

**JP1 Version 12 for Windows Systems**

**JP1/Performance Management - Agent Option for  
Platform Description, User's Guide and Reference**

**3021-3-D83-10(E)**

## Notices

### ■ Relevant program products

For details about the applicable OS versions, and the service packs and patches required for JP1/Performance Management - Agent Option for Platform, see the *Release Notes*.

*JP1/Performance Management - Manager (for Windows Server 2012, Windows Server 2016, Windows Server 2019):*

P-2A2C-AACL JP1/Performance Management - Manager 12-50

The above product includes the following:

P-CC2A2C-5ACL JP1/Performance Management - Manager 12-50

P-CC2A2C-5RCL JP1/Performance Management - Web Console 12-50

*JP1/Performance Management - Manager (for CentOS 6 (x64), CentOS 7, CentOS 8, Linux 6 (x64), Linux 7, Linux 8, Oracle Linux 6 (x64), Oracle Linux 7, Oracle Linux 8, SUSE Linux 12, SUSE Linux 15):*

P-812C-AACL JP1/Performance Management - Manager 12-50

The above product includes the following:

P-CC812C-5ACL JP1/Performance Management - Manager 12-50

P-CC812C-5RCL JP1/Performance Management - Web Console 12-50

*JP1/Performance Management - Agent Option for Platform (for Windows Server 2012, Windows Server 2016, Windows Server 2019):*

P-2A2C-ACCL JP1/Performance Management - Agent Option for Platform 12-50

The above product includes the following:

P-CC2A2C-FCCL JP1/Performance Management - Agent Option for Platform 12-50

P-CC2A2C-AJCL JP1/Performance Management - Base 12-00

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## ■ Microsoft product name abbreviations

This manual uses the following abbreviations for Microsoft product names.

Abbreviation		Full name or meaning
Exchange Server		Microsoft(R) Exchange Server
IIS		Microsoft(R) Internet Information Services
Internet Explorer		Windows(R) Internet Explorer(R)
Visual C++		Microsoft(R) Visual C++(R)
Visual Studio		Microsoft(R) Visual Studio(R)
Win32		Win32(R)
Windows Server 2012	Windows Server 2012	Microsoft(R) Windows Server(R) 2012 Datacenter
		Microsoft(R) Windows Server(R) 2012 Standard

Abbreviation		Full name or meaning
Windows Server 2012	Windows Server 2012 R2	Microsoft(R) Windows Server(R) 2012 R2 Datacenter
		Microsoft(R) Windows Server(R) 2012 R2 Standard
Windows Server 2016		Microsoft(R) Windows Server(R) 2016 Datacenter
		Microsoft(R) Windows Server(R) 2016 Standard
Windows Server 2019		Microsoft(R) Windows Server(R) 2019 Datacenter
		Microsoft(R) Windows Server(R) 2019 Standard
WSFC		Microsoft(R) Windows Server(R) Failover Cluster

Windows Server 2012, Windows Server 2016, and Windows Server 2019 may be referred to collectively as *Windows*.

### ■ Issued

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## Summary of amendments

The following table lists changes in this manual (3021-3-D83-10(E)) and product changes related to this manual.

Changes	Location
None.	--

Legend:

--: Not applicable

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

# Preface

This manual explains the features of JP1/Performance Management - Agent Option for Platform, and the records it collects.

## ■ Intended readers

This manual describes JP1/Performance Management. It is intended for the following readers:

- Users who are interested in designing and building an operation monitoring system
- Users who are interested in defining conditions for collecting performance data
- Users who are interested in defining reports and alarms
- Users who are interested in referencing performance data that is collected for the purpose of system monitoring
- Users who are interested in using the monitoring results to examine measures to improve a system and to provide instructions for such measures

This manual assumes that the reader is knowledgeable about the operation of the monitored systems and is familiar with their operating systems.

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

- *JP1/Performance Management Planning and Configuration Guide*
- *JP1/Performance Management User's Guide*
- *JP1/Performance Management Reference*

## ■ Organization of this manual

This manual is organized into the parts listed below. Note that this manual applies when the operating system (OS) on the host where JP1/Performance Management - Agent Option for Platform is installed is Windows. 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, commands, and messages associated with 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.

