the necessary data in a batch. To collect PFM - Agent data, use the `jpcras` command. Data that can be collected using the `jpcras` command is indicated by a symbol in the table.

*Note:*

Data that can be collected using the `jpcras` command differs depending on the operations specified during command execution. For details about the options that can be specified for the command, see the chapter explaining commands in the manual *Job Management Partner 1/Performance Management Reference*.

### 7.4.1 In Windows

#### (1) OS log information

You need to collect the OS-related log information indicated in the following table.

Table 7-4: OS-related log information

Type of information	Description	Default file name	Collection by jpcras command possible
System log	Windows event log	--	Y
Process information	Process list	--	Y
System file	hosts file	<i>system-folder</i> \system32\drivers\etc\hosts	Y
	services file	<i>system-folder</i> \system32\drivers\etc\services	Y
OS information	System information	--	Y
	Network status	--	Y
	Host name	--	Y

Type of information	Description	Default file name	Collection by jpcras command possible
Dump information	Dr. Watson log file <sup>#1</sup>	<i>system-drive</i> \Documents and Settings\All Users\Application Data\Microsoft\Dr Watson\drwtsn32.log <sup>#2</sup> <i>system-drive</i> \Documents and Settings\All Users\Application Data\Microsoft\Dr Watson\user.dump <sup>#2</sup>	Y

Legend:

Y: Can be collected

--: Not applicable

#1

In Windows Server 2008, **Dr. Watson** has been replaced by **Problem Reports and Solutions**.

#2

If log files are set to be output to another folder, collect data from that folder.

## (2) Performance Management information

You need to collect the types of information related to Performance Management that are described below. If the error occurred in network connection, you also need to collect information from the connection destination machine. The following table describes the information related to Performance Management.

Table 7-5: Performance Management information

Information type	Description	Default file name or registry	Collection by jpcras command possible
Common message log	Message log output by Performance Management (sequential file method)	<i>installation-folder</i> \log\jpclog{01 02} <sup>#1</sup>	Y

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Information type	Description	Default file name or registry	Collection by jpcras command possible
	Message log output by Performance Management (wrap-around method)	<i>installation-folder</i> \log\jpclogw{01 02}#1	Y
Configuration information	Information file for each configuration	--	Y
	Output results of the jpc tool service list (jpcctrl list) command	--	Y
Version information	Product version	--	Y
	History information	--	Y
Database information	Agent Store	<ul style="list-style-type: none"> <li>• For Store 1.0 <i>installation-folder</i>\agtt\store\*.DB <i>installation-folder</i>\agtt\store\*.IDX</li> <li>• For Store 2.0 <i>installation-folder</i>\agtt\store\STPD The following files under the <i>installation-folder</i>\agtt\store\STPI folder: *.DB *.IDX</li> </ul>	Y
Trace log	Trace information on each service of a Performance Management program	--#2	Y
Information about the function for collecting user-specific performance data	Configuration information	<i>installation-folder</i> \agtt\agent\jpcuser\jpcuser.ini	Y

Information type	Description	Default file name or registry	Collection by jpcras command possible
	Debug log	<i>installation-folder</i> \agtt\agent\jpcuser\debug\jpcuser_dbg_{01 02 03 04 05}.log	Y
	Trace log	<i>installation-folder</i> \agtt\agent\jpcuser\log\trace\msglog{01 02}	Y
	Public log	<i>installation-folder</i> \agtt\agent\jpcuser\log\public\jpclog{01 02}	Y
	User data file	<i>installation-folder</i> \agtt\agent\jpcuser\userdata\jpcuser_{UPI UPIB UPD UPDB}	Y
Log unique to the Agent Collector service	Performance information	<i>installation-folder</i> \agtt\agent\map.log	Y
	WMI error information	<i>installation-folder</i> \agtt\agent\agttterr.log	Y
Definition file	Performance counter definition file (English)	The following files under the <i>system-folder</i> \system32 folder: perfc009.dat perfh009.dat	Y
	Application definition file	<i>installation-folder</i> \agtt\agent\jpcapp	Y
Registry information	Service-related information (including the performance definition information)	"HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services"	Y
	Performance definition information (default)	"HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Perflib"	Y
	PFM - Agent for Platform settings	"HKEY_LOCAL_MACHINE\SOFTWARE\HITACHI\JP1PCAGTT"	Y

Information type	Description	Default file name or registry	Collection by jpcras command possible
	PFM - Agent for Platform configuration information (WOW64)	"HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\HITACHI\JP1PCAGTT"	Y
Installation log <sup>#3</sup>	Installation message log (In Windows Server 2003)	%TEMP%\pfm_inst.log	N
	Installation message log (In Windows Server 2008)	The following files under the <i>system-folder</i> \TEMP\HCDINST folder: <ul style="list-style-type: none"> <li>• HCDMAIN.LOG and HCDMAIN<i>n</i>.LOG<sup>#4</sup></li> <li>• HCDINST.LOG and HCDINST<i>n</i>.LOG<sup>#4</sup></li> <li>• <i>product-model-name</i>.LOG</li> </ul>	N

## Legend:

Y: Can be collected

N: Cannot be collected

--: Not applicable

#1

For details about log file output methods, see the chapter explaining error detection in Performance Management in the manual *Job Management Partner 1/Performance Management User's Guide*.

#2

For details about the trace log storage destination folder, see 7.3.2 *Log files and folders*.

#3

Collect this log if installation fails.

#4

*n* indicates a number.

**(3) Operation details**

You need the following types of information on the operation that was taking place when the error occurred:

- Operation details
- Time at which the error occurred
- Machine configuration (including each OS version, host name, and the configurations of PFM - Manager and PFM - Agent)
- Whether the error can be reproduced
- Performance Management user name used for logon if the user logged on from PFM - Web Console

**(4) Error information on the window**

Collect hard copies of the following items:

- Hard copy of the window operation if an application error occurred
- Hard copy of the error message dialog box (including the content of the detailed buttons if they were present)
- Hard copy of the Command Prompt window or Administrator Console window if a problem occurred during command execution

**(5) User dump (in Windows Server 2008)**

In Windows Server 2008, if a Performance Management process stops due to an application error, obtain a user dump.

**(6) Collecting problem reports (in Windows Server 2008)**

In Windows Server 2008, if a Performance Management process stops due to an application error, obtain a problem report.

**(7) Information related to performance data**

You need to collect the types of information related to performance data described below. If the error occurred in network connection, you also need to collect the files on the machine, command results, and registry information. The following table describes the unique information related to performance data collected by PFM - Agent for Platform in an environment in which PFM - Agent for Platform is installed.

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Information type	Overview	File name, Windows command name, and registry definition location	Can be collected using the jpcras command?
Performance definition information	Counter definition file	<i>system-folder</i> \system32\perfc009.dat	Y
		<i>system-folder</i> \system32\perfh009.dat	Y
	Counter definition location (registry)	HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Perflib	Y
		HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services	Y
	Counter information during Agent Collector service startup	<i>installation-folder</i> \agtt\agent\map.log	Y
OS information (Windows command name <sup>#1</sup> )	Host name	hostname	Y
	Version	ver	Y
	Cluster	cluster	Y
	Device	mode	Y
	Disk counter	diskperf	Y
		Disk volume	mountvol
	vol		Y
	Virtual drive	subst	Y
	TCP/IP	ipconfig	Y
	IPX	ipxroute config	Y
	Network status	nbtstat	Y
	Network name	net name	Y
	Client	net view	Y
	Service	net start	Y
	Server service	net config server	Y
	Workstation service	net config workstation	Y
Session	net session	Y	

Information type	Overview	File name, Windows command name, and registry definition location	Can be collected using the jpcras command?
	Shared resource	net share	Y
		net use	Y
	User account	net user	Y
		net accounts	Y
	Local group	net localgroup	Y

Legend:

Y: Can be collected

#1

For details about commands, see **Help** in Windows.

### **(8) Other information**

The following types of information are also necessary:

- Contents of **System** and **Application** in the Windows Event Viewer window (in Windows Server 2003 and Windows Server 2008)
- Content of **System Information** under **System Tools** under **Accessories** (in Windows Server 2003 and Windows Server 2008)
- The argument specified for the command if the error occurred during command execution

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## 7.5 Data collection procedure

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This section explains how to collect data when an error occurs.

### 7.5.1 In Windows

#### (1) *Collecting dump information (in Windows Server 2008)*

To collect dump information in a Windows Server 2008 environment:

1. Open Task Manager.
2. Select the process tab.
3. Right-click the process name for which you want to collect dump information, and then select **Create Dump File**.

Dump files are stored in the following folder:

*system-drive*\Users\*user-name*\AppData\Local\Temp

4. Obtain the dump file from the folder created in step 3.

If you have changed the environment variable settings so that dump files are output to a different folder, obtain the dump file from that folder.

#### (2) *Executing the data collection command*

To collect data for investigating the cause of the error, you use the `jpcras` command. The procedure for executing the data collection command is described below. Note that the operations explained here must be executed by a user who has the Administrators permission as an OS user.

To collect data:

1. Log onto the host on which the service whose data is to be collected is installed.
2. At the command prompt, execute the following command and enable the command extended function of the command interpreter.

```
cmd /E:ON
```

3. Specify the data to be collected and the folder for storing it, and execute the `jpcras` command.

In the example shown below, all information that can be collected using the `jpcras` command is stored in the folder `c:\tmp\jpc\agt`.

```
jpcras c:\tmp\jpc\agt all all
```

When the `jpcras` command is executed, the `jpctool service list -id * -host * (jpcctrl list * host=*)` command is executed internally to obtain a list of PFM services and to confirm whether the services are running. Execution of this internal

command might take a long time if a firewall exists between the host that executes the command and a host in another Performance Management system or if the system configuration is large. In either case, you can set the `JPC_COLCTRLNOHOST` environment variable to 1 to suppress processing of the `jpctool service list -id * -host * (jpcctrl list * host=*)` command to shorten the command execution time.

For details about the `jpccras` command, see the chapter explaining commands in the manual *Job Management Partner 1/Performance Management Reference*.

Note on executing the command in a Windows Server 2008 environment

If the user account control functionality (UAC) is enabled in the operating system, the User Account Control dialog box might be displayed during command execution. If it is displayed, click the **Continue** button to continue data collection, or click the **Cancel** button to cancel data collection.

### **(3) Obtaining the Windows event log**

In the Event Viewer window, output the Windows event log to a file.

### **(4) Checking the operation details**

Check the operation that was taking place when the error occurred and record it. You need to check the following information:

- Operation details
- Time at which the error occurred
- Machine configuration (including each OS version, host name, and the configurations of PFM - Manager and PFM - Agent)
- Whether the error can be reproduced
- Performance Management user name used for logon if the user logged on from PFM - Web Console

### **(5) Collecting the error information on the window**

Collect hard copies of the following items:

- Hard copy of the window operation if an application error occurred
- Hard copy of the error message dialog box

If detailed information is available, also copy its content.

- Hard copy of the Command Prompt window or Administrator Console window if a problem occurred during command execution

To obtain a hard copy of the Command Prompt window or Administrator Console window in Windows Server 2003 or Windows Server 2008, specify the following in the Command Prompt Properties window:

- **Edit Options** under the **Options** tab  
Select **Quick Edit Mode**.
- **Layout** tab  
Set **Height** under **Screen Buffer Size** to 500.

**(6) Collecting other information**

Information to be collected for all operating systems

- If the error occurred during command execution, the argument specified for the command
- Contents of the dialog box displayed by choosing **Accessories, System Tools**, and then **System Information**

In Windows Server 2003

- Contents of **System** and **Application** in the Windows Event Viewer window

In Windows Server 2008

- Contents of **System** and **Application** under **Windows Logs** in the left pane of the Windows Event Viewer window

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## 7.6 Detecting problems within Performance Management

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You can use the health check function to detect problems within Performance Management itself. This function monitors the operating status of the monitoring agent and the host on which the monitoring agent is running, and displays the monitoring results in PFM - Web Console as changes in the status of the monitoring agent.

You can also use the PFM service Auto-restart functionality that automatically restarts the PFM service when it abnormally terminates for some reason or restart it on a regular basis.

To use the health check function to monitor the operating status of the monitoring agent or use the PFM service Auto-restart functionality, you need to use the status management function. This function checks the detailed status of the Performance Management service. Therefore, the version of the target monitoring agent must support the status management function and the status management function must be enabled. There are no requirements when you monitor the operating status of the host.

Using JP1/Base, which is an integrated system monitoring and management product, to monitor Performance Management log files can also detect problems within Performance Management itself. This allows the system administrator to quickly detect an error if a problem occurs, determine the cause of the error, and take an appropriate recovery measure.

For details about detecting problems within Performance Management itself, see the chapter explaining error detection in Performance Management in the manual *Job Management Partner 1/Performance Management User's Guide*.

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## **7.7 Performance Management system error recovery**

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When an error occurs on a Performance Management server, you need to restore the server to the normal state that was present before the error occurred, based on a backup file.

For details about how to restore a server to its pre-error state, see the chapter explaining troubleshooting in the manual *Job Management Partner 1/Performance Management User's Guide*.

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# Appendixes

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- A. Estimating System Requirements
- B. List of Identifiers
- C. List of Processes
- D. List of Port Numbers
- E. Properties of PFM - Agent for Platform
- F. List of Files and Folders
- G. Migration Procedure and Notes on Migration
- H. Version Compatibility
- I. Outputting Action Log Data
- J. Version Changes
- K. Glossary

## A. Estimating System Requirements

Before you build a system that uses PFM - Agent for Platform, Hitachi recommends that you estimate the system requirements to determine whether the performance of the machine to be used is sufficient to operate PFM - Agent for Platform.

The items to be estimated are described below.

### A.1 Estimating memory requirements

Memory requirements change according to the settings and usage of PFM - Agent for Platform.

#### (1) Formula for estimating memory

The table below provides guidelines for estimating the memory requirements of PFM - Agent for Platform.

*Table A-1: Memory requirements*

State of PFM - Agent for Platform	Memory requirements (units: MB)
Operation in the initial state	45
Other operating states	$(14,000 + (6,000 + 3 \times a + 3,000 + 640 \times b + 640 \times c))/1,024$

Legend:

*a*: Number of active processes in all Performance Management programs (two)

*b*: Number of real-time reports displayed in PFM - Web Console

*c*: Number of records to be collected regularly whose performance data collection condition is set to Log=Y

*Note*:

Because the volume of performance information that can be collected by the Agent Collector service varies depending on the OS environment, the memory requirements may differ significantly from those listed in the table.

#### (2) Example of estimating memory requirements

The following shows an example of estimating the memory requirements when the OS is Windows Server 2003.

In this example, the variables in Table A-1 have the following values:

*a* = 2

*b* = 5 reports

*c* = 3 records

The required memory is computed as follows:

$$\begin{aligned}
 & (14,000 + (6,000 + 3 \times 2 + 3,000 + 640 \times 5 + 640 \times 3)) / 1,024 \text{ (MB)} \\
 &= (14,000 + (6,000 + 6 + 3,000 + 3,200 + 1,920)) / 1,024 \\
 &= (14,000 + (14,126)) / 1,024 \\
 &= 28,126 / 1,024 \\
 &= \text{Approximately } 27 \text{ (MB)}
 \end{aligned}$$

## A.2 Estimating disk space requirements

Disk space requirements vary according to the number of records for which performance data is collected.

This section explains how to estimate the disk space requirements of PFM - Agent for Platform.

### (1) Disk space requirements of the entire system

Table A-2: Disk space requirements of the entire system

State of PFM - Agent for Platform	Disk space requirements (units: MB)
During installation	20
Operation in the initial state	100
Other operating states	50 + <i>W</i>

Legend:

*W*: Disk space requirements of the Store database

Note:

When installing a patch, you must estimate disk space requirements separately for each patch (the maximum size being the same as that during installation).

The disk space requirements of the Store database are computed by adding together the disk space requirements for PI- and PD-type records.

For the formula for estimating the disk space requirements by record type, see below.

### (2) Disk space requirements of the Store database (Store 1.0)

The following explains the disk space requirements of the Store database (Store 1.0).

#### (a) Formula for estimating disk space requirements

In the Store database, records of the same type are stored in the same file. The table below shows the disk space requirements of the Store database (Store 1.0) by record type.

Table A-3: Disk space requirements of the Store database by record type

Record type	Disk space requirements estimation formula (units: bytes)
PI record type	$(X_1 + \dots + X_a + 3,500 \times a)$
PD record type	$(Y_1 + \dots + Y_b + 700 \times b)$

Legend:

$X$ : Disk space requirements of each record for which historical data is collected as PI-type records

$X$  is computed as follows:

$$X = \{e \times f + (d + 1,900) \times \{(e \times f)/(65,250 - d) + 1\}^{\#1}\} \times g \times 1.5$$

$Y$ : Disk space requirements of each record for which historical data is collected as PD-type records

$Y$  is computed as follows:

$$Y = \{e \times h + (d + 1,900) \times \{(e \times f)/(65,250 - d) + 1\}^{\#1} \times (h/f)^{\#2}\} \times 1.5$$

$a$ : Number of records for which historical data is collected as PI-type records

$b$ : Number of records for which historical data is collected as PD-type records

$d$ : Size of the fixed portion of each record for which historical data is collected<sup>#3</sup>

$e$ : Size of the variable portion of each record for which historical data is collected<sup>#3</sup>

$f$ : Number of instances in the record for which historical data is collected (1 for a single-instance record)<sup>#6</sup>

$g$ : Number of saved records for which historical data is collected (the number of instances is not considered)<sup>#4</sup>

$h$ : Upper limit in the number of saved records for which historical data is collected<sup>#5</sup>

#1

Truncate the computation result of  $\{(e \times f)/(65,250 - d) + 1\}$  at the decimal point.

#2

Truncate the computation result of  $(h/f)$  at the decimal point.

#3

For details about the fixed and variable portions of each record, see *Summarization rules* for each record in *5. Records*.

#4

For **PI**-type records, the collected data is automatically summarized according to certain units (hour, day, week, month, and year). Therefore, when estimating the number of records saved, you must take into account the numbers of records saved for hour, day, week, month, and year. The table below shows the default retention period and the default number of records saved.

*Table A-4:* Default retention period and the default number of records saved

Data type	Retention period	Number of records saved (when the collection interval is 1 minute)
Minute by minute	1 day	1,440
Hourly	7 days	168
Daily	1 year	366
Weekly	1 year	52
Monthly	1 year	12
Yearly	No limit	<i>(number-of-years-collected) x 1</i>

#5

For details about the number of records saved, see *E.1 Agent Store service properties*.

#6

You can estimate the number of instances for the records listed below as the number of instances of the performance objects that correspond to records, by using one of the Windows administration tools, **System Monitor** or **Performance Logs and Alerts**, in the Performance console.

*Table A-5:* Number of instances of performance objects that correspond to records

Record ID	Performance objects that correspond to records	Remarks
PD	Process	Number of instances
PD_PAGEF	Paging File	Number of instances
PD_PDI	Process	Number of instances

A. Estimating System Requirements

Record ID	Performance objects that correspond to records	Remarks
PD_PEND	Process	Number of instances that end during the collection interval
PI	_total instances of Redirector, Server, Cache, Memory, Objects, System, and Processor	1 because this is a single-instance record
PI_AD	lsass instances of NTDS, DNS, and Database	1 because this is a single-instance record
PI_BRSR	Browser	1 because this is a single-instance record
PI_ICM6	ICMPv6	1 because this is a single-instance record
PI_ICMP	ICMP	1 because this is a single-instance record
PI_IP	IP or IPv4	1 because this is a single-instance record
PI_IP6	IP or IPv6	1 because this is a single-instance record
PI_LOGD	LogicalDisk	Number of instances
PI_NBT	NBT Connection	Number of instances
PI_NETI	Network Interface	Number of instances
PI_PCSR	Processor	Number of instances
PI_PHYD	PhysicalDisk	Number of instances
PI_SVRQ	Server Work Queues	Number of instances
PI_TCP	TCP or TCPv4	1 because this is a single-instance record
PI_TCP6	TCP or TCPv6	1 because this is a single-instance record
PI_UDP	UDP or UDPv4	1 because this is a single-instance record
PI_UDP6	UDP or UDPv6	1 because this is a single-instance record
PI_WINS	WINS Server	1 because this is a single-instance record

The number of instances for the records listed below can be estimated from the number of specified user records by using a Windows tool, the collection data addition utility, or the function for collecting user-created data.

*Table A-6:* Number of instances that can be checked by using a Windows tool, the collection data addition utility, or Windows tool, the function for collecting user-created data

Record ID	Checked with	Remarks
PD_APP	<b>Administration Tools - Services</b>	Number of items that are set
PD_DEV	<b>System Tools - System Information - Software Environment - Drivers</b>	Number of drivers registered
PD_ELOG	<b>Administration Tools - Event Viewer</b>	Number of logs output during the collection interval
PD_GEND	<b>Collection data addition utility</b>	Number of user records that are set
PD_SVC	<b>Administration Tools - Services</b>	Number of services registered
PD_UPD	Function for collecting user-created data	Number of items that are set
PD_UPDB	Function for collecting user-created data	Number of items that are set
PI_GENI	<b>Collection data addition utility</b>	Number of user records that are set
PI_UPI	Function for collecting user-created data	Number of items that are set
PI_UPIB	Function for collecting user-created data	Number of items that are set
PI_WGRP	<b>Collection data addition utility</b>	Number of user records that are set

### (b) Examples of estimating disk space requirements

#### Example 1:

This example estimates the disk space requirements of the PI-type Processor Overview (PI\_PCSR) records when PI-type records other than PI\_PCSR are not specified to be saved. The variables  $a$  to  $g$  in Table A-3 have the following values:

$$a = 1$$

$$d = 681$$

$$e = 532$$

$$f = 2$$

$$g = 2,039$$

How to obtain the value of  $f$

See the number of instances of performance objects that correspond to records in Table A-5. In this example, the value of  $f$  is 2.

How to obtain the value of  $g$

For PI\_LOGD, when the collection interval is one minute, the yearly collection period is 1 year, and the retention period is set as shown in #4 of

Table A-3,  $g$  is computed as follows:

$$1,440 + 168 + 366 + 52 + 12 + 1 = 2,039 \text{ records}$$

$$g = 2,039$$

Formula for computing  $X$ :

$$X = \{e \times f + (d + 1,900) \times \{e \times f / (65,250 - d) + 1\}\} \times g \times 1.5$$

$$X = \{532 \times 2 + (681 + 1,900) \times \{532 \times 2 / (65,250 - 681) + 1\}\} \times 2,039 \times 1.5$$

$$= \{1,064 + (2,581) \times \{1,064 / 64,569 + 1\}\} \times 3,058.5$$

$$= \{1,064 + 2,581 \times 1\} \times 3,058.5$$

$$= 3,645 \times 3,058.5$$

$$= 11,148,232 \text{ (bytes)}$$

$$= \text{Approximately } 10.6 \text{ (MB)}$$

Example 2:

This example estimates the disk space requirements of the PD-type Process Detail (PD) records when the OS is Windows and PD-type records other than PD are not specified to be saved. The variables in Table A-3 have the following values:

$$b = 1$$

$$d = 681$$

$$e = 472$$

$$f = 3$$

$$h = 2,232$$

How to obtain the value of  $f$

See the number of instances of performance objects that correspond to records in Table A-5. In this example, the value of  $f$  is 3.

How to obtain the value of  $h$

The default number of records saved for the retention period is 10,000.

When you want to set the collection interval to 3,600 seconds and retain data for one month, the value of  $h$  is obtained as follows:

$$h = 24 \text{ records (for one day)} \times 31 \text{ (one month)} \times 3 \text{ (value of } f) = 2,232 \text{ records}$$

$$h = 2,232 \text{ records}$$

Formula for computing  $Y$ :

$$Y = \{e \times h + (d + 1,900) \times \{(e \times f) / (65,250 - d) + 1\} \times (h/f)\} \times 1.5$$

$$Y = \{472 \times 2,232 + (681 + 1,900) \times \{(472 \times 3) / (65,250 - 681) + 1\} \times (2,232/3)\} \times 1.5$$

$$= \{472 \times 2,232 + 2,581 \times \{1,416 / 64,569 + 1\} \times 744\} \times 1.5$$

$$= \{1,053,504 + 2,581 \times 1 \times 744\} \times 1.5$$

$$= \{1,053,504 + 1,920,264\} \times 1.5$$

$$= 2,973,768 \times 1.5$$

= 4,460,652 (bytes)  
 = Approximately 4 (MB)

### (3) **Disk space requirements of the Store database (Store 2.0)**

The following explains the disk space requirements of the Store database (Store 2.0).

#### (a) **Formulas for estimating disk space requirements, number of files, and number of directories**

The following explains how to estimate the disk space requirements, the number of files, and the number of directories.

##### ■ **Disk space requirements**

The disk space requirements of the Store database are the sum of the disk space requirements for each disk type. For the  $\text{PI}$  record type, the disk space requirements are also the sum of the disk space requirements for each summarization category.

*Note:*

When performance data is stored in the Store database, several fields are added. Because the added fields are included in the disk space requirements, there is no need to make a new estimate. The fields added to all records are the same as the fields in Store 1.0. For details, see (2) *Disk space requirements of the Store database (Store 1.0)*.

Formula for estimating disk space requirement  $X$  by record type (units: bytes)

$$X = \{ (e + 2) \times f + (d + 60) \times \{ ((e + 2) \times f) / (65,250 - d) + 1 \}^{\#1} \} \times a/b \times (c + 1) \times 1.1$$

$a$ : This value varies depending on the record type and the summarization category. See Table A-7.

$b$ : This value varies depending on the record type and the summarization category. See Table A-7<sup>#2</sup>

$c$ : Historical-data retention period setting<sup>#3</sup>. The unit to be specified varies depending on the record type and the summarization category. For details about the units, see Table A-7.

$d$ : Size of the fixed portion of each record for which historical data is collected<sup>#4</sup>

$e$ : Size of the variable portion of each record for which historical data is collected<sup>#4</sup>

$f$ : Number of instances in the record for which historical data is collected (1 for a single-instance record)<sup>#5</sup>. When the number of instances is 2 or greater, the number is rounded to the nearest multiple of 4. For example, if the number of instances is 2, the value of  $f$  is 4. If the number of instances is 13, the value of  $f$  is

16. If the number of instances is 1, the value of  $f$  is 1.

Table A-7: Values set in a, b, and c

Record type	Summarization category	$a$	$b$	$c$
PI	Minute	1,440	$1 + (g - 1)/60^{\#2}$	Retention period (units: day)
	Hour	24	$1 + (g - 1)/3,600^{\#2}$	Retention period (units: day)
	Day	7	$1 + (g - 1)/86,400^{\#2}$	Retention period (units: week)
	Week	1	$1 + (g - 1)/604,800^{\#2}$	Retention period (units: week)
	Month	1	$1 + (g - 1)/2,592,000^{\#2}$	Retention period (units: month)
	Year	1	$1 + (g - 1)/31,622,400^{\#2}$	Retention period (units: year)
PD	--	1,440	$g/60$	Retention period (units: day)
PL	--	1,440	$g/60$	Retention period (units: day)

Legend:

$g$ : Setting of the historical data collection interval (units: second)

--: Not applicable

#1

Truncate the computation result of  $\{((e + 2) \times f)/(65,250 - d) + 1\}$  at the decimal point.

#2

For PI-type records, truncate the computation result of  $b$  at the decimal point.

#3

Tables A-8 and A-9 show the default retention periods for Store 2.0.

#4

For details about the size of the fixed portion and variable portion of each record, see the description about record size in 5. *Records*.

#5

For details about the number of instances for each record, see (2) *Disk space requirements of the Store database (Store 1.0)*

*Table A-8: Default retention period for the PI record type*

Data type	Retention period
By the minute	1 day
Hourly	7 days
Daily	54 weeks
Weekly	54 weeks
Monthly	12 months
Yearly	No limit

*Table A-9: Default retention period for the PD record type*

Record name	Retention period (units: day)
PD	2
PD_PDI	2
PD_PEND	2
PD_PAGF	2
PD_SVC	2
PD_GEND	10
PD_DEV	2
PD_ELOG	31
PD_UPD	10
PD_UPDB	10
PD_APP	10

#### ■ Number of files

The following shows the formula for estimating the number of files  $N$  that are created in the Store database:

$$N = 20 + 2 \times ($$

$$\begin{aligned}
 & (A11 + A12 + \dots + A1m + m) + \\
 & (A21 + A22 + \dots + A2m + m) + \\
 & (A31 + A32 + \dots + A3m + m) + \\
 & (A41 + A42 + \dots + A4m + m) + \\
 & (A51 + A52 + \dots + A5m + m) + \\
 & (11 \times m) + \\
 & (B1 + B2 + \dots + Bn + n) + \\
 & (C1 + C2 + \dots + Co + o) \\
 & )
 \end{aligned}$$

*m*: Number of records collected as PI-type records

*n*: Number of records collected as PD-type records

*o*: Number of records collected as PL-type records

*A11* to *A1m*: Minute-by-minute record retention period setting for each PI-type record (units: day)

*A21* to *A2m*: Hourly record retention period setting for each PI-type record (units: day)

*A31* to *A3m*: Daily record retention period setting for each PI-type record (units: week)

*A41* to *A4m*: Weekly record retention period setting for each PI-type record (units: week)

*A51* to *A5m*: Monthly record retention period setting for each PI-type record (units: month)

*B1* to *Bn*: Retention period setting for each PD-type record (units: day)

*C1* to *Co*: Retention period setting for each PL-type record (units: day)

#### ■ Number of directories

The following shows the formula for estimating the number of directories *N* that are created in the Store database.

$$N = 25 + 2 \times ((A1max) + (A2max) + (A3max) + (A4max) + (A5max) + 11 + (Bmax) + (Cmax))$$

*A1max*: Maximum retention period setting for the data of the records which are collected as PI-type records and whose summarization category is Minute (units: day)

*A2max*: Maximum retention period setting for the data of the records which are collected as PI-type records and whose summarization category is Hour (units: day)

*A3max*: Maximum retention period setting for the data of the records which are collected as PI-type records and whose summarization category is Day (units: week)

*A4max*: Maximum retention period setting for the data of the records which are collected as PI-type records and whose summarization category is Week (units: week)

*A5max*: Maximum retention period setting for the data of the records which are collected as PI-type records and whose summarization category is Month (units: month)

*Bmax*: Maximum retention period setting for each PD-type record (units: day)

*Cmax*: Maximum retention period setting for each PL-type record (units: day)

#### ■ Number of files that the Store service opens

The following shows the formula for estimating the number of files  $N$  that the Store service opens:

$$N = 20 + 2 \times (6 \times l + m + n)$$

$l$ : Number of records collected as PI-type records

$m$ : Number of records collected as PD-type records

$n$ : Number of records collected as PL-type records

#### (b) Examples of estimating disk space requirements

The following provides an example of estimating the disk space requirements of the Store database (Store 2.0) of PFM - Agent for Platform.

#### ■ Disk space requirements

This example shows how to estimate the disk space requirements when collection of the PI\_LOGD and PD records is specified.

The following explains how to estimate the disk space requirements of the PI\_LOGD record. The variables shown in the formula in (a) *Formula for estimating disk space requirements, number of files, and number of directories* have the following values:

$$d = 681 \text{ (bytes)}$$

$$e = 700 \text{ (bytes)}$$

$$f = 4$$

$$g = 60 \text{ (seconds)}$$

The following shows how to calculate the disk space requirements by record type, such as a record collected by the minute or hourly.

Minute-by-minute record

The variables have the following values:

$$a = 1,440$$

$$b = 1 + (60-1)/60$$

$$= 1.98\dots$$

$$= 1 \text{ (Digits after the decimal point are truncated.)}$$

$$c = 3 \text{ (days)}$$

The formula is as follows:

## A. Estimating System Requirements

$$\begin{aligned} X \text{ (minute)} &= \{(700 + 2) \times 4 + (681 + 60) \times \{((700 + 2) \times 4) / \\ &\quad (65,250 - 681) + 1\}\} \times 1,440/1 \times (3 + 1) \times 1.1 \\ &= \{2,808 + 741 \times 1\} \times 6,336 \\ &= 3,549 \times 6,336 \\ &= 22,486,464 \text{ (bytes)} = \text{Approximately } 22 \text{ (MB)} \end{aligned}$$

### Hourly record

The variables have the following values:

$$a = 24$$

$$b = 1 + (60-1)/3,600$$

$$= 1.01\dots$$

= 1 (Digits after the decimal point are truncated.)

$$c = 3 \text{ (day)}$$

The formula is as follows:

$$\begin{aligned} X \text{ (hour)} &= \{(700 + 2) \times 4 + (681 + 60) \times \{((700 + 2) \times 4) / \\ &\quad (65,250-681) + 1\}\} \times 24/1 \times (3 + 1) \times 1.1 \\ &= \{2,808 + 741 \times 1\} \times 105.6 \\ &= 3,549 \times 105.6 \\ &= 374,774.4 \text{ (bytes)} = \text{Approximately } 0.4 \text{ (MB)} \end{aligned}$$

### Daily record

The variables have the following values:

$$a = 7$$

$$b = 1 + (60-1)/86,400$$

$$= 1.00\dots$$

= 1 (Digits after the decimal point are truncated.)

$$c = 1 \text{ (week)}$$

The formula is as follows:

$$\begin{aligned} X \text{ (day)} &= \{(700 + 2) \times 4 + (681 + 60) \times \{((700 + 2) \times 4) / \\ &\quad (65,250-681) + 1\}\} \times 7/1 \times (1 + 1) \times 1.1 \\ &= \{2,808 + 741 \times 1\} \times 15.4 \\ &= 3,549 \times 15.4 \\ &= 54,654.6 \text{ (bytes)} = \text{Approximately } 0.05 \text{ (MB)} \end{aligned}$$

### Weekly record

The variables have the following values:

$$a = 1$$

$$b = 1 + (60-1)/604,800$$

$$= 1.00\dots$$

= 1 (Digits after the decimal point are truncated.)

$$c = 1 \text{ (week)}$$

The formula is as follows:

$$\begin{aligned}
 X \text{ (week)} &= \{(700 + 2) \times 4 + (681 + 60) \times \{((700 + 2) \times 4) / \\
 &\quad (65,250 - 681) + 1\}\} \times 1/1 \times (1 + 1) \times 1.1 \\
 &= \{2,808 + 741 \times 1\} \times 2.2 \\
 &= 3,549 \times 2.2 \\
 &= 7,807.8 \text{ (bytes)} = \text{Approximately } 0.008 \text{ (MB)}
 \end{aligned}$$

#### Monthly record

The variables have the following values:

$$\begin{aligned}
 a &= 1 \\
 b &= 1 + (60 - 1) / 2,592,000 \\
 &= 1.00\dots \\
 &= 1 \text{ (Digits after the decimal point are truncated.)} \\
 c &= 1 \text{ (month)}
 \end{aligned}$$

The formula is as follows:

$$\begin{aligned}
 X \text{ (month)} &= \{(700 + 2) \times 4 + (681 + 60) \times \{((700 + 2) \times 4) / \\
 &\quad (65,250 - 681) + 1\}\} \times 1/1 \times (1 + 1) \times 1.1 \\
 &= \{2,808 + 741 \times 1\} \times 2.2 \\
 &= 3,549 \times 2.2 \\
 &= 7,807.8 \text{ (bytes)} = \text{Approximately } 0.008 \text{ (MB)}
 \end{aligned}$$

#### Yearly record

The variables have the following values:

$$\begin{aligned}
 a &= 1 \\
 b &= 1 + (60 - 1) / 31,622,400 \\
 &= 1.00\dots \\
 &= 1 \text{ (Digits after the decimal point are truncated.)} \\
 c &= 10 \text{ (fixed)}
 \end{aligned}$$

The formula is as follows:

$$\begin{aligned}
 X \text{ (year)} &= \{(700 + 2) \times 4 + (681 + 60) \times \{((700 + 2) \times 4) / \\
 &\quad (65,250 - 681) + 1\}\} \times 1/1 \times (10 + 1) \times 1.1 \\
 &= \{2,808 + 741 \times 1\} \times 12.1 \\
 &= 3,549 \times 12.1 \\
 &= 42,942.9 \text{ (bytes)} = \text{Approximately } 0.04 \text{ (MB)}
 \end{aligned}$$

From the above calculations, the disk space requirements of the PI\_LOGD record are obtained as follows:

$$\begin{aligned}
 X \text{ (total)} &= X \text{ (minute)} + X \text{ (hour)} + X \text{ (day)} + X \text{ (week)} + X \\
 &\quad \text{(month)} + X \text{ (year)} \\
 &= 22.506 \text{ (MB)} \\
 &= \text{Approximately } 23 \text{ (MB)}
 \end{aligned}$$

The following explains how to estimate the disk space requirements of the PD record.