## ■ Conventions: Diagrams

This manual uses the following conventions in diagrams:

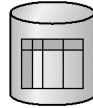
● Computer



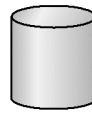
● Server



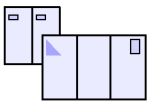
● Database



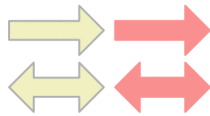
● Shared disk or local disk



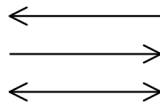
● Host center



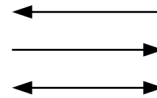
● Data flow



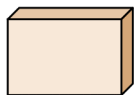
● Control flows



● Other flows



● Program



● I/O operation



● Window



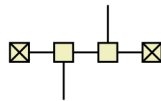
● Processing flow



● WAN (Wide Area Network)



● LAN (Local Area Network)



● Email



● Cell phone



● Problems



## ■ Conventions: Fonts and symbols

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

Text formatting	Convention
<b>Bold</b>	Bold characters indicate text in a window, other than the window title. Such text includes menus, menu options, buttons, radio box options, or explanatory labels. For example: <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>
<i>Italic</i>	Italic characters indicate a placeholder for some actual text to be provided by the user or system. For example: <ul style="list-style-type: none"> <li>Write the command as follows: <code>copy source-file target-file</code></li> </ul>

Text formatting	Convention
<i>Italic</i>	<ul style="list-style-type: none"> <li>The following message appears: A file was not found. (<i>file = file-name</i>)</li> </ul> <p>Italic characters are also used for emphasis. For example:</p> <ul style="list-style-type: none"> <li>Do <i>not</i> delete the configuration file.</li> </ul>
Monospace	<p>Monospace characters indicate text that the user enters without change, or text (such as messages) output by the system. For example:</p> <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>

The following table explains the symbols used in this manual:

Symbol	Convention
	In syntax explanations, a vertical bar separates multiple items, and has the meaning of OR. For example: A   B   C means A, or B, or C.
{ }	In syntax explanations, curly brackets indicate that only one of the enclosed items is to be selected. For example: { A   B   C } means only one of A, or B, or C.
[ ]	In syntax explanations, square brackets indicate that the enclosed item or items are optional. For example: [A] means that you can specify A or nothing. [B   C] means that you can specify B, or C, or nothing.
...	In coding, an ellipsis (. . .) indicates that one or more lines of coding have been omitted. In syntax explanations, an ellipsis indicates that the immediately preceding item can be repeated as many times as necessary. For example: A, B, B, . . . means that, after you specify A, B, you can specify B as many times as necessary.
( )	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
×	Multiplication sign
÷	Division sign

## ■ 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*.

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# 1

## Overview of PFM - Agent for Platform

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

## 1.1 Features of PFM - Agent for Platform

---

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.



### 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 (remote 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.

If you need to perform remote monitoring or to collect and manage performance data for multiple monitored hosts, consider installing PFM - RM for Platform.

### 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:

- Displaying the operating status of Windows  
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 [8. 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 how to manage operation monitoring data in the *JPI/Performance Management User's Guide*.

## 1.1.4 Report 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 *JP1/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 *JP1/Performance Management User's Guide*. For details about the monitoring template, see [7. Monitoring Templates](#).

# 2

## Performance Monitoring

This chapter describes the use of PFM - Agent for Platform to monitor performance.



## 2.1 Overview of performance monitoring

---

- Performance data collection methods

For details about performance data collection methods, see the chapter that describes the performance management functions in the *JPI/Performance Management Planning and Configuration Guide*.

For details about the performance data values that are collected, see [8. 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 *JPI/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 *JPI/Performance Management User's Guide*.

### 2.1.1 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:

- 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.

## 2.1.2 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.

## 2.1.3 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.

## 2.2 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*. For details about how to collect user-defined records, see 6. *User-Defined Record Collection*.

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 2–1: 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		
64-bit performance console counter information	PD_GD64 record		
	PI_GI64 record		
Event log information	PD_ELOG record		
Workgroup information	PI_WGRP record		
Process operating status information	PD_APP2 record		PFM - Web Console
	PD_APPD record		
	PD_APS record		
	PD_APSI record		
	PD_ASVC record		
Application operating status information	PD_APP record		
User-specific performance data	PD_UPD record		
	PD_UPDB record		
	PI_UPI record		
	PI_UPIB record		
	PI_XUI1 record		
	PI_XUI2 record		
	PI_XUI3 record		
	PI_XUI4 record		
PI_XUI5 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.

## 2.2.1 32-bit performance console counter information

In Generic Data Detail (PD\_GEND) and Generic Data Interval (PI\_GENI) records for PFM - Agent for Platform, performance data other than defined fields can be collected as 32-bit 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.

- **Performance > Monitor Tools > Performance Monitor** in the Performance Monitor window
- **Data Collector Sets** in the Performance Monitor 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 2–2: 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 *JPI/Performance Management Planning and Configuration Guide*.

## 2.2.2 64-bit performance console counter information

PFM - Agent for Platform can collect 64-bit performance console counters as performance information from fields other than those defined in the Generic Data Detail64 (PD\_GD64) and Generic Data Interval64 (PI\_GI64) records.