The variables have the following values:

## A. Estimating System Requirements

$$\begin{aligned}
 a &= 1,400 \\
 b &= 60/60 = 1 \\
 c &= 10 \text{ (day)} \\
 d &= 681 \text{ (bytes)} \\
 e &= 472 \text{ (bytes)} \\
 f &= 12 \\
 g &= 60 \text{ (seconds)}
 \end{aligned}$$

The formula is as follows:

$$\begin{aligned}
 X &= \{ (472 + 2) \times 12 + (681 + 60) \times \{ ((472 + 2) \times 12) / (65,250 - 681) + 1 \} \times 1,400/1 \times (10 + 1) \times 1.1 \\
 &= \{ 5,688 + 741 \times 1 \} \times 17,424 \\
 &= 6,429 \times 17,424 \\
 &= 112,018,896 \text{ (bytes)} = \text{Approximately } 112 \text{ (MB)}
 \end{aligned}$$

The disk space requirements are therefore  $PI\_LOGD + PD = 135 \text{ MB}$ .

### ■ Number of files

This example shows how to estimate the number of files when the  $PI$ ,  $PI\_LOGD$ ,  $PD$ , and  $PD\_PDI$  records are to be collected. The variables shown in the formula in (a) *Formula for estimating disk space requirements, number of files, and number of directories* have the following values:

$$\begin{aligned}
 m &= 2 \\
 n &= 2 \\
 o &= \text{None} \\
 A11 \text{ to } A1m &= 3 \text{ (days)} \\
 A21 \text{ to } A2m &= 3 \text{ (days)} \\
 A31 \text{ to } A3m &= 1 \text{ (weeks)} \\
 A41 \text{ to } A4m &= 1 \text{ (weeks)} \\
 A51 \text{ to } A5m &= 1 \text{ (months)} \\
 B1 \text{ to } Bn &= 10 \text{ (days)} \\
 C1 \text{ to } Co &= \text{Not required}
 \end{aligned}$$

The following shows the formula for estimating the number of files  $N$  that are created in the Store database:

$$\begin{aligned}
 N &= 20 + 2 \times ( \\
 &\quad (A11 + A12 + \dots + A1m + m) + \\
 &\quad (A21 + A22 + \dots + A2m + m) + \\
 &\quad (A31 + A32 + \dots + A3m + m) + \\
 &\quad (A41 + A42 + \dots + A4m + m) + \\
 &\quad (A51 + A52 + \dots + A5m + m) + \\
 &\quad (11 \times m) + \\
 &\quad (B1 + B2 + \dots + Bn + n) + \\
 &\quad (C1 + C2 + \dots + Co + o) \\
 &\quad )
 \end{aligned}$$

$$\begin{aligned}
&= 20 + 2 \times \{ \\
&\quad [3 \text{ (for PI)} + 3 \text{ (for PI\_LOGD)} + 2] + \\
&\quad [3 \text{ (for PI)} + 3 \text{ (for PI\_LOGD)} + 2] + \\
&\quad [1 \text{ (for PI)} + 1 \text{ (for PI\_LOGD)} + 2] + \\
&\quad [1 \text{ (for PI)} + 1 \text{ (for PI\_LOGD)} + 2] + \\
&\quad [1 \text{ (for PI)} + 1 \text{ (for PI\_LOGD)} + 2] + \\
&\quad [11 \times 2] + \\
&\quad [10 \text{ (for PD)} + 10 \text{ (for PD\_PDI)} + 2] \\
&\quad \} \\
&= 20 + 2 \times \{8 + 8 + 4 + 4 + 4 + 22 + 22\} \\
&= 20 + 2 \times 72 = 20 + 144 = 164
\end{aligned}$$

### ■ Number of directories

This example shows how to estimate the number of directories when the PI, PI\_LOGD, PD, and PD\_PDI records are to be collected.

The variables shown in the formula for the number of directories in (a) *Formula for estimating disk space requirements, number of files, and number of directories* have the following values:

$A1max = 3$  (days) (Principle: When the setting for PI is 2 days and the setting for PI\_LOGD is 3 days, 3 days is used.)

$A2max = 3$  (days)

$A3max = 1$  (weeks)

$A4max = 1$  (weeks)

$A5max = 1$  (months)

$Bmax = 10$  (days) (Principle: When the setting for PD\_PDI is 8 days and the setting for PI is 10 days, 10 days is used.)

$Cmax = \text{None}$

The following shows the formula for estimating the number of directories  $N$  that are created in the Store database:

$$\begin{aligned}
N &= 25 + 2 \times ((A1max) + (A2max) + (A3max) + (A4max) + (A5max) \\
&\quad + 11 + (Bmax) + (Cmax)) \\
&= 25 + 2 \times (3 + 3 + 1 + 1 + 1 + 11 + 10 + 0) = 25 + 2 \times 30 = 85
\end{aligned}$$

### ■ Number of files that the Store service opens

This example shows how to estimate the number of files that the Store service opens when the PI, PI\_LOGD, PD, and PD\_PDI records are to be collected.

The variables shown in the estimation formula in (a) *Formula for estimating disk space requirements, number of files, and number of directories* have the following values:

$l = 2$

$m = 2$

$n = 0$

#### A. Estimating System Requirements

The following shows the formula for estimating the number of files  $N$  that the Store service opens:

$$\begin{aligned} N &= 20 + 2 \times (6 \times 1 + m + n) \\ &= 20 + 2 \times (6 \times 2 + 2 + 0) = 48 \end{aligned}$$

## B. List of Identifiers

When operating PFM - Agent for Platform or extracting performance data from the Store database of PFM - Agent for Platform, identifiers that indicate PFM - Agent for Platform are necessary in some cases. The table below shows the identifiers of PFM - Agent for Platform.

*Table B-1: PFM - Agent for Platform identifier list*

Purpose	Name	Identifier	Explanation
Command, etc.	Product ID	T	Product ID is part of a service ID. You need a service ID when you use a command to check the Performance Management system configuration or back up performance data. For details about service IDs, see the chapter explaining the Performance Management functions in the manual <i>Job Management Partner 1/Performance Management Planning and Configuration Guide</i> .
	Service key	agtt or Windows	You need a service key when you use a command to start or stop PFM - Agent for Platform. For details about service keys, see the chapter explaining the Performance Management functions in the manual <i>Job Management Partner 1/Performance Management Planning and Configuration Guide</i> .
ODBC	Product type identifier	NT	You need a product type identifier when you use an SQL statement to extract data. For details, see the chapter explaining operation analysis that is linked with an ODBC-compatible application program in the manual <i>Job Management Partner 1/Performance Management User's Guide</i> .
Help	Help ID	pcat	Indicates help for PFM - Agent for Platform.

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## C. List of Processes

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This appendix lists the processes in PFM - Agent for Platform.

For details about the processes in PFM - Manager, PFM - Base, and PFM - Web Console, see the appendix to the manual *Job Management Partner 1/Performance Management Reference*. The table below shows the processes in PFM - Agent for Platform. The value provided next to the process name indicates the number of processes that can be concurrently started.

*Table C-1:* List of processes in PFM - Agent for Platform

<b>Process name (Number of processes)</b>	<b>Function</b>
<code>jpcagtt.exe</code> (1)	Agent Collector service process. One Agent Collector service process is started for each PFM - Agent for Platform.
<code>jpcsto.exe</code> (1)	Agent Store service process. One Agent Store service process is started for each PFM - Agent for Platform.
<code>stpqlpr.exe</code> (1) <sup>#</sup>	Process for executing a backup or export of the Store database

<sup>#</sup>: Child process of the `jpcsto` process

## D. List of Port Numbers

This appendix lists the port numbers used by PFM - Agent for Platform.

For details about the port numbers used by PFM - Manager and PFM - Base, and the firewall passage directions, see the appendix to the manual *Job Management Partner 1/Performance Management Reference*.

You can also change port numbers to the desired numbers as needed by the user environment.

For details about how to change port numbers, see the chapter explaining installation and setup in the manual *Job Management Partner 1/Performance Management Planning and Configuration Guide*. The protocol used is TCP/IP.

*Notes:*

Performance Management supports static NAT (Basic NAT), which converts addresses on a one-to-one basis.

Performance Management does not support dynamic NAT or NATP (IP Masquerade, NAT+), which includes a port conversion function.

### D.1 Port numbers of PFM - Agent for Platform

The table below shows the port numbers used by PFM - Agent for Platform.

*Table D-1:* Port numbers used by PFM - Agent for Platform

Port number	Service name	Parameter	Application
20279 <sup>#</sup>	Agent Store service	jp1pcstot	Used for recording performance data and acquiring historical reports.
20280 <sup>#</sup>	Agent Collector service	jp1pcagtt	Used for binding an alarm and acquiring real-time reports.

#

If you do not change the port numbers to the desired numbers when executing the `jpccconf port define (jpcnsconfig port define)` command, these port numbers are assigned. If the `jpccconf port define (jpcnsconfig port define)` command is not executed, port numbers not being used by the system are automatically assigned when the service is restarted.

### D.2 Firewall passage directions

When PFM - Manager and PFM - Agent for Platform (Windows) are located across a firewall, specify fixed values for the port numbers of PFM - Manager and all PFM - Agent services. Furthermore, specify each port number in the direction shown in the

table below to allow all services to pass through the firewall.

*Table D-2: Firewall passage directions (between PFM - Manager and PFM - Agent)*

Service name	Parameter	Passage direction
Agent Store	jp1pcstot	Agent ← Manager
Agent Collector	jp1pcagt	Agent ← Manager

Legend:

Manager: PFM - Manager host

Agent: PFM - Agent host

← : Direction for starting communication (connection) from the right term to the left term

When communication (connection) is initiated, the receiving side (the side indicated by the tip of the arrow) uses the port numbers shown in Table D-1 as receiving ports. The connecting side uses the free port numbers assigned by the OS as sending ports. The available range of port numbers depends on the OS.

When a connection is initiated from Manager to Agent as shown above, set the firewall so that the sending ports temporarily used by Manager can pass through to the receiving ports of Agent.

*Note:*

To execute the `jpctool db dump (jpcctrl dump)` or `jpctool service list (jpcctrl list)` command on the PFM - Agent host, use one of the following methods:

- Specify the `proxy` option of the `jpctool db dump (jpcctrl dump)` or `jpctool service list (jpcctrl list)` command such that communication takes place via PFM - Manager. For details about the `proxy` option of the `jpctool db dump (jpcctrl dump)` or `jpctool service list (jpcctrl list)` command, see the chapter explaining commands in the manual *Job Management Partner 1/Performance Management Reference*.
- Specify port numbers between the PFM - Agent hosts, with the firewall passage directions shown in the table below.

*Table D-3: Firewall passage directions (between PFM - Agent hosts)*

Service name	Parameter	Passage direction
Agent Store	jp1pcstot	Agent ← → Agent

Service name	Parameter	Passage direction
Agent Collector	jplpcagt	Agent ← → Agent

Legend:

Agent: PFM - Agent host

← → : Direction for starting communication (connection) from the left term to the right term and from the right term to the left term

## E. Properties of PFM - Agent for Platform

This appendix lists the properties of the Agent Store and Agent Collector services of PFM - Agent for Platform that are displayed on PFM - Web Console.

### E.1 Agent Store service properties

The table below shows the properties of the Agent Store service of PFM - Agent for Platform.

*Table E-1: Properties of the Agent Store service of PFM - Agent for Platform*

Folder name	Property name	Explanation
--	First Registration Date	Shows the first date on which the service was recognized by PFM - Manager.
	Last Registration Date	Shows the last date on which the service was recognized by PFM - Manager.
General	--	Stores information such as the host name and folders. The properties stored in this folder cannot be modified.
	Directory	Shows the name of the current folder in which the service runs.
	Host Name	Shows the name of the host on which the service runs.
	Process ID	Shows the process ID of the service.
	Physical Address	Shows the IP address and port number of the host on which the service runs.
	User Name	Shows the name of the user who executed the service process.
	Time Zone	Shows the time zone used by the service.
System	--	Stores the OS information of the OS under which the service has been started. The properties stored in this folder cannot be modified.
	CPU Type	Shows the CPU type.
	Hardware ID	Shows the hardware ID.
	OS Type	Shows the OS type.

Folder name		Property name	Explanation
		OS Name	Shows the OS name.
		OS Version	Shows the OS version.
Network Services		--	Stores information on the Performance Management communication common library. The properties stored in this folder cannot be modified.
		Build Date	Shows the Agent Store service creation date.
		INI File	Shows the name of the folder storing the <code>jpcons.ini</code> file.
Network Services	Service	--	Stores information on the service. The properties stored in this folder cannot be modified.
		Description	Shows additional service information such as the host name and service type.
		Local Service Name	Shows the service ID.
		RemoteService Name	Shows the service ID of the Master Manager service of the connection destination PFM - Manager host.
		EP Service Name	Shows the service ID of the Correlator service of the connection destination PFM - Manager host.
Retention		--	Specifies the data retention period when the Store version is 1.0. For details, see the chapter explaining management of operation monitoring data in the manual <i>Job Management Partner 1/ Performance Management User's Guide</i> .

Folder name	Property name	Explanation
	Product Interval - Minute Drawer	<p>Specifies the minute-by-minute record retention period for PI-type records. One of the following can be selected:</p> <ul style="list-style-type: none"> <li>• Minute</li> <li>• Hour</li> <li>• Day</li> <li>• 2 Days</li> <li>• 3 Days</li> <li>• 4 Days</li> <li>• 5 Days</li> <li>• 6 Days</li> <li>• Week</li> <li>• Month</li> <li>• Year</li> </ul>
	Product Interval - Hour Drawer	<p>Specifies the hourly record retention period for PI-type records. One of the following can be selected:</p> <ul style="list-style-type: none"> <li>• Hour</li> <li>• Day</li> <li>• 2 Days</li> <li>• 3 Days</li> <li>• 4 Days</li> <li>• 5 Days</li> <li>• 6 Days</li> <li>• Week</li> <li>• Month</li> <li>• Year</li> </ul>
	Product Interval - Day Drawer	<p>Specifies the daily record retention period for PI-type records. One of the following can be selected:</p> <ul style="list-style-type: none"> <li>• Day</li> <li>• 2 Days</li> <li>• 3 Days</li> <li>• 4 Days</li> <li>• 5 Days</li> <li>• 6 Days</li> <li>• Week</li> <li>• Month</li> <li>• Year</li> </ul>

Folder name		Property name	Explanation
		Product Interval - Week Drawer	Specifies the weekly record retention period for <code>PI</code> -type records. One of the following can be selected: <ul style="list-style-type: none"> <li>• Week</li> <li>• Month</li> <li>• Year</li> </ul>
		Product Interval - Month Drawer	Specifies the monthly record retention period for <code>PI</code> -type records. One of the following can be selected: <ul style="list-style-type: none"> <li>• Month</li> <li>• Year</li> </ul>
		Product Interval - Year Drawer	Specifies the yearly record retention period for <code>PI</code> -type records. Fixed to <code>Year</code> .
		Product Detail - <i>record-id-of-pd-type-record</i>	Specifies the number of records retained for each <code>PD</code> -type record. An integer in the range from 0 to 2,147,483,647 can be specified. <i>Note:</i> If an invalid numerical value or a character such as a letter is specified, an error message is displayed.
RetentionEx		--	Specifies the data retention period when the Store version is 2.0. For details, see the chapter explaining management of operation monitoring data in the manual <i>Job Management Partner 1/ Performance Management User's Guide</i> .
RetentionEx	Product Interval - <i>record-ID-of-PI-type-record</i>	--	Specifies the record retention period for <code>PI</code> -type records.
		Period - Minute Drawer (Day)	Specifies the minute-by-minute performance data retention period for each <code>PI</code> -type record ID. An integer in the range from 0 to 366 can be specified for the retention period (number of days).
		Period - Hour Drawer (Day)	Specifies the hourly performance data retention period for each <code>PI</code> -type record ID. An integer in the range from 0 to 366 can be specified for the retention period (number of days).