User-defined records that can be defined as Generic Data Detail64 (PD\_GD64) and Generic Data Interval64 (PI\_GI64) records are similar to the information that is displayed in the following windows in Windows.

- **Performance > Monitor Tools > Performance Monitor** in the Performance Monitor window
- **Set Data Collector** in the Performance Monitor window

Because the Generic Data Detail64 (PD\_GD64) and Generic Data Interval64 (PI\_GI64) records have different record types as shown below, use them for their intended purpose.

Table 2–3: Generic Data Detail64 and Generic Data Interval64 record types

Record name	Record type	Purpose
Generic Data Detail64 (PD_GD64)	PD record type	Used for determining the system status at a given point in time.
Generic Data Interval64 (PI_GI64)	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 that describes the functions of Performance Management in the *JPI/Performance Management Planning and Configuration Guide*.

## 2.2.3 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.

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.

## 2.2.4 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.

## 2.2.5 Process operating status information

The following records are used to collect and manage information about whether processes are operating under specified conditions and whether the number of processes is the expected number or less:

- Application Summary Extension (PD\_APP2)
- Application Process Detail (PD\_APPD)
- Application Process Overview (PD\_APS)
- Application Process Interval (PD\_APSI)
- Application Service Overview (PD\_ASVC)

You can specify the processes to be monitored in PFM - Web Console.

## 2.2.6 Application operating status information

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.

## 2.2.7 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 seven types of PI records and two types of PD records that can store user-specific performance data.

- User Data Detail (PD\_UPD)
- User Data Detail - Extended (PD\_UPDB)
- User Data Interval (PI\_UPI)
- User Data Interval - Extended (PI\_UPIB)
- User Data Interval - Expanded 1 (PI\_XUI1)
- User Data Interval - Expanded 2 (PI\_XUI2)
- User Data Interval - Expanded 3 (PI\_XUI3)
- User Data Interval - Expanded 4 (PI\_XUI4)
- User Data Interval - Expanded 5 (PI\_XUI5)

This section describes how to collect user-defined records.

## 2.3 Overview of operations on virtualized systems

---

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

### 2.3.1 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.

### 2.3.2 Objectives of performance monitoring on virtualized systems

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.

### 2.3.3 System resources most in need of performance monitoring on virtualized systems

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.

### 2.3.4 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. Examples of such systems include VMware/Hyper-V, Hitachi Compute Blade logical partitioning feature, 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.

*Note:*

Because the host OS for VMware is a special OS for managing virtualized functionality, application operation is not guaranteed. Because Hitachi Compute Blade logical partitioning feature 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.

### 2.3.5 Setting up PFM - Agent for Platform in 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.



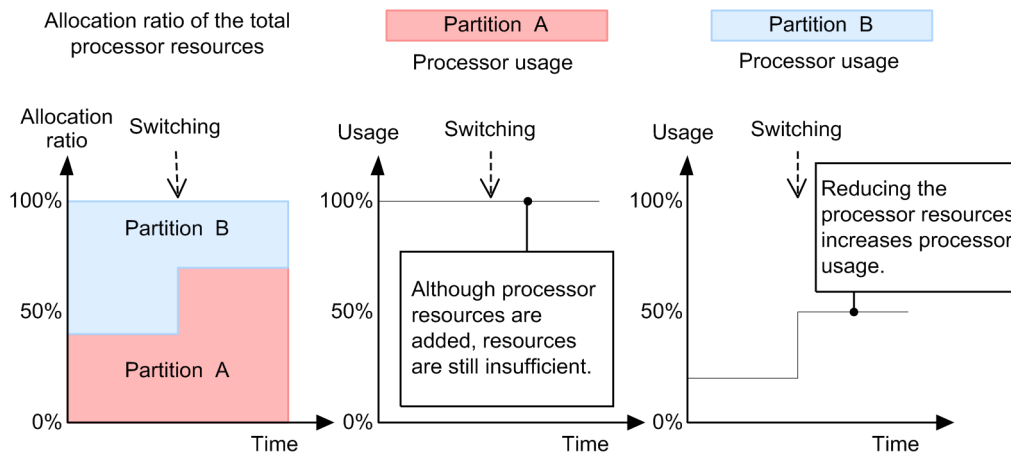
## 2.3.6 Examples of using Agent for Platform - PFM in a virtualized system: Determining whether to change virtualized system settings

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.