Folder name		Property name	Explanation
		Period - Day Drawer (Week)	Specifies the daily performance data retention period for each $\text{PI}$ -type record ID. An integer in the range from 0 to 522 can be specified for the retention period (number of weeks).
		Period - Week Drawer (Week)	Specifies the weekly performance data retention period for each $\text{PI}$ -type record ID. An integer in the range from 0 to 522 can be specified for the retention period (number of weeks).
		Period - Month Drawer (Month)	Specifies the monthly performance data retention period for each $\text{PI}$ -type record ID. An integer in the range from 0 to 120 can be specified for the retention period (number of months).
		Period - Year Drawer (Year)	Displays the yearly performance data retention period for each $\text{PI}$ -type record ID.
	Product Detail - <i>record-ID-of</i> <i>-PD-type-record</i>	Period (Day)	Specifies the performance data retention period for each $\text{PD}$ -type record ID. An integer in the range from 0 to 366 can be specified for the retention period (number of days).
	Product Log - <i>record-ID-of</i> <i>-PL-type-record</i>	Period (Day)	Specifies the performance data retention period for each $\text{PL}$ -type record ID. An integer in the range from 0 to 366 can be specified for the retention period (number of days).
Disk Usage		--	Stores the disk capacity used by each database. The properties stored in this folder show the disk usage at the time when these properties are displayed. The properties stored in this folder cannot be modified.
		Product Interval	Shows the disk capacity used by $\text{PI}$ -type records.
		Product Detail	Shows the disk capacity used by $\text{PD}$ -type records.
		Product Alarm	Shows the disk capacity used by $\text{PA}$ -type records. Not used in PFM - Agent for Platform (Windows).

Folder name	Property name	Explanation
	Product Log	Shows the disk capacity used by PL-type records. Not used in PFM - Agent for Platform (Windows).
	Total Disk Usage	Shows the disk capacity used by the entire database.
Configuration	--	Shows the properties of the Agent Store service.
	Store Version	Shows the Store database version. <ul style="list-style-type: none"> <li>• For Store version 1.0: 1.0</li> <li>• For Store version 2.0: 2.0</li> </ul>

Legend:

--: Not applicable

## E.2 Agent Collector service properties

The table below shows the properties of the Agent Collector service of PFM - Agent for Platform.

*Table E-2:* Properties of the Agent Collector service of PFM - Agent for Platform

Folder name	Property name	Explanation
--	First Registration Date	Shows the first date on which the service was recognized by PFM - Manager.
	Last Registration Date	Shows the last date on which the service was recognized by PFM - Manager.
	Data Model Version	Shows the version of the data model.
General	--	Stores information such as the host name and folders. The properties stored in this folder cannot be modified.
	Directory	Shows the name of the current folder in which the service runs.

Folder name		Property name	Explanation
		Host Name	Shows the name of the host on which the service runs.
		Process ID	Shows the process ID of the service.
		Physical Address	Shows the IP address and port number of the host on which the service runs.
		User Name	Shows the name of the user who executed the service process.
		Time Zone	Shows the time zone used by the service.
System		--	Stores the OS information of the OS under which the service has been started. The properties stored in this folder cannot be modified.
		CPU Type	Shows the CPU type.
		Hardware ID	Shows the hardware ID.
		OS Type	Shows the OS type.
		OS Name	Shows the OS name.
		OS Version	Shows the OS version.
Network Services		--	Stores information on the Performance Management communication common library. The properties stored in this folder cannot be modified.
		Build Date	Shows the Agent Collector service creation date.
		INI File	Shows the name of the folder storing the <code>jpcns.ini</code> file.
Network Services	Service	--	Stores information on the service. The properties stored in this folder cannot be modified.
		Description	Shows additional service information such as the host name and service type.
		Local Service Name	Shows the service ID.
		RemoteService Name	Shows the service ID of the Agent Store service to which the Agent Collector service connects.
		AH Service Name	Shows the service ID of the Action Handler service that is located on the same host.

Folder name		Property name	Explanation
JP1 Event Configurations		--	Sets the condition for issuing JP1 events.
		<i>service</i>	Yes or No is selected from a list for the Agent Collector service, Agent Store service, Action Handler service, and Status Server service to specify whether to output JP1 system events for each service.
		JP1 Event Send Host	Specifies the name of the event server to which J1/Base connects. However, only the event server running on the logical host or physical host on the same machine as for the Action Handler service can be specified. From 0 to 255 bytes of alphanumeric characters, periods (.), and hyphens (-) can be specified. If a value outside this range is specified, it is assumed that no value has been specified. If no value is specified, the host on which the Action Handler service is running is used as the host that issues events. If localhost is specified, the physical host is assumed.
		Monitoring Console Host	Specifies the PFM - Web Console host that is to be started when the PFM - Web Console browser is started by starting the JP1/IM - Manager monitor. From 0 to 255 bytes of alphanumeric characters, periods (.), and hyphens (-). If a value outside this range is specified, it is assumed that no value has been specified. If no value is specified, the PFM - Manager host to be connected is assumed.
		Monitoring Console Port	Specifies the port number of PFM - Web Console (http request port number) to be started. A value in the range from 1 to 65,535 can be specified. If a value outside this range is specified, it is assumed that no value has been specified. If no value is specified, 20358 is set.
JP1 Event Configurations	Alarm	JP1 Event Mode	Specifies whether a JP1 system event or a JP1 user event is to be issued if the alarm status changes. <ul style="list-style-type: none"> <li>• JP1 User Event: A JP1 user event is issued.</li> <li>• JP1 System Event: A JP1 system event is issued.</li> </ul>
Detail Records		--	Stores the properties of PD-type records. The record ID of the record being collected is displayed in bold letters.

Folder name		Property name	Explanation
Detail Records	<i>record-id</i> <sup>#1</sup>	--	Stores record properties.
		Description	Shows record description. This property cannot be modified.
		Log	<i>Yes</i> or <i>No</i> is selected from a list to specify whether to register records in the Store database. If this value is <i>Yes</i> and the Collection Interval is greater than 0, records are registered in the database.
		Collection Interval	Specifies the data collection interval. A value in the range from 0 to 2,147,483,647 seconds can be specified in 1-second increments. If 0 is specified, the collection interval is 0 and no data is collected.
		Collection Offset	Specifies the offset value for starting data collection. A value in the range from 0 to 32,767 seconds can be specified in 1-second increments, but cannot exceed the range specified for Collection Interval. Regardless of the value specified for Collection Offset, the data collection recording time is the same as the value specified for Collection Interval.
		LOGIF	Specifies the condition for registering records in the database. Only those records satisfying the condition are registered in the database. Displays the conditional expression (character string) created in the LOGIF Expression Setting window, which is displayed by clicking <b>LOGIF</b> on the bottom frame of the Property window of the service that is displayed under the <b>Services</b> tab in PFM - Web Console.
		Sync Collection With	Synchronizes collection with the record specified in the following format: Sync Collection With = <i>record-type</i> , <i>record-id</i> <i>Example</i> : Sync Collection With=Interval Records, PI
Interval Records	--	Stores the properties of <b>PI</b> -type records. The record ID of the record being collected is displayed in bold letters.	
Interval Records	<i>record-id</i> <sup>#1</sup>	--	Stores record properties.

Folder name		Property name	Explanation
		Description	Shows record description. This property cannot be modified.
		Log	Yes or No is selected from a list to specify whether to register records in the Store database. If this value is Yes and the Collection Interval is greater than 0, records are registered in the database.
		Collection Interval	Specifies the data collection interval. A value in the range from 0 to 2,147,483,647 seconds can be specified in 1-second increments. If 0 is specified, the collection interval is 0 and no data is collected.
		Collection Offset	Specifies the offset value for starting data collection. A value in the range from 0 to 32,767 seconds can be specified in 1-second increments, but cannot exceed the range specified for Collection Interval. Regardless of the value specified for Collection Offset, the data collection recording time is the same as the value specified for Collection Interval.
		LOGIF	Specifies the condition for registering records in the database. Only those records satisfying the condition are registered in the database. Displays the conditional expression (character string) created in the LOGIF Expression Setting window, which is displayed by clicking <b>LOGIF</b> on the bottom frame of the Property window of the service that is displayed under the <b>Services</b> tab in PFM - Web Console.
Log Records	--	Stores the properties of PL-type records. This record is not supported in PFM - Agent for Platform and thus is not used.	
Restart Configurations	--	Sets the condition for automatically restarting the PFM service. The condition can be set when the version of PFM - Manager or PFM - Base is 09-00 or later. For details about the PFM service Auto-restart functionality, see the chapter explaining the Performance Management functions in the manual <i>Job Management Partner I/Performance Management Planning and Configuration Guide</i> .	

Folder name		Property name	Explanation
		Restart when Abnormal Status	Specifies whether to automatically restart the service if the Status Server service cannot correctly obtain the statuses of the Action Handler service, Agent Collector service, and Agent Store service.
		Restart when Single Service Running	Specifies whether to automatically restart the service if only the Agent Store service or only the Agent Collector service is running.
Restart Configurations	Action Handler	Auto Restart	Specifies whether to use the Auto-restart functionality for the Action Handler service.
		Auto Restart - Interval (Minute)	Sets the interval in minutes for checking the operating status of the service when the Auto-restart functionality is used.
		Auto Restart - Repeat Limit	Sets the number of times restart is retried in succession when the Auto-restart functionality is used.
		Scheduled Restart	Specifies whether to use the scheduled restart functionality for the Action Handler service.
		Scheduled Restart - Interval	Sets the restart interval when the scheduled restart functionality is used.
		Scheduled Restart - Interval Unit	Sets the unit of the restart interval when the scheduled restart functionality is used.
		Scheduled Restart - Origin - Year	The restart year can be specified as an integer in the range from 1971 to 2035.
		Scheduled Restart - Origin - Month	The restart month can be specified as an integer in the range from 1 to 12.
		Scheduled Restart - Origin - Day	The restart day can be specified as an integer in the range from 1 to 31.
		Scheduled Restart - Origin - Hour	The restart time (hour) can be specified as an integer in the range from 0 to 23.

Folder name		Property name	Explanation
		Scheduled Restart - Origin - Minute	The restart time (minute) can be specified as an integer in the range from 0 to 59.
	Agent Collector	Auto Restart	Specifies whether to use the Auto-restart functionality for the Agent Collector service.
		Auto Restart - Interval (Minute)	Sets the interval in minutes for checking the operating status of the service when the Auto-restart functionality is used.
		Auto Restart - Repeat Limit	Sets the number of times restart is retried in succession when the Auto-restart functionality is used.
		Scheduled Restart	Specifies whether to use the scheduled restart functionality for the Agent Collector service.
		Scheduled Restart - Interval	Sets the restart interval when the scheduled restart functionality is used.
		Scheduled Restart - Interval Unit	Sets the unit of the restart interval when the scheduled restart functionality is used.
		Scheduled Restart - Origin - Year	The restart year can be specified as an integer in the range from 1971 to 2035.
		Scheduled Restart - Origin - Month	The restart month can be specified as an integer in the range from 1 to 12.
		Scheduled Restart - Origin - Day	The restart day can be specified as an integer in the range from 1 to 31.
		Scheduled Restart - Origin - Hour	The restart time (hour) can be specified as an integer in the range from 0 to 23.
		Scheduled Restart - Origin - Minute	The restart time (minute) can be specified as an integer in the range from 0 to 59.
	Agent Store	Auto Restart	Specifies whether to use the Auto-restart functionality for the Agent Store service.

Folder name		Property name	Explanation
		Auto Restart - Interval (Minute)	Sets the interval in minutes for checking the operating status of the service when the Auto-restart functionality is used.
		Auto Restart - Repeat Limit	Sets the number of times a restart is retried in succession when the Auto-restart functionality is used.
		Scheduled Restart	Specifies whether to use the scheduled restart functionality for the Agent Store service.
		Scheduled Restart - Interval	Sets the restart interval when the scheduled restart functionality is used.
		Scheduled Restart - Interval Unit	Sets the unit of the restart interval when the scheduled restart functionality is used.
		Scheduled Restart - Origin - Year	The restart year can be specified as an integer in the range from 1971 to 2035.
		Scheduled Restart - Origin - Month	The restart month can be specified as an integer in the range from 1 to 12.
		Scheduled Restart - Origin - Day	The restart day can be specified as an integer in the range from 1 to 31.
		Scheduled Restart - Origin - Hour	The restart time (hour) can be specified as an integer in the range from 0 to 23.
		Scheduled Restart - Origin - Minute	The restart time (minute) can be specified as an integer in the range from 0 to 59.
Agent Configuration		User Defined Record DataMaxCount	Stores the property that defines the maximum number of user records that can be collected.
Application Monitoring Setting	<i>instance-name<sup>#2</sup></i>	--	Shows the monitoring instance name that is added.

Folder name		Property name	Explanation
		Process[01-15] Kind <sup>#3</sup>	Shows the process type: <ul style="list-style-type: none"> <li>• <code>None</code>: No process is specified.</li> <li>• <code>Service Name</code>: See the value of the Service Name field of the <code>PD_SVC</code> record.</li> <li>• <code>Command Line</code>: See the value of the Program field of the <code>PD</code> record.</li> </ul>
		Process[01-15] Name <sup>#3</sup>	Enter a process name that does not exceed 127 bytes.
		Process[01-15] Range <sup>#3</sup>	Enter the upper and lower limits of the number of processes. Insert a hyphen between the limits (for example, 1-2). If a single value without a hyphen is specified, the same value can be specified for the upper and lower limits. For example, when 10 is specified, 10-10 is set. A value in the range from 0 to 65535 can be specified.
ADDITION OR DELETION A SETTING		ADD AN APPLICATION MONITORING SETTING	Shows the monitoring instance name to be added.
		DELETE AN APPLICATION MONITORING SETTING	Selects the monitoring instance name to be deleted. Specify <code>None</code> if you do not want to delete a monitoring instance.
User Command Setting	<i>user-record-name</i> <sup>#4</sup>	Execute	Specifies whether to use the function for periodically executing user commands. <ul style="list-style-type: none"> <li>• <code>Yes</code>: Use.</li> <li>• <code>No</code>: Do not use.</li> </ul>
		UserCommand	Specifies the absolute path for user commands. The maximum length of the string that can be specified for an absolute path is 255 bytes. Alphanumeric characters and symbols can be specified, except for the following characters:   < >

## Legend:

--: Not applicable

#1

For the folder name, a record ID without a database ID is displayed. For details

about record IDs of individual records, see *5. Records*.

#2

For the folder name, the instance name set in ADD AN APPLICATION MONITORING SETTING is displayed. For details about how to set the instance name, see *3.2.5 Settings for collecting application operation and non-operation information*.

#3

For Process[01-15] Kind, Process[01-15] Name, and Process[01-15] Range, a value in the range from 01 to 15 appears in place of [01-15] in each property name. For example, the property items that are actually displayed will be Process01 Kind, Process07 Name, and Process15 Range.

#4

For the folder name, PD\_UPD, PD\_UPDB, PI\_UPI, or PI\_UPIB is displayed.

## F. List of Files and Folders

This appendix lists the files and folders of PFM - Agent for Platform.

You can install Performance Management in any folder. The following is the default installation folder:

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

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

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

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

The table below lists the files and folders of PFM - Agent for Platform.

*Table F-1:* List of files and folders of PFM - Agent for Platform

Folder name	File name	Explanation
<i>installation-folder</i> \agtt\	--	Base folder of PFM - Agent for Platform (Windows)
	readme.txt	README.TXT (Japanese)
	*.*	Various types of files in PFM - Agent for Platform (Windows)
<i>installation-folder</i> \agtt\agent\	--	Base folder of Agent Collector service
	jpcagt.ini	Agent Collector service settings file
	jpcagt.ini.model	Model file for the Agent Collector service settings file
	jpcagtt.exe	Agent Collector service execution program
	jpcapp <sup>#1</sup>	Application definition file
	jpcconfig.exe	Collection data addition utility execution program
	WMI_Database.vbs <sup>#2</sup>	Database information acquisition program
	x64exec.exe <sup>#2</sup>	x64 native execution program

F. List of Files and Folders

Folder name	File name	Explanation
<i>installation-folder</i> \agtt\agent\log\	--	Storage folder for internal log files of the Agent Collector service
<i>installation-folder</i> \agtt\lib\	--	Message catalog installation folder
	jpcagttmsg.dll	PFM - Agent for Platform (Windows) message catalog file
<i>installation-folder</i> \agtt\agent\jpcuser\	--	Base folder of the function for collecting user-specific performance data
<i>installation-folder</i> \agtt\agent\jpcuser\	jpcuser.exe	Execution program for the function for collecting user-specific performance data
<i>installation-folder</i> \agtt\agent\jpcuser\	jpcuser.ini	Configuration file for the function for collecting user-specific performance data
<i>installation-folder</i> \agtt\agent\jpcuser\debug\	--	jpcuser command debug log folder
<i>installation-folder</i> \agtt\agent\jpcuser\log\trace\	--	Trace log file (internal log file) storage folder
<i>installation-folder</i> \agtt\agent\jpcuser\log\public\	--	Public log file storage folder
<i>installation-folder</i> \agtt\agent\jpcuser\userdata\	--	User data file output folder
<i>installation-folder</i> \agtt\store\	--	Base folder of Agent Store service
	*.DB	Performance data file
	*.IDX	Index file of the performance data file
	*.LCK	Lock file of the performance data file
	jpcsto.ini	Agent Store service settings file
	jpcsto.ini.model	Model file for the Agent Store service settings file
	*.DAT	Data model definition file

Folder name	File name	Explanation
<i>installation-folder</i> \agtt\store\backup\	--	Default database backup destination folder
<i>installation-folder</i> \agtt\store\partial\	--	Default database partial-backup destination folder
<i>installation-folder</i> \agtt\store\dump\	--	Default database export destination folder
<i>installation-folder</i> \agtt\store\import\	--	Default database import destination folder
<i>installation-folder</i> \agtt\store\log\	--	Storage folder for internal log files of the Agent Store service
<i>installation-folder</i> \agtt\store\STPD\	--	PD database specific folder
<i>installation-folder</i> \agtt\store\STPI\	--	PI database specific folder
<i>installation-folder</i> \auditlog\	--	Default output folder for action log files
	jpcauditn.log <sup>#3</sup>	Action log file
<i>installation-folder</i> \setup\	--	Setup file storage folder
	jpcagttu.z	Archive file for PFM - Agent setup (UNIX)
	jpcagttw.EXE	Archive file for PFM - Agent setup (Windows)
<i>installation-folder</i> \setup\alarm	--	Storage folder for alarm table restoration
	TALARM	File for restoring alarm table 6.70
	TALARMxxxx	File for restoring alarm tables. xxxx is the alarm table version. Example: For version 8.11, 0811 is displayed.
<i>installation-folder</i> \setup\extract	--	Setup file expansion folder
<i>installation-folder</i> \setup\update\	--	Version upgrade work folder
<i>installation-folder</i> \setup\update\agt t\	--	Folder for PFM - Agent for Platform (Windows) version upgrade

F. List of Files and Folders

Folder name	File name	Explanation
	*.*	Files for PFM - Agent for Platform (Windows) version upgrade

Legend:

--: Not applicable

#1

This file exists only when the setting for monitoring an application is specified.