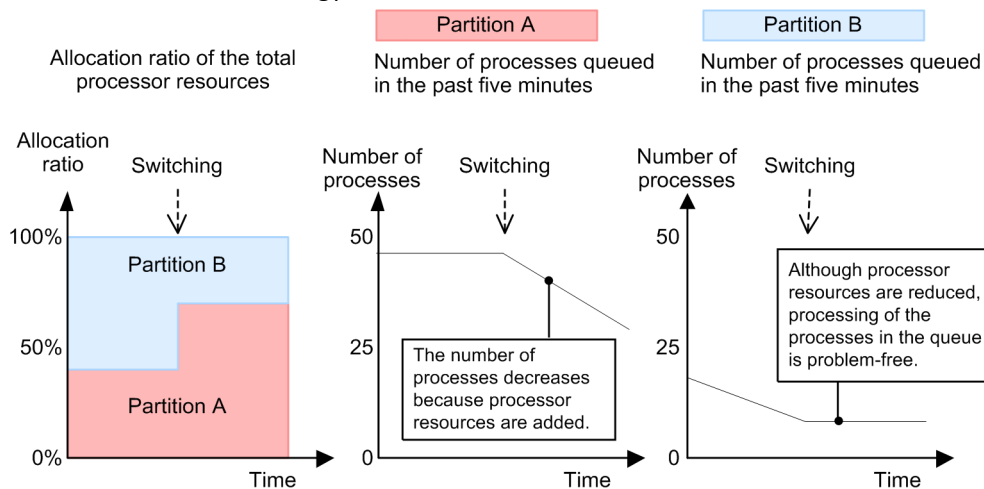
Figure 2–1: Case in which processor resource allocation is not sufficient (during processor usage monitoring)



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 2–2: 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.

## 2.3.7 Examples of using Agent for Platform - PFM In a virtualized system: Determining whether additional physical resources are needed

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

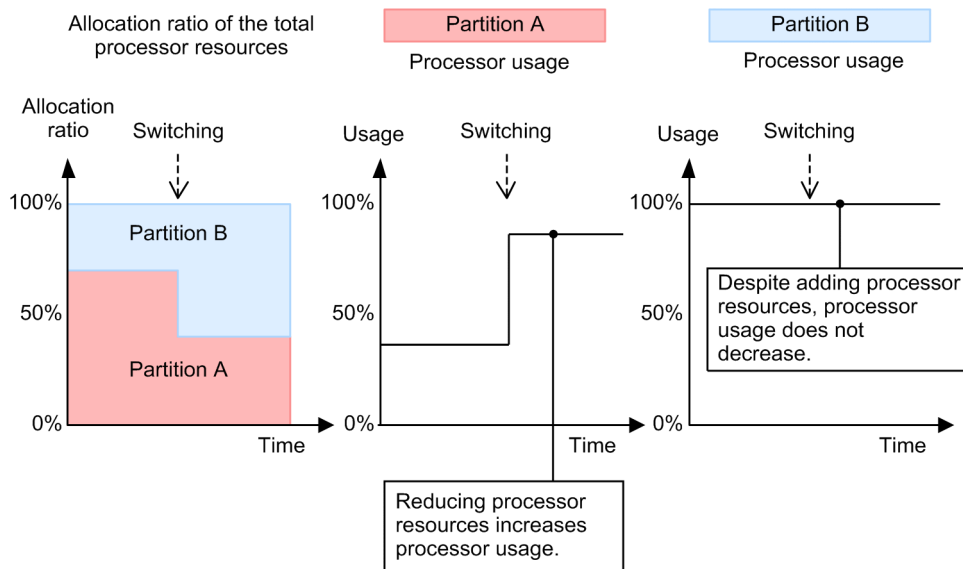
Note, however, that, even when a single guest OS or logical partition is under high load on a virtualized system, the system-wide load might seem low. Therefore, check whether all guest operating systems or all logical partitions are under high load.

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 2–3: 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.

## 2.3.8 Notes regarding usage of PFM - Agent for Platform on virtualized systems

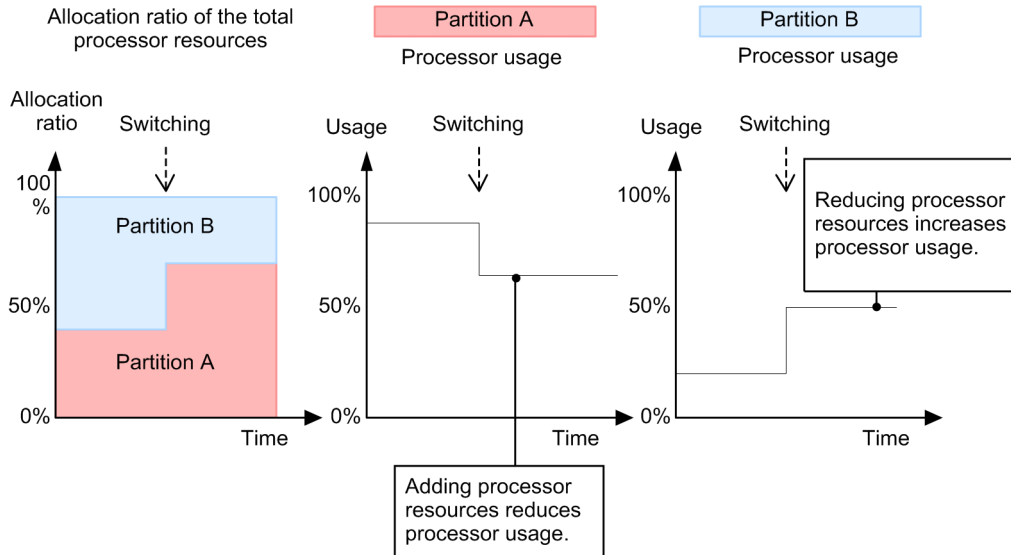
The performance data collected by PFM - Agent for Platform in a virtualized system is specific to each virtual machine. Therefore, PFM - Agent for Platform should be installed on each virtual machine.

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

### 2.3.9 Notes 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 2–4: Case in which collected values differ due to dynamic resource changes



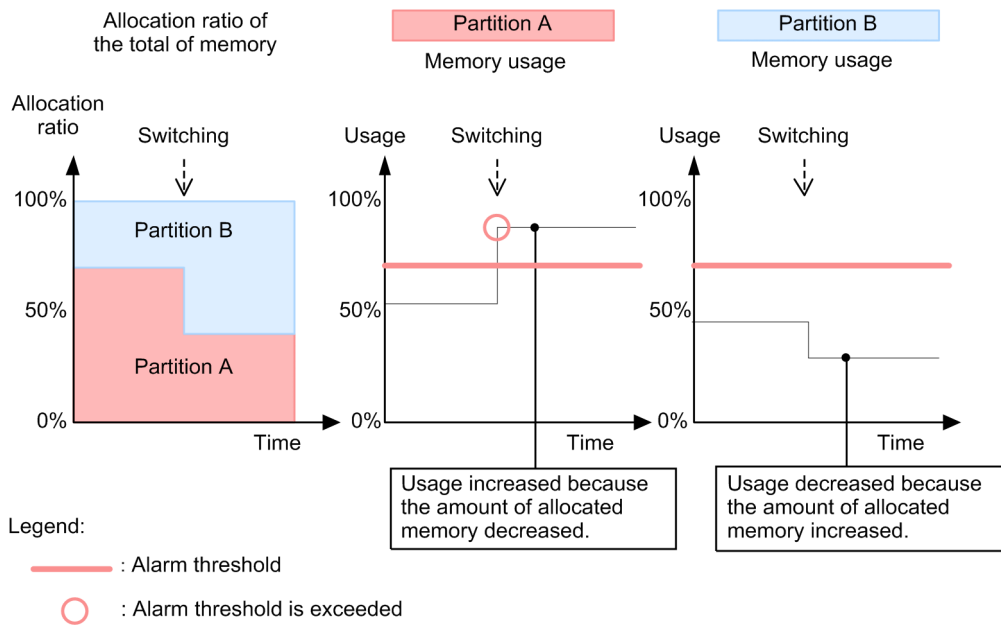
Note that if an application on a given logical partition is using a physical processor, jobs on other logical partitions are cause to wait due to operation. In this case, processor usage cannot be accurately ascertained.

### 2.3.10 Notes 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 2–5: Case in which memory resources are built into an alarm



### 2.3.11 Notes 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.

### 2.3.12 Notes 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.

### 2.3.13 Notes 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.

### 2.3.14 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 2–4: Resources for each virtualized system

Virtualized system	Resource			
	Processor count	Memory	Disk	Network
VMware/Hyper-V	Required	Required	Required	Required
Hitachi Compute Blade logical partitioning feature	Required	Required	--	Required

Legend:

Required: Requires temporary logical partition stoppage

--: Not supported

## 2.3.15 Data that can be collected with virtualized systems that use VMware/Hyper-V

VMware/Hyper-V 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.

### (1) VMware/Hyper-V functionality

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

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

VMware/Hyper-V manages the above functionality to implement 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.

### (2) Using PFM - Agent for Platform on VMware/Hyper-V

Keep the following in mind when using PFM - Agent for Platform on VMware/Hyper-V.

Installing PFM - Agent for Platform

To use PFM - Agent for Platform, install it on the guest OS.

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/Hyper-V also supports a feature that enables upper and lower limits to be set for processor usage allocation. This can result in wide swings in usage when resource switching is performed automatically within a 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.

## 2.3.16 Data that can be collected with virtualization systems that use Hitachi Compute Blade logical partitioning feature

### (1) Hitachi Compute Blade logical partitioning feature functionality

Like other virtualized systems, the functionality provided by Hitachi Compute Blade logical partitioning feature includes the following:

- Virtual networks
- Virtual processors
- Virtual memory

Hitachi Compute Blade logical partitioning feature manages the above functionality to implement a virtualized system. The logical partition must be stopped to change the virtual network or virtual memory, or to change the number of assigned virtual processors. The logical partition does not need to be stopped to change the virtual processor assignment percentages.