#2

This file exists only in Windows Server 2003 (x86) and the 32-bit version of Windows Server 2008.

#3

*n* is a numeric value. The number of log files can be changed in the `jpccomm.ini` file.

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## G. Migration Procedure and Notes on Migration

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To upgrade PFM - Agent for Platform to a newer version, install the newer version by overwriting the older version. For details about installation operations, see 2.

*Installation and Setup.*

For details about migrating from an older version of Performance Management to a newer version (from version 07-00 or earlier to 08-00 or later), see the appendix of the manual *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

*Notes:*

- When upgrading the PFM - Agent for Platform version, do not uninstall the older version. If you uninstall it, performance data and other data created with the older version are also deleted, and as a result, the newer version will not work.
- When a newer version of PFM - Agent for Platform is installed by overwriting an older version, the following items are automatically updated:
  - Store database file of the Agent Store service
  - ini file
- In Performance Management programs of version 08-00 or newer, the locations of the Store executing programs (`jpcsto.exe` and `stpqlpr.exe` for Windows, and `jpcsto` and `stpqlpr` for UNIX) have been changed. When PFM - Manager and PFM - Agent are upgraded to version 08-00 or newer, the Store executing programs at the older locations are deleted.

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## H. Version Compatibility

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In PFM - Agent, there are product versions as well as data model versions.

Because data models maintain upward compatibility, report definitions and alarm definitions created in the older version can also be used in the newer version of the data model.

The table below shows version compatibility of PFM - Agent for Platform.

*Table H-1: PFM - Agent for Platform version compatibility*

<b>PFM - Agent for Platform version</b>	<b>Data model version</b>	<b>Alarm table version of the monitoring template</b>
06-70	3.0	6.70
07-00	4.0	7.00
	4.1	
08-00	6.0	8.00
08-11	7.2	8.11
09-00	7.6	09.00

In PFM - Agent for Platform, an alarm table of a version that is not available in the Performance Management system being used may sometimes be displayed under **Alarms** in the PFM - Web Console window. Therefore, check the alarm table version being used by the Performance Management system and its compatibility before using an alarm table.

Furthermore, an alarm table version that is not in Table H-1 is displayed on the PFM - Web Console window. Therefore, check the version of PFM - Agent for Platform being used by the Performance Management system. The table below shows data model version and monitoring template alarm table version that is not in Table H-1.

*Table H-2: Data model version and monitoring template alarm table version that is not in Table H-1*

<b>Data model version</b>	<b>Monitoring template alarm table version</b>
5.0	7.50
7.0	8.10
7.4	8.50

For details about version compatibility, see the version compatibility description in the appendix to the manual *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

## I. Outputting Action Log Data

Action log data of Performance Management is history information that is output in cooperation with the alarm function related to exceeded thresholds, such as for a system load.

For example, when a PFM service starts or stops or when the state of connection with PFM - Manager changes, log data is output to the action log.

Action log data can be output when the version of PFM - Manager or PFM - Base is 08-11 or later.

An action log is a CSV text file. By saving action logs periodically and converting them with spreadsheet software, you can use the action logs as analysis data.

Output of action log data is specified in the `jpccomm.ini` file. This appendix describes the contents of the action log data output by PFM - Agent and PFM - Base, and how to specify the setting for outputting the action log data.

### I.1 Types of events output to the action log

The following table describes the types of events output to the action log and the times at which PFM - Agent and PFM - Base output data to the action log. The event types are the identifiers used within the action log to classify the events output to the action log.

*Table I-1: Types of events output to the action log*

Event type	Explanation	PFM - Agent and PFM - Base output the action log when:
StartStop	Events indicating that software is started or terminated.	<ul style="list-style-type: none"> <li>A PFM service is started or stopped.</li> <li>Stand-alone mode is started or terminated.</li> </ul>
ExternalService	Events indicating the result of communication between a JP1 product and an external service. This event type also indicates that an abnormal communication has occurred.	The status of a connection with PFM - Manager has changed.
ManagementAction	Events indicating that an important action of the program has been executed. This event type also indicates that the action was executed in response to another audit category.	An automated action is executed.

## I.2 Format for saving the action log files

This section explains the format for saving the action log files.

Action log data is output to a specified file (the current output file). When the current output file becomes full, the action log data in that file is saved to another file (the shift file). The procedure for switching the file for storing action log data is as follows:

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 is saved in a shift file.

The name of a shift file is the current output file name suffixed with a number. Each time the current output file becomes full, each shift file is renamed by incrementing the suffix by 1. Therefore, the file whose name has the largest number is the oldest log file.

Example:

When the current output file `jpcaudit.log` becomes full, the contents of the file are saved to the shift file `jpcaudit1.log`.

When the current output file becomes full again, the information is moved to `jpcaudit1.log`, and the existing shift file `jpcaudit1.log` is renamed to `jpcaudit2.log`.

Note that when the number of log files exceeds the number of saved log files (specified in the `jpccomm.ini` file), the oldest log file is deleted.

3. The current output file is initialized, and new action log data is written.

Whether action log data is to be output, the output destination, and the number of output files are specified in the `jpccomm.ini` file. For details about how to specify the `jpccomm.ini` file, see *I.4 Settings for outputting action log data*.

## I.3 Format of output action log data

Data related to audit events is output to the Performance Management action log. Action log data is output to one file for one host. The action log data is output to a file on either of the following hosts:

- When a service is executed: The data is output to the file on the host on which the service runs.
- When a command is executed: The data is output to the file on the host on which the command was executed.

The following describes the format of the action log, the output destination, and the items that are output.

**(1) Output format**

CALFHM <i>x.x</i> , <i>output-item-1=value-1</i> , <i>output-item-2=value-2</i> , . . . , <i>output-item-n=value-n</i>
------------------------------------------------------------------------------------------------------------------------

**(2) Output destination**

*installation-folder\auditlog\*

The output destination for action log data can be changed in the `jpccomm.ini` file. For details about how to specify the `jpccomm.ini` file, see *I.4 Settings for outputting action log data*.

**(3) Output items**

There are two types of output items:

- Common output items

Items that are always output by all JP1 products that output action log data

- Fixed output items

Items that are optionally output by a JP1 product that outputs action log data

**(a) Common output items**

The following table lists and describes the common output items and their values. This table also includes the items and information output by PFM - Manager.

*Table I-2: Common output items in action logs*

No.	Output item		Value	Explanation
	Item name	Output attribute name		
1	Common specification identifier	--	CALFHM	Indicates the action log format
2	Common specification revision number	--	<i>x.x</i>	Revision number for managing action logs
3	Serial number	seqnum	<i>serial-number</i>	Serial number of the action log record
4	Message ID	msgid	KAVExxxxx- <i>x</i>	Message ID of the product
5	Date and time	date	<i>YYYY-MM-DDThh:mm:ss.sssTZD<sup>#</sup></i>	Date, time, and time zone indication identifying when the action log was output

No.	Output item		Value	Explanation
	Item name	Output attribute name		
6	Program name	progid	JP1PFM	Name of the program for which the event occurred
7	Component name	compid	<i>service-ID</i>	Name of the component for which the event occurred
8	Process ID	pid	<i>process-ID</i>	Process ID of the process for which the event occurred
9	Location	ocp:host	<ul style="list-style-type: none"> <li>• <i>host-name</i></li> <li>• <i>IP-address</i></li> </ul>	Location where the event occurred
10	Event type	ctgry	<ul style="list-style-type: none"> <li>• StartStop</li> <li>• Authentication</li> <li>• ConfigurationAccess</li> <li>• ExternalService</li> <li>• AnomalyEvent</li> <li>• ManagementAction</li> </ul>	Category name used to classify the event output to the action log
11	Event result	result	<ul style="list-style-type: none"> <li>• Success</li> <li>• Failure</li> <li>• Occurrence</li> </ul>	Result of the event
12	Subject identification information	subj:pid	<i>process-ID</i>	One of the following: <ul style="list-style-type: none"> <li>• Process ID of a process running as a user operation</li> <li>• Process ID of the process that caused the event</li> <li>• Name of the user who caused the event</li> <li>• Identification information in a one-to-one correspondence with the user</li> </ul>
		subj:uid	<i>account-identifier</i> (PFM user/JP1 user)	
		subj:euclid	<i>effective-user-ID</i> (OS user)	

Legend:

--: None

#

T is a separator between the date and the time.

*TZD* is the time zone specifier. One of the following values is output.

*+hh:mm*: The time zone is *hh:mm* ahead of UTC.

*-hh:mm*: The time zone is *hh:mm* behind UTC.

*z*: The time zone is the same as UTC.

**(b) Fixed output items**

The following table lists and describes the fixed output items and their values. This table also includes the items and information output by PFM - Manager.

*Table I-3: Fixed output items in action logs*

No.	Output item		Value	Explanation
	Item name	Output attribute name		
1	Object information	obj	<ul style="list-style-type: none"> <li>• <i>PFM - Agent-service-ID</i></li> <li>• <i>added-deleted-or-updated-user-name</i> (PFM user)</li> </ul>	Intended object for the operation
		obj:table	<i>alarm-table-name</i>	
		obj:alarm	<i>alarm-name</i>	
2	Action information	op	<ul style="list-style-type: none"> <li>• Start</li> <li>• Stop</li> <li>• Add</li> <li>• Update</li> <li>• Delete</li> <li>• Change Password</li> <li>• Activate</li> <li>• Inactivate</li> <li>• Bind</li> <li>• Unbind</li> </ul>	Information about the action that caused the event
3	Permissions information	auth	<ul style="list-style-type: none"> <li>• Administrator Management</li> <li>• General user Ordinary</li> <li>• Windows Administrator</li> <li>• UNIX SuperUser</li> </ul>	Permissions information of the user who executed the command or service

No.	Output item		Value	Explanation
	Item name	Output attribute name		
		auth:mode	<ul style="list-style-type: none"> <li>• PFM authentication mode pfm</li> <li>• JP1 authentication mode jpl</li> <li>• OS user os</li> </ul>	Authentication mode of the user who executed the command or service
4	Output source	outp:host	<i>PFM - Manager-host-name</i>	Host that output the action log
5	Instruction source	subjp:host	<ul style="list-style-type: none"> <li>• <i>login-host-name</i></li> <li>• <i>execution-host-name</i> (only when the jpcalarm (jpcalarm) command is executed)</li> </ul>	Host that issued the instruction for the operation
6	Descriptive text	msg	<i>message</i>	Message that is output when an alarm occurs or when an automated action is executed

Whether the fixed output items are output and what they contain differ depending on when the action log data is output. The following describes the message ID and output data for each case.

#### ■ A PFM service starts or stops (StartStop)

- Output host: The host on which the service is running
- Output component: The service that started or stopped

Item name	Attribute name	Value
Message ID	msgid	Started: KAVE03000-I Stopped: KAVE03001-I
Action information	op	Started: Start Stopped: Stop

#### ■ Stand-alone mode starts or stops (StartStop)

- Output host: PFM - Agent host
- Output component: Agent Collector service and Agent Store service

Item name	Attribute name	Value
Message ID	msgid	Stand-alone mode has started: KAVE03002-I Stand-alone mode has terminated: KAVE03003-I

*Notes:*

1. No fixed output items are output.
2. When PFM - Agent is started, PFM - Agent services connect to the PFM - Manager host, register node information, and obtain the latest alarm definition information. If a connection with the PFM - Manager host cannot be established, PFM - Agent starts in stand-alone mode, in which only part of its functionality, such as collection of operating information, is enabled. In addition, KAVE03002-I is output to indicate that PFM - Agent has started in stand-alone mode. From this point, the PFM - Agent services periodically attempt to connect to PFM - Manager. When the services are able to successfully register node information or obtain definition information, PFM - Agent leaves stand-alone mode and KAVE03003-I is output. In this way, the action log enables you to understand that PFM - Agent was running in an imperfect condition for the period from the output of KAVE03002-I to the output of KAVE03003-I.

■ **The status of the connection with PFM - Manager changes (ExternalService)**

- Output host: PFM - Agent host
- Output component: Agent Collector service and Agent Store service

Item name	Attribute name	Value
Message ID	msgid	Sending of an event to PFM - Manager failed (queuing was started): KAVE03300-I. An event was resent to PFM - Manager: KAVE03301-I.

*Notes:*

1. No fixed output items are output.
2. If the Agent Store service is unable to send an event to PFM - Manager, the Agent Store service starts queuing events, up to a maximum of three. When queuing is started after a failure to send an event, KAVE03300-I is output. When the connection with PFM - Manager is restored and all queued events have been sent, KAVE03301-I is output. In this way, the action log enables you to understand that real-time sending of events to PFM - Manager was disabled for the period from the output of KAVE03000-I to the output of KAVE03001-I.

3. The Agent Collector service usually sends events to PFM - Manager via the Agent Store service. It directly sends events to PFM - Manager only when the Agent Store service has stopped for some reason. If sending of events fails, KAVE03300-I is output, but KAVE03301-I is not output, since no events are queued. In this way, the action log enables you to understand that some events have not been sent to PFM - Manager.

■ **An automated action is executed (ManagementAction)**

- Output host: The host on which the action was executed
- Output component: Action Handler service

Item name	Attribute name	Value
Message ID	msgid	The command execution process was created successfully: KAVE03500-I. An attempt to create a command execution process failed: KAVE03501-W. Email was send successfully: KAVE03502-I. Sending of email failed: KAVE03503-W
Free description	msg	Command execution: <i>cmd=executed-command-line</i> . Email sending: <i>mailto=destination-email-address</i> .

*Note:* KAVE03500-I is output when the command execution process is created successfully. Thereafter, log data about whether the command was executed and about the execution results is not output to the action log.

**(4) Output example**

The following is an example of output action log data.  
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

## I.4 Settings for outputting action log data

The settings for outputting action log data are defined in the `jpccomm.ini` file. If no settings are specified, no action log data is output. The following describes the settings required to output action log data, and how to specify the settings.

**(1) Setting procedure**

To specify the settings for outputting action log data:

1. Stop all PFM services on the host.

## I. Outputting Action Log Data

- Using a text editor, edit the `jpccomm.ini` file.
- Save and close the `jpccomm.ini` file.

### (2) Details about the `jpccomm.ini` file

The following describes the `jpccomm.ini` file in detail.

#### (a) Storage folder

*installation-folder*

#### (b) Format

In the `jpccomm.ini` file, define the following information:

- Whether to output action log data
- Output destination of the action log
- Number of action logs that can be saved
- File size of the action log

The specification format is as follows:

`"item-name"=value`

The following table describes the items that you can specify.