### (2) Hitachi Compute Blade logical partitioning feature configuration

Like VMware, Hitachi Compute Blade logical partitioning feature has a parent/child configuration.

To set up a virtualized system on Hitachi Compute Blade logical partitioning feature:

1. Start the installed instance of Hitachi Compute Blade logical partitioning feature.
2. Create and set up a virtual machine.
3. Start the virtual machine.

### (3) Using PFM - Agent for Platform on Hitachi Compute Blade logical partitioning feature

Keep the following in mind when using PFM - Agent for Platform on Hitachi Compute Blade logical partitioning feature.

## Installing PFM - Agent for Platform

Because Hitachi Compute Blade logical partitioning feature 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 Hitachi Compute Blade logical partitioning feature 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 Hitachi Compute Blade logical partitioning feature 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.

## 2.3.17 Data that can be collected on Docker environment

### (1) Overview of the Docker environment

The Docker environment (Windows container function) available with Windows Server 2016 allows you to operate multiple Windows environments within a single Windows system by virtualizing the Windows environments and treating them like software. Because a Docker container (Windows container) shares resources with the host OS, the overhead of running applications is smaller compared to that incurred with virtual machines.

### (2) Docker environment structure

The Docker environment resembles a Solaris zone (which provides a workspace for applications) in structure.

The Docker environment is made up of Docker container (Windows container) environments and a host (Docker host) environment that manages the Docker container environments.

There are the following two types of Windows containers:

- Windows Server container  
This type of container starts up fast because processes on it are executed as if they are running on the host OS.
- Hyper-V container  
This type of container provides greater isolation but takes time to start up because processes on it are executed as if they are running inside a guest OS on Hyper-V.

PFM - Agent for Platform supports the following Docker environment:

#### Docker host OS version

- Windows Server 2016

### (3) Process monitoring in the Docker host environment

If you are running PFM - Agent for Platform in the Docker host environment, you can collect information on processes running inside the Docker containers.

#### Important

You cannot install PFM - Agent for Platform in a Docker container environment.

By setting the `ALL Container Collection for Process` property, you can select whether to collect information about processes running inside Docker containers. The following settings are available for the `ALL Container Collection for Process` property:

Yes

If you select this setting, information<sup>#</sup> about processes running inside both the Docker host environment and Docker container environments is collected.

#

Only information about processes running inside Windows Server containers is collected. Information about processes running inside Hyper-V containers is not collected.

No

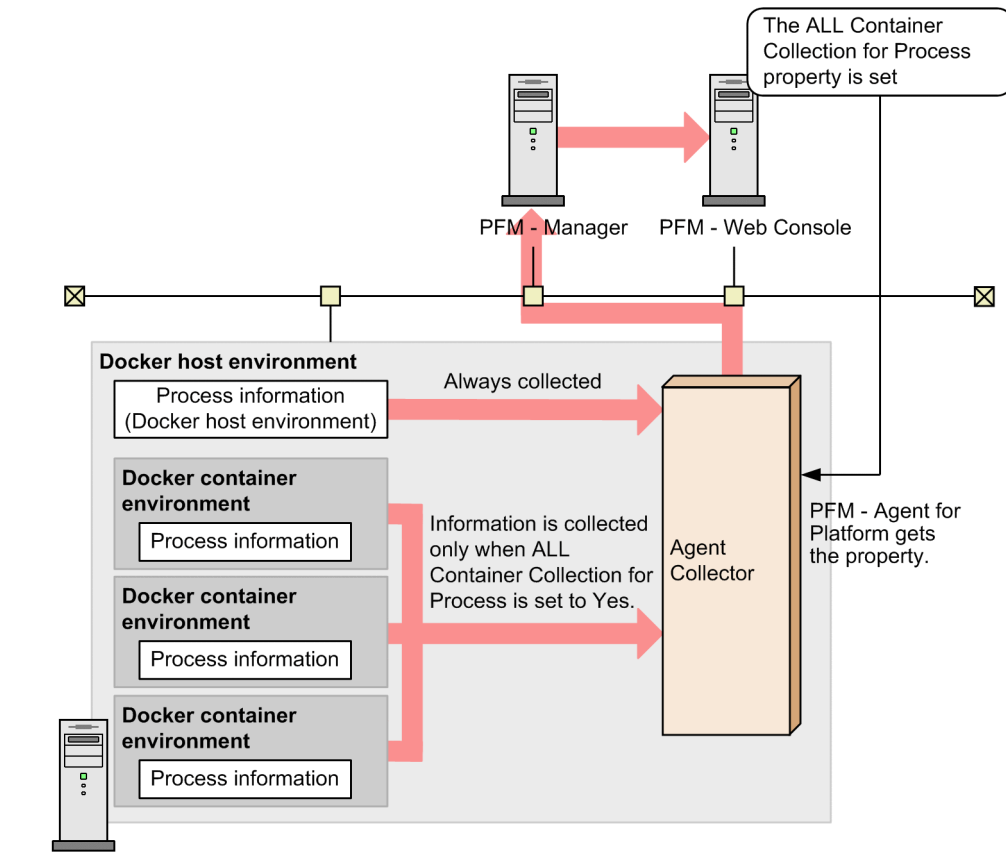
If you select this setting, only information about processes running inside the Docker host environment is collected.