*Table I-4: Items specified in the `jpccomm.ini` file and their initial values*

No.	Item	Explanation
1	[Action Log Section]	The section name, which cannot be changed.
2	Action Log Mode	Specify whether to output action log data. You must specify this item. <ul style="list-style-type: none"><li>Initial value: 0 (Data not output)</li><li>Specifiable value: 0 (Data not output) or 1 (Data output)</li></ul> If any other value is specified, an error message is output and action log data will not be output.
3	Action Log Dir	Specify the action log output destination. If a path longer than the limit is specified or if access to the directory fails, an error message is output to the command log and action log data will not be output. <ul style="list-style-type: none"><li>Initial value: None set</li><li>Default value used when no specification is made <i>installation-folder</i>\auditlog\</li><li>Specifiable value: A character string from 1 to 185 bytes</li></ul>

No.	Item	Explanation
4	Action Log Num	<p>Specify the upper limit on the total number of log files (number of saved files). Specify the sum of the number of current output files and shift files.</p> <ul style="list-style-type: none"> <li>• Initial value: None set</li> <li>• Default value used when no specification is made 5</li> <li>• Specifiable value: An integer in the range from 2 to 10</li> </ul> <p>If a character string containing a non-numeric value is specified, an error message is output and the default value 5 is set. If a numeric value outside the valid range is specified, an error message is output and the integer nearest the specified value in the range from 2 to 10 is set.</p>
5	Action Log Size	<p>Specify the log file size in kilobytes.</p> <ul style="list-style-type: none"> <li>• Initial value: None set</li> <li>• Default value used when no specification is made 2048</li> <li>• Specifiable value: An integer in the range from 512 to 2096128</li> </ul> <p>If a character string containing a non-numeric value is specified, an error message is output and the default value 2048 is set. If a numeric value outside the valid range is specified, an error message is output and the integer nearest the specified value in the range from 512 to 2096128 is set.</p>

## J. Version Changes

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### J.1 Changes in 09-00

- The name *solution set* has changed to *monitoring template*.
- The operability of the collection data addition utility has been improved.
- The alarm table version for the monitoring template has been changed from 8.11 to 09.00. Accordingly, the following alarm tables have been added:
  - PFM Windows Template Alarms [CPU]09.00
  - PFM Windows Template Alarms [MEM]09.00
  - PFM Windows Template Alarms [DSK]09.00
  - PFM Windows Template Alarms [NET]09.00
  - PFM Windows Template Alarms [PS]09.00
  - PFM Windows Template Alarms [LOG]09.00

The following alarms have also been added:

- Processor Queue
- SVR Processor Queue
- Committed Mbytes
- Pages/sec
- Page Faults/sec
- Logical Disk Free
- Disk Busy %
- Logical Disk Queue
- Physical Disk Queue
- Network Received
- Process End
- Process Alive
- Service(Service Nm)
- Service(Display Nm)
- Event Log(all)

- Event Log(System)
- Linkage with JPI/IM has been enhanced. Accordingly, the following folder has been added to the list of properties for the Agent Collector service:
 

JPI Event Configurations
- The following messages have been added:
 

KAVF11007-W, KAVF11318-W, KAVF11500-W to KAVF11502-W, and  
KAVF11998-E
- The data model version has changed from 7.2 to 7.6.
- With the addition of new-format commands compatible with 08-11 or earlier commands, the commands for 09-00 or later is now indicated as follows:
 

*command-for-09-00-or-later (command-for-08-11-or-earlier)*
- The following OSs have been added as the OSs on which PFM - Agent for Platform operates and as OSs for programs that can be monitored:
  - Windows Server 2008
  - Windows Server 2008 (IPF)
- The following examples of operations have been added.
  - Example of collecting information about used ports
  - Example of collecting performance data from multiple hosts on which PFM products are not installed

New Active Directory monitoring examples have been added.

- Setup procedures have been simplified.
- Functionality that executes a user command from PFM - Agent for Platform at a fixed interval has been added. Accordingly, the following folder has been added to the list of properties for the Agent Collector service.

User Command Setting

- Functionality that collects Active Directory information has been extended. Accordingly, the following fields have been added:

Active Directory Overview (PI\_AD) record

- Cache % Hit (CACHE\_HIT)
- Cache Page Fault Stalls/sec (CACHE\_PAGE\_FAULT\_STALLS\_SEC)
- Cache Page Faults/sec (CACHE\_PAGE\_FAULTS\_SEC)
- Cache Size (CACHE\_SIZE)

- Kerberos Authentications (KERBEROS\_AUTHENTICATIONS)
- LDAP Bind Time (LDAP\_BIND\_TIME)
- Log Record Stalls/sec (LOG\_RECORD\_STALLS\_SEC)
- Log Threads Waiting (LOG\_THREADS\_WAITING)
- Log Writes/sec (LOG\_WTTITES\_SEC)
- NTLM Authentications (NTLM\_AUTHENTICATIONS)
- SAM Password Changes/sec (SAM\_PASSWORD\_CHANGES\_SEC)
- Table Open Cache % Hit (TABLE\_OPEN\_CACHE\_HIT)
- Table Open Cache Hits/sec (TABLE\_CACHE\_HITS\_SEC)
- Table Open Cache Misses/sec (TABLE\_OPEN\_CACHE\_MISSES\_SEC)
- Table Opens/sec (TABLE\_OPEN\_SEC)
- Zone Transfer Failure (ZONE\_TRANSFER\_FAILURE)
- Zone Transfer Request Received (ZONE\_TRANSFER\_REQUEST\_RECEIVED)
- Zone Transfer SOA Request Sent (ZONE\_TRANSFER\_SOA\_REQUEST\_SENT)
- Zone Transfer Success (ZONE\_TRANSFER\_SUCCESS)
- IPv6 is now supported. Accordingly, the following records have been added:
  - ICMP Version 6 Overview (PI\_ICM6)
  - IP Version 6 Overview (PI\_IP6)
  - TCP Version 6 Overview (PI\_TCP6)
  - UDP Version 6 Overview (PI\_UDP6)
- A function that automatically restarts the PFM service when it has stopped abnormally during operation has been added to PFM - Manager. Accordingly, the following folder has been added to the list of properties for the Agent Collector service:

Restart Configurations

## J.2 Changes in 08-11

- A function that creates one user data file from multiple user-created data files has been added to the `jpcuser` command.
- The function that collects Active Directory information has been extended. Accordingly, the following record has been added:

## PI\_AD record

An explanation about how to monitor Active Directory has also been added.

- The following messages have been added:

KAVF11316-W, KAVF11317-W, KAVF11404-W, KAVF11901-W, KAVF11902-W, KAVF11904-W, KAVF11905-W, KAVF11906-W, KAVF11907-W, KAVF11908-W, KAVF11909-W, KAVF11910-W, KAVF11911-W, KAVF11912-W, KAVF11913-W, KAVF11914-W, KAVF11915-W, KAVF11916-E, KAVF11917-E, KAVF11919-E, KAVF11920-E, KAVF11923-E, KAVF11924-E, KAVF11925-E, KAVF11926-E, KAVF11927-E, KAVF11928-E, KAVF11929-E, KAVF11930-E, KAVF11931-E, KAVF11932-E, KAVF11935-E, KAVF11941-E, KAVF11943-E, KAVF11948-I, KAVF11950-W, KAVF11951-W, KAVF11952-E, KAVF11953-W, KAVF11954-W, KAVF11959-E, KAVF11983-E, KAVF11984-E, KAVF11985-E, KAVF11986-W, KAVF11987-W, KAVF11988-W, KAVF11989-W, KAVF11990-W, KAVF11991-W, KAVF11992-W, KAVF11993-W, KAVF11994-W, KAVF11995-W, KAVF11996-W, KAVF11997-W

- The alarm table version for the solution set has changed from 8.00 to 8.11.
- The data model version has changed from 6.0 to 7.2.
- An example of using PFM - Agent for Platform to monitor performance has been added.
- Windows 2000 has been added as an applicable OS for PFM - Agent for Platform.
- A method for upgrading Store version 1.0 to Store version 2.0 has been added.
- A function that outputs action logs has been added.
- Information about the command that changes the performance data storage location has been added.
- A function that collects information about whether applications are running has been added. Accordingly, the following record has been added:

## PD\_APP record

- A function for collecting user-specific performance data such as information that is not provided by PFM - Agent for Platform and information specific to a machine or environment has been added. Accordingly, the following records have been added:

PD\_UPD record, PD\_UPDB record, PI\_UPI record, and PI\_UPIB record

- Performance Management information that the `jpccras` command collects has been added.
- The formulas for estimating memory requirements and disk space requirements have been changed.

- The following properties have been added.

Service name	Property
Agent Store	Period (Day)
	Period - Day Drawer (Week)
	Period - Hour Drawer (Day)
	Period - Minute Drawer (Day)
	Period - Month Drawer (Month)
	Period - Week Drawer (Week)
	Period - Year Drawer (Year)
Agent Collector	ADD AN APPLICATION MONITORING SETTING
	DELETE AN APPLICATION MONITORING SETTING
	Process[01-15] Kind
	Process[01-15] Name
	Process[01-15] Range
	User Defined Record DataMaxCount

- An explanation of how to use PFM - Agent for Platform on a virtual system has been added.

### J.3 Changes in version 08-00

- The product name has been changed to Job Management Partner 1/Performance Management - Agent Option for Platform.
- PFM - Web Console and PFM - Base have been added to the supported product list.
- PFM - View has been deleted from the supported product list.
- As the product configuration of Performance Management was changed, the list of files and folders of PFM - Agent for Platform was partially changed.
- Windows 2003 (x64) has been added as an OS under which PFM - Agent for Platform can run and as a monitoring target program; and Windows NT and Windows 2000 have been deleted.
- The Event Log (PD\_ELOG) record now supports historical reports and alarm

monitoring.

- The wrap-round file (jpclogw) method has been added as a method of saving the common message logs that are output by PFM - Agent for Platform, and as a result, one of the following methods can now be selected:
  - Sequential file (jpclog) method (conventional method)
  - Wrap-around file (jpclogw) method

- Windows event logs can now be collected using the jpcras command.

- A change has been made to start the collection data addition utility from **Start** in Windows, and the following records have been added as records for which user records can be collected:

PD\_ELOG record and PI\_WGRP record

- The alarm table version has been changed from 7.00 to 8.00.

- The data model version has been changed from 4.1 to 6.0. The table below shows the change details.

- A record has been added.

PI\_WGRP record

- The following records have been made reserved records:

PI\_ASP2 record, PI\_APLE record, PI\_ECCM record, PI\_EDS record,

PI\_EIPD record, PI\_EIPR record, PI\_EIPU record, PI\_EIMS record,

PI\_EINP record, PI\_EMCI record, PI\_EMTC record, PI\_EMTC record

- The following fields have been added to records:

Record name	Field name
PD record	User field
	Group field
PI_PID record	Group field

- The record size has been changed.

PD record and PI\_PID record

- Records that were reserved records in the IPF version are now supported:

PI\_IP record, PI\_TCP record, PI\_UDP record, PI\_ICMP record, PD\_SVC record, PD\_DEV record

- Notes have been added for the following record:

PD\_ELOG record

- Fields have been added:

Record name	Field name
System Overview (PI) record	% Physical Mem (PCT_PHYSICAL_MEMORY)
	Current Processes (CURRENT_PROCESSES)
	Current Threads (CURRENT_THREADS)
	Trans Pages RePurposed/sec (TRANS_PAGES_REPURPOSED_PER_SEC)
	Non Committed Mbytes (NON_COMMITTED_BYTES)
Used Physical Mem Mbytes (USED_PHYSICAL_MEMORY_BYTES)	
Logical Disk Overview (PI_LOGD) record	% Disk Usage (PCT_DISK_USAGE)
Process End Detail (PD_PEND) record	Elapsed Time (ELAPSED_TIME)

- Reserved fields have been released:

Record name	Field name
Processor Overview (PI_PCSR) record	% C1 Time (PCT_C1_TIME)
	% C2 Time (PCT_C2_TIME)
	% C3 Time (PCT_C3_TIME)
	% Idle Time (PCT_IDLE_TIME)

- Reservation has been released by changing the field name:

Record name	Field name
Processor Overview (PI_PCSR) record	C1 Trans/sec (PCT_C1_TRANSITIONS_PER_SEC)
	C2 Trans/sec (PCT_C2_TRANSITIONS_PER_SEC)
	C3 Trans/sec (PCT_C3_TRANSITIONS_PER_SEC)

- When an unsupported record collection event occurs, the KAVF11201-W message is now issued to the common log during the initial collection.
- The following messages have been deleted:  
KAVF11314-W and KAVF11404-W

- The following messages have been added:

KAVF111100-E, KAVF111101-E, KAVF11201-W, and KAVF11316-W

### J.4 Changes in version 07-00 (data model version 4.1)

- The data model version has been changed from 4.0 to 4.1. The table below shows the change details.

- Additions

Record name	Field name
AppleTalk Overview (PI_APLE)	Interval2 (INTERVAL2)
Exchange Internet Protocols (PI_EINP)	
Exchange MTA Connections (PI_EMTC)	
FTP Server Service Overview (PI_FTPM)	
Generic Data Interval (PI_GENI)	
Logical Disk Overview (PI_LOGD)	
NBT Overview (PI_NBT)	
Network Interface Overview (PI_NETI)	
Network Link IPX Overview (PI_LIPX)	
Network Link NetBIOS Overview (PI_LBIO)	
Network Link SPX Overview (PI_LSPX)	
Network Segment Overview (PI_NSEG)	
NNTP Commands (PI_NWSC)	
NNTP Server (PI_NWSS)	
Physical Disk Overview (PI_PHYD)	
Processor Overview (PI_PCSR)	
Server Work Queues Overview (PI_SVRQ)	
SMTP Server Service Overview (PI_SMT2)	
Web Service Overview (PI_WEB)	

- Changes

Record name	Field name	Change
Exchange Info Store Private (PI_EIPR)	Single Instance Ratio (SINGLE_INSTANCE_RATIO)	Format (float)
Exchange Info Store Public (PI_EIPU)	Single Instance Ratio (SINGLE_INSTANCE_RATIO)	Format (float)
Exchange MTA Performance (PI_EMATA)	Inbound Bytes Total (INBOUND_BYTES_TOTAL)	Format (double)
	Inbound Messages Total (INBOUND_MESSAGES_TOTAL)	Format (double)
	Outbound Bytes Total (OUTBOUND_BYTES_TOTAL)	Format (double)
	Outbound Messages Total (OUTBOUND_MESSAGES_TOTAL)	Format (double)
	Total Recipients Inbound (TOTAL_RECIPIENTS_INBOUND)	Format (double)
	Total Recipients Outbound (TOTAL_RECIPIENTS_OUTBOUND)	Format (double)
	Work Queue Bytes (WORK_QUEUE_BYTES)	Format (double)
Exchange MTA Connections (PI_EMTC)	Inbound Bytes Total (INBOUND_BYTES_TOTAL)	Format (double)
	Inbound Messages Total (INBOUND_MESSAGES_TOTAL)	Format (double)
	Outbound Bytes Total (OUTBOUND_BYTES_TOTAL)	Format (double)
	Outbound Messages Total (OUTBOUND_MESSAGES_TOTAL)	Format (double)
	Queue Bytes (QUEUE_BYTES)	Format (double)
	Total Recipients Inbound (TOTAL_RECIPIENTS_INBOUND)	Format (double)
	Total Recipients Outbound (TOTAL_RECIPIENTS_OUTBOUND)	Format (double)
Logical Disk Overview (PI_LOGD)	Total Size Mbytes (TOTAL_DISK_SIZE)	Format (double)
Process Detail (PD)	Private Kbytes (PRIVATE_BYTES)	Format (double)
	Page File Kbytes (PAGE_FILE_BYTES)	Format (double)

Record name	Field name	Change
	Page File Kbytes Peak (PAGE_FILE_BYTES_PEAK)	Format (double)
	Virtual Kbytes (VIRTUAL_BYTES)	Format (double)
	Virtual Kbytes Peak (VIRTUAL_BYTES_PEAK)	Format (double)
	Working Set Kbytes (WORKING_SET)	Format (double)
	Working Set Kbytes Peak (WORKING_SET_PEAK)	Format (double)
Process Detail Interval (PD_PDI)	Private Kbytes (PRIVATE_BYTES)	Format (double)
	Page File Kbytes (PAGE_FILE_BYTES)	Format (double)
	Page File Kbytes Peak (PAGE_FILE_BYTES_PEAK)	Format (double)
	Virtual Kbytes (VIRTUAL_BYTES)	Format (double)
	Virtual Kbytes Peak (VIRTUAL_BYTES_PEAK)	Format (double)
	Working Set Kbytes (WORKING_SET)	Format (double)
	Working Set Kbytes Peak (WORKING_SET_PEAK)	Format (double)
Process End Detail (PD_PEND)	Working Set Max Kbytes (WORKING_SET_MAX)	Format (double)
	Working Set Min Kbytes (WORKING_SET_MIN)	Format (double)
SMTP Server Service Overview (PI_SMT2)	Bytes Rcvd (BYTES_RECEIVED_CURR)	Format (double)
	Bytes Sent (BYTES_SENT_CURR)	Format (double)
	Bytes Xferd (BYTES_CURR)	Format (double)
	Msg Bytes (MSG_BYTES_CURR)	Format (double)
	Msg Bytes Rcvd (MSG_BYTES_RECEIVED_CURR)	Format (double)
	Msg Bytes Sent (MSG_BYTES_SENT_CURR)	Format (double)
	Total Bytes Rcvd (BYTES_RECEIVED_TOTAL)	Format (double)
	Total Bytes Sent (BYTES_SENT_TOTAL)	Format (double)
	Total Bytes Xferd (BYTES_TOTAL)	Format (double)
	Total Msg Bytes Rcvd (MSG_BYTES_RECEIVED_TOTAL)	Format (double)
	Total Msg Bytes Sent (MSG_BYTES_SENT_TOTAL)	Format (double)

Record name	Field name	Change
	Total Msg Bytes (MSG_BYTES_TOTAL)	Format (double)
System Overview (PI)	Available Mbytes (AVAILABLE_BYTES)	Format (double)
	Blocking Reqs Rejected (BLOCKING_REQUESTS_REJECTED)	Format (float)
	Cache Mbytes (CACHE_BYTES)	Format (double)
	Cache Mbytes Peak (CACHE_BYTES_PEAK)	Format (double)
	Commit Limit Mbytes (COMMIT_LIMIT)	Format (double)
	Committed Mbytes (COMMITTED_BYTES)	Format (double)
	Pool Nonpaged Failures (POOL_NONPAGED_FAILURES)	Format (float)
	Total Physical Mem Mbytes (TOTAL_PHYSICAL_MEMORY_KBYTES)	Format (double)
	Work Item Shortages (WORK_ITEM_SHORTAGES)	Format (float)
Web Proxy Server Cache Overview (PI_WPSC)	Active Refresh Bytes Rate (ACTIVE_REFRESH_BYTES_RATE)	Format (float)
	Active URL Refresh Rate (ACTIVE_URL_REFRESH_RATE)	Format (float)
	Bytes Committed Rate (BYTES_COMMITTED_RATE)	Format (float)
	Bytes Retrieved Rate (BYTES_RETRIEVED_RATE)	Format (float)
	Max URLs Cached (MAX_URLS_CACHED)	Format (double)
	Total Actively Refreshed URLs (TOTAL_ACTIVELY_REFRESHED_URLS)	Format (double)
	Total URLs Cached (TOTAL_URLS_CACHED)	Format (double)
	Total URLs Retrieved (TOTAL_URLS_RETRIEVED)	Format (double)
	URL Commit Rate (URL_COMMIT_RATE)	Format (float)
	URL Retrieve Rate (URL_RETRIEVE_RATE)	Format (float)
	URLs in Cache (URLS_IN_CACHE)	Format (double)
Web Service Overview (PI_WEB)	System Code Resident Bytes (SYSTEM_CODE_RESIDENT_BYTES)	Format (float)

## J.5 Changes in version 07-00

- The applicable OSs for PFM - Agent for Platform have been changed as shown in the table below:

Program name	Changes
PFM - Agent for Platform	<ul style="list-style-type: none"> <li>• Windows Server 2003 has been added.</li> <li>• Windows Server 2003 (IPF) has been added.</li> </ul>

- The multiple LAN connection function is now supported.
- The version of the alarm solution set has been changed from 6.70 to 7.00.
- The data model version has been changed from 3.0 to 4.0. The change details follow.
  - Additions

Record name	Field name
Active Server Pages (PI_ASP2)	Engine Flush Notifications (ENGINE_FLUSH_NOTIFICATIONS)
	In Mem Template Cache Hit Rate (IN_MEMORY_TEMPLATE_CACHE_HIT_RATE)
	In Mem Template Cached (IN_MEMORY_TEMPLATE_CACHED)
	Script Engine Cache Hit Rate (SCRIPT_ENGINE_CACHE_HIT_RATE)
Exchange Info Store Perf Data (PI_EIPD)	Appt Instance Creation Rate (APPOINTMENT_INSTANCE_CREATION_RATE)
	Appt Instance Deletion Rate (APPOINTMENT_INSTANCE_DELETION_RATE)
	Appt Instances Created (APPOINTMENT_INSTANCES_CREATED)
	Appt Instances Deleted (APPOINTMENT_INSTANCES_DELETED)
	FB Publish Count (FB_PUBLISH_COUNT)
	FB Publish Rate (FB_PUBLISH_RATE)
	IMAPI Commands Issued (IMAPI_COMMANDS_ISSUED)
	IMAPI Commands Issued Rate (IMAPI_COMMANDS_ISSUED_RATE)
	IMAPI Message Send Rate (IMAPI_MESSAGE_SEND_RATE)
	IMAPI Messages Sent (IMAPI_MESSAGES_SENT)

Record name	Field name
	Newsfeed Bytes Sent (NEWSFEED_BYTES_SENT)
	Newsfeed Bytes Sent/sec (NEWSFEED_BYTES_SENT_SEC)
	Newsfeed Inbound Rej Msgs (NEWSFEED_INBOUND_REJECTED_MESSAGES)
	Newsfeed Inbound Rej Msgs Rate (NEWSFEED_INBOUND_REJECTED_MSG_RATE)
	Newsfeed Messages Rcvd (NEWSFEED_MESSAGES_RECEIVED)
	Newsfeed Messages Rcvd Rate (NEWSFEED_MESSAGES_RECEIVED_RATE)
	Newsfeed Messages Sent (NEWSFEED_MESSAGES_SENT)
	Newsfeed Messages Sent/sec (NEWSFEED_MESSAGES_SENT_SEC)
	Newsfeed Outbound Rej Msgs (NEWSFEED_OUTBOUND_REJECTED_MESSAGES)
	NNTP Commands Issued (NNTP_COMMANDS_ISSUED)
	NNTP Commands Issued Rate (NNTP_COMMANDS_ISSUED_RATE)
	NNTP Current Outbound Conns (NNTP_CURRENT_OUTBOUND_CONNECTIONS)
	NNTP Failed Posts (NNTP_FAILED_POSTS)
	NNTP Failed Posts Rate (NNTP_FAILED_POSTS_RATE)
	NNTP Messages Posted (NNTP_MESSAGES_POSTED)
	NNTP Messages Posted Rate (NNTP_MESSAGES_POSTED_RATE)
	NNTP Messages Read (NNTP_MESSAGES_READ)
	NNTP Messages Read Rate (NNTP_MESSAGES_READ_RATE)
	NNTP Outbound Conns (NNTP_OUTBOUND_CONNECTIONS)
	Number of art index tbl rows exp (NUMBER_OF_ART_INDEX_TABLE_ROWS_EXP)
	POP3 Commands Issued (POP3_COMMANDS_ISSUED)
	POP3 Commands Issued Rate (POP3_COMMANDS_ISSUED_RATE)
	POP3 Messages Send Rate (POP3_MESSAGES_SEND_RATE)

Record name	Field name
	POP3 Messages Sent (POP3_MESSAGES_SENT)
	Recurring Appt Creation Rate (RECURRING_APPT_CREATION_RATE)
	Recurring Appt Deletion Rate (RECURRING_APPT_DELETION_RATE)
	Recurring Appt Modification Rate (RECURRING_APPT_MODIFICATION_RATE)
	Recurring Appts Created (RECURRING_APPTS_CREATED)
	Recurring Appts Deleted (RECURRING_APPTS_DELETED)
	Recurring Appts Modified (RECURRING_APPTS_MODIFIED)
	Recurring Master Appts Expanded (RECURRING_MASTER_APPTS_EXPANDED)
	Recurring Master Expansion Rate (RECURRING_MASTER_EXPANSION_RATE)
	Single Appt Creation Rate (SINGLE_APPT_CREATION_RATE)
	Single Appt Deletion Rate (SINGLE_APPT_DELETION_RATE)
	Single Appt Modification Rate (SINGLE_APPT_MODIFICATION_RATE)
	Single Appts Created (SINGLE_APPTS_CREATED)
	Single Appts Deleted (SINGLE_APPTS_DELETED)
	Single Appts Modified (SINGLE_APPTS_MODIFIED)
Exchange Info Store Private (PI_EIPR)	Local deliveries (LOCAL_DELIVERIES)
	Local delivery rate (LOCAL_DELIVERY_RATE)
	Total Count of Recoverable Items (TOTAL_COUNT_OF_RECOVERABLE_ITEMS)
	Total Size of Recoverable Items (TOTAL_SIZE_OF_RECOVERABLE_ITEMS)
Exchange Info Store Public (PI_EIPU)	Number of msgs exp frm pub folds (NUMBER_OF_MSG_EXP_FROM_PUBLIC_FOLD)
	HTTP/DEV Curr Pend Notification (HTTP_PER_DEV_CURR_PEND_NOTIFIC)

Record name	Field name
	HTTP/DEV Curr Subscriptions (HTTP_PER_DEV_CURR_SUBSCRIPTIONS)
	HTTP/DEV Curr Trans Locks (HTTP_PER_DEV_CURR_TRANS_LOCKS)
	HTTP/DEV Notify Requests/sec (HTTP_PER_DEV_NOTIFY_REQ_PER_SEC)
	HTTP/DEV Total Locks Created (HTTP_PER_DEV_TOTAL_LOCKS_CREATED)
	HTTP/DEV Total Notify Requests (HTTP_PER_DEV_TOTAL_NOTIFY_REQUESTS)
	HTTP/DEV Total Subs Created (HTTP_PER_DEV_TOTAL_SUBS_CREATED)
	HTTP/DEV Total Subs Expired (HTTP_PER_DEV_TOTAL_SUBS_EXPIRED)
	Replication Receive Queue Size (REPLICATION_RECEIVE_QUEUE_SIZE)
	Total Count of Recoverable Item (TOTAL_COUNT_OF_RECOVERABLE_ITEMS)
	Total Size of Recoverable Item (TOTAL_SIZE_OF_RECOVERABLE_ITEMS)
Exchange Internet Mail Service (PI_EIMS)	Total Failed Conversions (TOTAL_FAILED_CONVERSIONS)
	Total Inbound Kilobytes (TOTAL_INBOUND_KILOBYTES)
	Total Inbound Recipients (TOTAL_INBOUND_RECIPIENTS)
	Total Kilobytes Queued (TOTAL_KILOBYTES_QUEUED)
	Total Loops Detected (TOTAL_LOOPS_DETECTED)
	Total Messages Queued (TOTAL_MESSAGES_QUEUED)
	Total Outbound Kilobytes (TOTAL_OUTBOUND_KILOBYTES)
	Total Outbound Recipients (TOTAL_OUTBOUND_RECIPIENTS)
	Total Recipients Queued (TOTAL_RECIPIENTS_QUEUED)
	Total Successful Conversions (TOTAL_SUCCESSFUL_CONVERSIONS)

Record name	Field name
Exchange Internet Protocols (PI_EINP)	Incoming Queue Size (INCOMING_QUEUE_SIZE)
	Outgoing Queue Size (OUTGOING_QUEUE_SIZE)
	Outstanding Commands (OUTSTANDING_COMMANDS)
	Total Commands (TOTAL_COMMANDS)
Exchange MTA Connections (PI_EMTC)	Connector Index (CONNECTOR_INDEX)
	Cumulative Inbound Associations (CUMULATIVE_INBOUND_ASSOCIATIONS)
	Cumulative Outbound Associations (CUMULATIVE_OUTBOUND_ASSOCIATIONS)
	Current Inbound Associations (CURRENT_INBOUND_ASSOCIATIONS)
	Current Outbound Associations (CURRENT_OUTBOUND_ASSOCIATIONS)
	Failed Outbound Associations (FAILED_OUTBOUND_ASSOCIATIONS)
	Inbound Bytes Total (INBOUND_BYTES_TOTAL)
	Inbound Messages Total (INBOUND_MESSAGES_TOTAL)
	Inbound Reject Reason (INBOUND_REJECT_REASON)
	Inbound Rejected Total (INBOUND_REJECTED_TOTAL)
	Last Inbound Association (LAST_INBOUND_ASSOCIATION)
	Last Outbound Association (LAST_OUTBOUND_ASSOCIATION)
	Next Association Retry (NEXT_ASSOCIATION_RETRY)
	Oldest Message Queued (OLDEST_MESSAGE_QUEUED)
	Outbound Bytes Total (OUTBOUND_BYTES_TOTAL)
	Outbound Failure Reason (OUTBOUND_FAILURE_REASON)
	Outbound Messages Total (OUTBOUND_MESSAGES_TOTAL)
	Queue Bytes (QUEUE_BYTES)

Record name	Field name
	Rejected Inbound Associations (REJECTED_INBOUND_ASSOCIATIONS)
	Total Recipients Inbound (TOTAL_RECIPIENTS_INBOUND)
	Total Recipients Outbound (TOTAL_RECIPIENTS_OUTBOUND)
	Total Recipients Queued (TOTAL_RECIPIENTS_QUEUED)
Exchange MTA Performance (PI_EMPTA)	Deferred Delivery Msgs (DEFERRED_DELIVERY_MSGS)
	Inbound Bytes Total (INBOUND_BYTES_TOTAL)
	Inbound Messages Total (INBOUND_MESSAGES_TOTAL)
	Outbound Bytes Total (OUTBOUND_BYTES_TOTAL)
	Outbound Messages Total (OUTBOUND_MESSAGES_TOTAL)
	Total Failed Conversions (TOTAL_FAILED_CONVERSIONS)
	Total Loops Detected (TOTAL_LOOPS_DETECTED)
	Total Recipients Inbound (TOTAL_RECIPIENTS_INBOUND)
	Total Recipients Outbound (TOTAL_RECIPIENTS_OUTBOUND)
	Total Recipients Queued (TOTAL_RECIPIENTS_QUEUED)
	Total Successful Conversions (TOTAL_SUCCESSFUL_CONVERSIONS)
	Work Queue Bytes (WORK_QUEUE_BYTES)
FTP Server Service Overview (PI_FTPM)	FTP Service Uptime (FTP_SERVICE_UPTIME)
Internet Info Server Global (PI_IIS)	Active Flushed Entries (ACTIVE_FLUSHED_ENTRIES)
	BLOB Cache Flushes (BLOB_CACHE_FLUSHES)
	BLOB Cache Hits (BLOB_CACHE_HITS)
	BLOB Cache Hits % (PCT_BLOB_CACHE_HITS)
	BLOB Cache Misses (BLOB_CACHE_MISSES)
	Current BLOBs Cached (CURRENT_BLOBS_CACHED)

Record name	Field name
	Current File Cache Memory Usage (CURRENT_FILE_CACHE_MEMORY_USAGE)
	Current Files Cached (CURRENT_FILES_CACHED)
	Current URIs Cached (CURRENT_URIS_CACHED)
	File Cache Flushes (FILE_CACHE_FLUSHES)
	File Cache Hits (FILE_CACHE_HITS)
	File Cache Hits % (PCT_FILE_CACHE_HITS)
	File Cache Misses (FILE_CACHE_MISSES)
	Maximum File Cache Memory Usage (MAXIMUM_FILE_CACHE_MEMORY_USAGE)
	Total BLOB Cached (TOTAL_BLOB_CACHED)
	Total Files Cached (TOTAL_FILES_CACHED)
	Total Flushed BLOBs (TOTAL_FLUSHED_BLOBS)
	Total Flushed Files (TOTAL_FLUSHED_FILES)
	Total Flushed URIs (TOTAL_FLUSHED_URIS)
	Total URIs Cached (TOTAL_URIS_CACHED)
	URI Cache Hits (URI_CACHE_HITS)
	URI Cache Hits % (PCT_URI_CACHE_HITS)
	URI Cache Misses (URI_CACHE_MISSES)
	Logical Disk Overview (PI_LOGD)
Split IO/Sec (SPLIT_IO_PER_SEC)	
Physical Disk Overview (PI_PHYD)	% Idle Time (PCT_IDLE_TIME)
	Split IO/Sec (SPLIT_IO_PER_SEC)
Process Detail (PD)	Creating Process ID (PROCESS_ID)
	IO Data Bytes/sec (IO_DATA_BYTES_PER_SEC)
	IO Data Operations/sec (IO_DATA_OPERATIONS_PER_SEC)

Record name	Field name
	IO Other Bytes/sec (IO_OTHER_BYTES_PER_SEC)
	IO Other Operations/sec (IO_OTHER_OPERATIONS_PER_SEC)
	IO Read Bytes/sec (IO_READ_BYTES_PER_SEC)
	IO Read Operations/sec (IO_READ_OPERATIONS_PER_SEC)
	IO Write Bytes/sec (IO_WRITE_BYTES_PER_SEC)
	IO Write Operations/sec (IO_WRITE_OPERATIONS_PER_SEC)
Process Detail Interval (PD_PDI)	Creating Process ID (PROCESS_ID)
	IO Data Bytes/sec (IO_DATA_BYTES_PER_SEC)
	IO Data Operations/sec (IO_DATA_OPERATIONS_PER_SEC)
	IO Other Bytes/sec (IO_OTHER_BYTES_PER_SEC)
	IO Other Operations/sec (IO_OTHER_OPERATIONS_PER_SEC)
	IO Read Bytes/sec (IO_READ_BYTES_PER_SEC)
	IO Read Operations/sec (IO_READ_OPERATIONS_PER_SEC)
	IO Write Bytes/sec (IO_WRITE_BYTES_PER_SEC) IO Write Operations/sec (IO_WRITE_OPERATIONS_PER_SEC)
Processor Overview (PI_PCSR)	% C1 Time (PCT_C1_TIME)
	% C2 Time (PCT_C2_TIME)
	% C3 Time (PCT_C3_TIME)
	% Idle Time (PCT_IDLE_TIME)
	% C1 Transitions/sec (PCT_C1_TRANSITIONS_PER_SEC)
	% C2 Transitions/sec (PCT_C2_TRANSITIONS_PER_SEC)
	% C3 Transitions/sec (PCT_C3_TRANSITIONS_PER_SEC)
SMTP Server Service Overview (PI_SMT2)	Badm Msgs Bad Pickup File (BADMAILED_MSGS_BAD_PICKUP_FILE)
	Badm Msgs General Failure (BADMAILED_MSGS_GENERAL_FAILURE)

Record name	Field name
	Badm Msgs Hop Count Exceeded (BADMAILED_MSGS_HOP_COUNT_EXCEEDED)
	Badm Msgs NDR of DSN (BADMAILED_MSGS_NDR_OF_DSN)
	Badm Msgs No Recipients (BADMAILED_MSGS_NO_RECIPIENTS)
	Badm Msgs Triggered via Event (BADMAILED_MSGS_TRIGGERED_VIA_EVENT)
	Cat Addr lookup compl (CAT_ADDR_LOOKUP_COMPLETIONS)
	Cat Addr lookup compl/sec (CAT_ADDR_LOOKUP_COMPLETIONS_PER_SEC)
	Cat Addr lookups (CAT_ADDR_LOOKUPS)
	Cat Addr lookups not found (CAT_ADDR_LOOKUPS_NOT_FOUND)
	Cat Addr lookups/sec (CAT_ADDR_LOOKUPS_PER_SEC)
	Cat Catagor compl (CAT_CATAGOR_COMPLETED)
	Cat Catagor compl success (CAT_CATAGOR_COMPLETED_SUCCESSFULLY)
	Cat Catagor compl/sec (CAT_CATAGOR_COMPLETED_PER_SEC)
	Cat Catagor fail DS conn failure (CAT_CATAGOR_FAILED_DS_CONN_FAILURE)
	Cat Catagor fail DS logon fail (CAT_CATAGOR_FAILED_DS_LOGON_FAILURE)
	Cat Catagor fail non-retry err (CAT_CATAGOR_FAILED_NON-RETRY_ERROR)
	Cat Catagor fail Out Of Memory (CAT_CATAGOR_FAILED_OUT_OF_MEMORY)
	Cat Catagor fail retryable err (CAT_CATAGOR_FAILED_RETRYABLE_ERROR)
	Cat Catagor fail sink retry err (CAT_CATAGOR_FAILED_SINK_RETRY_ERROR)
	Cat Catagor in progress (CAT_CATAGOR_IN_PROGRESS)
	Cat LDAP bind failure (CAT_LDAP_BIND_FAILURE)
	Cat LDAP binds (CAT_LDAP_BINDS)