The `ALL Container Collection for Process` property is set to `Yes` by default.

The figure below shows process information collected when PFM - Agent for Platform runs on the Docker host environment.



Figure 2–6: Process information collected on the Docker host environment



PFM - Agent for Platform  
(Windows Server 2016)

Legend:

- ➔ : Flow of process information
- ➔ : Flow of processing

#### (4) Property settings and obtained information

This section describes information that can be obtained with each setting that can be specified for the ALL Container Collection for Process property and the Virtual Environment ID property.

- PD record

For process information obtained by the PD record, the following table describes the relationship between the property setting and the obtained information.

Table 2–5: Property settings and obtained information (PD record)

ALL Container Collection for Process property setting	Obtained information	
	Data is collected from:	Virtual Env ID field value
Yes	The Docker host environment and all Docker container environments	The ID of each Docker container <sup>#</sup>
No	The Docker host environment	0

#

Either 0 (in the case of the Docker host environment) or the ID assigned to a Docker container (in the case of the Docker container environment) is stored as the ID of the virtualized environment (value of the `Virtual Env ID` field)

- `PD_APP` record

With the `PD_APP` record, you cannot collect only information about processes running in a specific environment. If you want to collect only information about processes running in a specific environment, use the `PD_APP2` record.

Note that the scope of data collected by PFM - Agent for Platform is not affected by the setting specified for the `ALL Container Collection for Process` property.

For process information obtained by the `PD_APP` record, the following table describes the relationship between the property setting and the obtained information.

Table 2–6: Property settings and obtained information (`PD_APP` record)

ALL Container Collection for Process property setting	Data is collected from:
Yes	The Docker host environment and all Docker container environments
No	The Docker host environment and all Docker container environments

- `PD_APPD` and `PD_APP2` records

For process information obtained by the `PD_APPD` and `PD_APP2` records, the following table describes the relationship between the property setting and the obtained information.

Table 2–7: Property settings and obtained information (`PD_APPD` record and `PD_APP2` record)

Property settings		Obtained information	
ALL Container Collection for Process	Virtual Environment ID# <sup>1</sup>	Data is collected from:	Virtual Env ID field value# <sup>2</sup>
Yes	Blank	The Docker host environment and all Docker container environments	Blank
Yes	0	The Docker host environment	0
Yes	The ID of an existing Docker container	The specified Docker container environment	The ID of the specified Docker container
Yes	The ID of a non-existent Docker container	--	--
No	Blank	The Docker host environment	Blank
No	0	The Docker host environment	0
No	The ID of an existing Docker container	--	--
No	The ID of a non-existent Docker container	--	--

Legend:

--: Not collected. For `PD_APPD` records, 0 is displayed in the **Monitoring Count** field.

#1

This is a property displayed when *host-name* <Windows> (Agent Collector service) is selected in the **Services** tree of PFM - Web Console, and then from the **Advanced application monitoring - Application monitoring setting** tree, an application is selected. This corresponds to the **Virtual environment ID** in the Process monitoring settings > Create a New Application Definition window or Process monitoring settings > Edit an Application Definition window of the PFM - Web Console's **Agents** tree.

#2

The PD\_APPD record has no Virtual Env ID field.

- PD\_APSI record

For process information obtained by the PD\_APSI record, the following table describes the relationship between the property setting and the obtained information.

Table 2–8: Property settings and obtained information (PD\_APSI record)

Property settings		Obtained information	
ALL Container Collection for Process	Virtual Environment ID#1	Data is collected from:	Virtual Env ID field value
Yes	Blank	The Docker host environment and all Docker container environments	The ID of each Docker container#2
Yes	0	The Docker host environment	0
Yes	The ID of an existing Docker container	The specified Docker container environment	The ID of the specified Docker container
Yes	The ID of a non-existent Docker container	..#3	--
No	Blank	The Docker host environment	0
No	0	The Docker host environment	0
No	The ID of an existing Docker container	..#3	--
No	The ID of a non-existent Docker container	..#3	--

Legend:

--: Not collected.