Record name	Field name
	Cat LDAP conn failures (CAT_LDAP_CONNECTION_FAILURES)
	Cat LDAP conns (CAT_LDAP_CONNECTIONS)
	Cat LDAP conns currently open (CAT_LDAP_CONNECTIONS_CURRENTLY_OPEN)
	Cat LDAP gen compl failures (CAT_LDAP_GENERAL_COMP_FAILURES)
	Cat LDAP paged srch compl fails (CAT_LDAP_PAGED_SEARCH_COMP_FAILURES)
	Cat LDAP paged srches (CAT_LDAP_PAGED_SEARCHES)
	Cat LDAP paged srch failure (CAT_LDAP_PAGED_SEARCH_FAILURE)
	Cat LDAP paged srches compl (CAT_LDAP_PAGED_SEARCHES_COMPLETED)
	Cat LDAP srch compl fail (CAT_LDAP_SEARCH_COMPLETION_FAILURE)
	Cat LDAP srch fail (CAT_LDAP_SEARCH_FAILURES)
	Cat LDAP srches (CAT_LDAP_SEARCHES)
	Cat LDAP srches abandoned (CAT_LDAP_SEARCHES_ABANDONED)
	Cat LDAP srches completed (CAT_LDAP_SEARCHES_COMPLETED)
	Cat LDAP srches completed/sec (CAT_LDAP_SEARCHES_COMPLETED_PER_SEC)
	Cat LDAP srches pending compl (CAT_LDAP_SEARCHES_PEND_COMPLETION)
	Cat LDAP srches/sec (CAT_LDAP_SEARCHES_PER_SEC)
	Cat mailmsg dup collisions (CAT_MAILMSG_DUPLICATE_COLLISIONS)
	Cat Msgs aborted (CAT_MESSAGES_ABORTED)
	Cat Msgs bifurcated (CAT_MESSAGES_BIFURCATED)
	Cat Msgs Categorized (CAT_MESSAGES_CATEGORIZED)
	Cat Msgs submitted (CAT_MESSAGES_SUBMITTED)

Record name	Field name
	Cat Msgs submitted/sec (CAT_MESSAGES_SUBMITTED_PER_SEC)
	Cat Recip after categor (CAT_RECIPIENTS_AFTER_CATEGOR)
	Cat Recip before categor (CAT_RECIP_BEFORE_CATEGOR)
	Cat Recip in categor (CAT_RECIP_IN_CATEGORIZATION)
	Cat Recip NDRd ambiguous addr (CAT_RECIP_NDRD_AMBIGUOUS_ADDRESS)
	Cat Recip NDRd by categor (CAT_RECIP_NDRD_BY_CATEGORIZER)
	Cat Recip NDRd fwd loop (CAT_RECIP_NDRD_FORWARDING_LOOP)
	Cat Recip NDRd illegal addr (CAT_RECIP_NDRD_ILLEGAL_ADDRESS)
	Cat Recip NDRd sink recip err (CAT_RECIP_NDRD_SINK_RECIP_ERRORS)
	Cat Recip NDRd unresolved (CAT_RECIP_NDRD_UNRESOLVED)
	Cat Senders unresolved (CAT_SENDERS_UNRESOLVED)
	Cat Senders with ambiguous addr (CAT_SENDERS_WITH_AMBIGUOUS_ADDRESS)
	Categorizer Queue Length (CATEGORIZER_QUEUE_LENGTH)
	Current Msgs in Local Delivery (CURRENT_MESSAGES_IN_LOCAL_DELIVERY)
	Msgs Currently Undeliverable (MESSAGES_CURRENTLY_UNDELIVERABLE)
	Msgs Pending Routing (MESSAGES_PENDING_ROUTING)
	Pickup Direct Msgs Retr Total (PICKUP_DIRECT_MSGS_RETRI_TOTAL)
	Pickup Direct Msgs Retr/sec (PICKUP_DIRECT_MSGS_RETRI_PER_SEC)
	Total DSN Failures (TOTAL_DSN_FAILURES)
	Total msgs submitted (TOTAL_MESSAGES_SUBMITTED)
Web Service Overview (PI_WEB)	Copy Requests/Sec (COPY_REQUESTS_PER_SEC)

Record name	Field name
	Lock Requests/Sec (LOCK_REQUESTS_PER_SEC)
	Locked Errors/sec (LOCKED_ERRORS_PER_SEC)
	Mkcol Requests/sec (MKCOL_REQUESTS_PER_SEC)
	Move Requests/sec (MOVE_REQUESTS_PER_SEC)
	Options Requests/Sec (OPTIONS_REQUESTS_PER_SEC)
	Propfind Requests/sec (PROPFIND_REQUESTS_PER_SEC)
	Proppatch Requests/sec (PROPPATCH_REQUESTS_PER_SEC)
	Search Requests/sec (SEARCH_REQUESTS_PER_SEC)
	Service Uptime (SERVICE_UPTIME)
	Total Copy Requests (TOTAL_COPY_REQUESTS)
	Total Lock Requests (TOTAL_LOCK_REQUESTS)
	Total Locked Errors (TOTAL_LOCKED_ERRORS)
	Total Mkcol Requests (TOTAL_MKCOL_REQUESTS)
	Total Move Requests (TOTAL_MOVE_REQUESTS)
	Total Options Requests (TOTAL_OPTIONS_REQUESTS)
	Total Propfind Requests (TOTAL_PROPFIND_REQUESTS)
	Total Proppatch Requests (TOTAL_PROPPATCH_REQUESTS)
	Total Search Requests (TOTAL_SEARCH_REQUESTS)
	Total Unlock Requests (TOTAL_UNLOCK_REQUESTS)
	Trace Requests/sec (TRACE_REQUESTS_PER_SEC)
	Unlock Requests/sec (UNLOCK_REQUESTS_PER_SEC)

- Changes

Record name	Field name	Changes
AppleTalk Overview (PI_APPLE)	Instance (INSTANCE)	Description, format
Content Index Detail (PD_CIND)	Instance (INSTANCE)	Description, format

<b>Record name</b>	<b>Field name</b>	<b>Changes</b>
Content Index Filter Detail (PD_CINF)	Instance (INSTANCE)	Description, format
Exchange Internet Protocols (PI_EINP)	Instance (INSTANCE)	Description, format
Exchange MTA Connections (PI_EMTC)	Instance (INSTANCE)	Description, format
FTP Server Service Overview (PI_FTPM)	Instance (INSTANCE)	Description, format
Logical Disk Overview (PI_LOGD)	Instance (INSTANCE)	Description, format
NBT Overview (PI_NBT)	Instance (INSTANCE)	Format
Network Interface Overview (PI_NETI)	Instance (INSTANCE)	Description, format
Network Link IPX Overview (PI_LIPX)	Instance (INSTANCE)	Description, format
Network Link NetBIOS Overview (PI_LBIO)	Instance (INSTANCE)	Description, format
Network Link SPX Overview (PI_LSPX)	Instance (INSTANCE)	Description, format
Network Segment Overview (PI_NSEG)	Instance (INSTANCE)	Description, format
NNTP Commands (PI_NWSC)	Instance (INSTANCE)	Description, format
NNTP Server (PI_NWSS)	Instance (INSTANCE)	Description, format
Page File Detail (PD_PAGEF)	Instance (INSTANCE)	Description, format
Physical Disk Overview (PI_PHYD)	ID (INSTANCE)	Description, format
Process Detail (PD)	Program (INSTANCE)	Description
Process Detail Interval (PD_PDI)	Program (INSTANCE)	Description
Process End Detail (PD_PEND)	Program (PROCESS_NAME)	Description
Processor Overview (PI_PCSR)	Instance (INSTANCE)	Description, format

Record name	Field name	Changes
Server Work Queues Overview (PI_SVRQ)	Instance (INSTANCE)	Description, format
SMTP Server Service Overview (PI_SMT2)	Instance (INSTANCE)	Description, format
System Summary Overview (PI)	--	Change
Web Service Overview (PI_WEB)	Instance (INSTANCE)	Description, format

Legend:

--: Not applicable

- A function for starting PFM - Agent in the standalone mode is now supported.
- An installation log file for outputting errors that occur during installation has been added.
- A change has been made so that the creation of the Store database index file, which used to be executed during the Store service startup, is now executed during version upgrading or database restoration.
- The following messages have been added:  
KAVF11405-W, KAVF11406-W, and KAVF11407-E
- The following property has been added:

Service name	Property
Agent Collector	Data Model Version

- The following properties have been deleted:

Service name	Property
Agent Store	All beginning with Copyright Version under Network Services
Agent Collector	Version under Network Services

---

## K. Glossary

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### **action**

The operation that is automatically executed by Performance Management when the monitored data reaches the threshold. The following types of actions are available:

- E-mail transmission
- Command execution
- SNMP trap issuance
- JP1 event issuance

### **Action Handler**

One of the PFM - Manager or PFM - Base services. It is a service for executing an action.

### **administrative tools**

Various types of commands and GUI functions that are used for checking service statuses and manipulating performance data. The following operations can be performed:

- Displaying service configuration and status
- Saving and restoring performance data
- Exporting of performance data to a text file
- Erasing of performance data

### **Agent**

The PFM - Agent service that collects performance data.

### **Agent Collector**

One of the PFM - Agent services. It is a service for collecting performance data and evaluating performance data based on a threshold value that is set in an alarm.

### **Agent Store**

One of the PFM - Agent services. It is a service for storing performance data. The Agent Store service uses a database for recording performance data. Each PFM - Agent has its own Agent Store service.

### **alarm**

Information that defines the action to be taken or the event message to be issued when the monitored data reaches the threshold.

### **alarm table**

A table into which one or more alarms are collected and which defines the following types of information:

- Objects to be monitored (Process, TCP, WebService, or the like)
- Information to be monitored (CPU usage, number of bytes received per second, or the like)
- Monitoring condition (threshold)

### **binding**

The operation of associating an alarm with an agent. Once binding occurs, when the performance data collected by the agent reaches the threshold defined in the alarm, the user can be notified.

### **collection data addition utility**

A facility for specifying the performance data to be stored in a user record. You execute the collection data addition utility from the **Start** menu in Windows.

### **Correlator**

One of the PFM - Manager services. It is a service for controlling event delivery among services. When the alarm status being monitored by this service exceeds the threshold, this service sends an alarm event and an agent event to the Trap Generator service and PFM - Web Console.

### **database ID**

An ID that is assigned to each record in PFM - Agent that indicates the database for storing records. A database ID indicates the type of records to be stored in the database. The following database IDs are used:

- **PI**: Indicates a database for records of the **PI** record type.
- **PD**: Indicates a database for records of the **PD** record type.

### **data model**

A general term for records and fields that each PFM - Agent has. Data models are managed according to version.

### **drilldown report**

A report that is associated with a report or report field. You use a drilldown report to display the detailed information or related information of a report.

### **field**

A set of performance data that comprises a record.

**historical report**

A report indicating the status of the monitoring target from the past to the present.

**instance**

In this manual, the term *instance* is used in the following ways:

- To indicate a recording format for records

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*; and each line inside a record is called an *instance*.

- To indicate a PFM - Agent startup method

When a single agent monitors the monitoring targets on the same host, it is called a *single-instance agent*. In contrast, when the monitoring targets support multiple instances, each agent can monitor each monitoring target instance. This is called a *multi-instance agent*. Each agent of a multi-instance agent is called an *instance*.

**lifetime**

The duration in which the integrity of the performance data collected into each record can be guaranteed.

**Master Manager**

One of the PFM - Manager services. It is the main service of PFM - Manager.

**Master Store**

One of the PFM - Manager services. It is a service for managing the alarm events issued by each PFM - Agent. The Master Store service uses a database for holding event data.

**monitoring template**

Predefined alarms and reports provided in PFM - Agent. The monitoring template enables you to easily prepare for monitoring the operating status of PFM - Agent without writing any complicated definitions.

**multi-instance record**

A record that is recorded in multiple lines. Such records have a specific ODBC key field.

See *Instance*.

**Name Server**

One of the PFM - Manager services. It is a service for managing the service configuration information inside a system.

### **ODBC key fields**

Indicates the ODBC key fields that are necessary for using an SQL statement in PFM - Manager or PFM - Base to utilize the record data stored in the Store database. Some ODBC key fields are common to all records, while others are unique to some records.

### **PD record type**

See *Product Detail record type*.

### **performance data**

Resource usage data collected from a monitoring target system.

### **Performance Management**

A general term for a group of software programs necessary for monitoring and analyzing issues related to system performance. Performance Management consists of the following five program products:

- PFM - Manager
- PFM - Web Console
- PFM - Base
- PFM - Agent
- PFM - RM

### **PFM - Agent**

One of the program products comprising Performance Management. PFM - Agent that is equivalent to a system-monitoring facility. Various types of PFM - Agent are available according to the applications, databases, and OSs to be monitored. PFM - Agent has the following functions:

- Monitoring of the performance of the monitoring target
- Collection and recording of data from the monitoring target

### **PFM - Base**

One of the program products comprising Performance Management. PFM - Base provides the basic functions for Performance Management to monitor operations. It is a prerequisite program product for PFM - Agent. PFM - Base provides the following functionality:

- Management tools such as various types of commands
- Common functions needed for linking Performance Management to other systems

**PFM - Manager**

One of the program products comprising Performance Management. PFM - Manager is equivalent to a manager facility and has the following functions:

- Management of Performance Management program products
- Management of events

**PFM - Manager name**

A name that identifies the field stored in the Store database. This name is used for specifying a field in a command.

**PFM - View name**

The alias of a PFM - Manager name. The PFM - View name is more intuitive than the PFM - Manager name. For example, the PFM - View name of the PFM - Manager name `INPUT_RECORD_TYPE` is `Record Type`. The PFM - View names are useful when specifying fields on the GUI of PFM - Web Console.

**PFM - Web Console**

One of the program products comprising Performance Management. PFM - Web Console provides the web application server functions necessary for centrally monitoring the Performance Management system from a web browser. PFM - Web Console has the following functions:

- GUI display
- Integrated monitoring and management functions
- Report and alarm definition

**PI record type**

See *Product Interval record type*.

**PL record type**

See *Product Log record type*.

**Product Detail record type**

The record type that stores the performance data that indicates the system status at a given point in time, such as detailed information on the processes that are currently active. Use the `PD` record type when you want to determine the system statuses at a given point in time, such as those listed below:

- System's operating status
- Capacity of the file system currently being used

### **product ID**

The 1-byte identifier that indicates the Performance Management program to which the service belongs. It is part of a service ID.

### **Product Interval record type**

The record type that stores the performance data for a specific duration (interval), such as the number of active processes during every minute. Use the `PI` record type when you want to analyze the changes and trends in the system status over time, such as those listed below:

- Trend in the number of system calls that occurred within a specific time span
- Trend in the capacity of the file system being used

### **Product Log record type**

The record type that stores the log information on applications that are being executed or databases being used on UNIX.

### **real-time report**

A report indicating the current status of the monitoring target.

### **record**

A format for storing collected performance data. The record type differs according to each database of the Store database.

### **report**

A report defines the information to be used when graphically displaying the performance data collected by PFM - Agent. A report mainly defines the following types of information:

- Records to be displayed in a report
- Performance data display items
- Performance data display format (table, graph, or the like)

### **service ID**

A unique ID assigned to the service of a Performance Management program. For example, to use a command to check the system configuration of Performance Management or to back up the performance data of individual agents, you specify the service ID of the Performance Management program and execute the command. The format of the service ID differs depending on whether the product name display functionality is enabled. For details about the service ID format, see the chapter explaining the Performance Management functions in the manual *Job Management Partner 1/Performance Management Planning and Configuration Guide*.

**single-instance record**

A record that is recorded in a single line. Such records do not have a specific ODBC key field.

See *Instance*.

**stand-alone mode**

The mode in which PFM - Agent is running alone. Even when the Master Manager service and Name Server service of PFM - Manager cannot be started because of an error, you can start PFM - Agent alone and collect performance data.

**status management function**

A function for managing the statuses of all services that run on PFM - Manager and PFM - Agent. The status management function enables the system administrator to correctly determine the service startup and stop statuses at each host, making it possible to take the appropriate error recovery measures.

**Store database**

The database that stores the performance data collected by the Agent Collector service.

**Trap Generator**

One of the PFM - Manager services. It is a service that issues SNMP traps.

**user-defined record**

A user-specified record for storing performance data that is not provided by default. When a user-defined record is specified, the collected performance data can be monitored from PFM - Web Console. The following types of user records are available:

- Application Summary (PD\_APP) record
- Generic Data Detail (PD\_GEND) record
- Generic Data Interval (PI\_GENI) record
- Event Log (PD\_ELOG) record
- User Data Detail (PD\_UPD) record
- User Data Detail - Extended (PD\_UPDB) record
- User Data Interval (PI\_UPI) record
- User Data Interval - Extended (PI\_UPIB) record
- Workgroup Summary (PI\_WGRP) record

**workgroup**

The unit in which PFM - Agent for Platform monitors the processes being executed. A

workgroup can be specified in the following units:

- Windows user
- Windows group
- Programs executed by a process

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