#1

This is a property displayed when *host-name* <Windows> (Agent Collector service) is selected in the **Services** tree of PFM - Web Console, and then from the **Advanced application monitoring - Application monitoring setting** tree, an application is selected. This corresponds to the **Virtual environment ID** in the Process monitoring settings > Create a New Application Definition window or Process monitoring settings > Edit an Application Definition window of the PFM - Web Console's **Agents** tree.

#2

Either 0 (in the case of the Docker host environment) or the ID assigned to a Docker container (in the case of the Docker container environment) is stored as the ID of the virtualized environment (value of the *Virtual Env ID* field)

#3

Not displayed in a report.

- PD\_APS record

For process information obtained by the PD\_APS record, the following table describes the relationship between the property setting and the obtained information.

Table 2–9: Property settings and obtained information (PD\_APS record)

ALL Container Collection for Process property setting	Obtained information	
	Data is collected from:	Virtual Env ID field value
Yes	The Docker host environment and all Docker container environments	The ID of each Docker container <sup>#</sup>
No	The Docker host environment	0

#

Either 0 (in the case of the Docker host environment) or the ID assigned to a Docker container (in the case of the Docker container environment) is stored as the ID of the virtualized environment (value of the `Virtual Env ID` field)

## (5) Notes on the Docker host environment

Keep the following in mind when you have installed PFM - Agent for Platform on the Docker host environment to collect information about processes running on it:

- PFM - Agent for Platform communicates with the Docker Engine through the Docker Engine API according to the default named pipe settings. For this reason, the named pipe settings of the Docker Engine API must not be edited. If you change the default named pipe settings, PFM - Agent for Platform can no longer communicate with the Docker Engine, in which case N/A is stored in the `Virtual Env ID` field of all processes obtained with the PD record, PD\_APSI record, and PD\_APS record.
- If one or more errors occur while PFM - Agent for Platform is communicating with the Docker Engine to collect record information, or if a Docker container is started or shut down while PFM - Agent for Platform is communicating with the Docker Engine, PFM - Agent for Platform might not be able to determine whether some of the processes are running on the Docker host or a Docker container. In this case, N/A is stored in the `Virtual Env ID` field of the PD record, PD\_APSI record, and PD\_APS record of these processes.
- See *JP1/Performance Management Points to Remember for Docker Environments* in the reference material (Construction and operation - JP1/PFM) available online.

### 2.3.18 Range of data collected for each virtualized system

- Docker environment

For details about the range of data collected by PFM - Agent for Platform on a Docker environment, see [2.3.17 Data that can be collected on Docker environment](#).

- VMware/Hyper-V, Hitachi Compute Blade logical partitioning feature

The following table describes the range of data collected by PFM - Agent for Platform when it is used on a virtualized system provided by VMware/Hyper-V or Hitachi Compute Blade logical partitioning feature.

**Table 2–10: Range of data collected for each virtualized system (environment provided by VMware/Hyper-V or Hitachi Compute Blade logical partitioning feature)**

Record	VMware/Hyper-V and Hitachi Compute Blade logical partitioning feature
PD	Processes on the guest OS
PD_APP	Processes or application services registered with the service control manager on the guest OS
PD_APP2	Processes or performance data about processes or application services registered with the service control manager on the guest OS
PD_APPD	Processes or performance data about processes or application services registered with the service control manager on the guest OS
PD_APS	Processes on the guest OS
PD_APSE	Processes on the guest OS
PD_ASVC	Performance data about application services registered with the service control manager 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_GD64	User-specified performance data on the guest OS
PD_GEND	User-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_GI64	User-specified 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

Record	VMware/Hyper-V and Hitachi Compute Blade logical partitioning feature
PI_PHYD	Performance data about total values or average values for logical partitions allocated to the guest OS
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	--
PI_XUI1 to PI_XUI5	User-specified performance data on the guest OS

**Legend:**

--: N/A

## 2.4 Overview of monitoring templates

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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.

For details about the settings of alarms and reports in the monitoring templates defined in PFM - Agent for Platform, see [7. Monitoring Templates](#). 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 *JPI/Performance Management User's Guide*.

*Notes:*

- The thresholds specified for monitoring template alarms are for reference only. To use monitoring template alarms, copy them and specify appropriate thresholds for the environment or operating system.
- If the setup files for PFM - Agent for Platform were copied to an instance of PFM - Manager earlier than version 10-00 for setup, an alarm may not be issued even if abnormal conditions are met for the following alarms on the monitoring template:
  - Event Log(all)
  - Event Log(System)
  - Application Status

To use the above alarm in an instance of PFM - Manager earlier than version 10-00 that meets these criteria, copy the alarm from the monitoring template and update it.

To copy and update the Application Status alarm:

1. In the navigation frame of the main window of PFM - Web Console, display the **Alarms** page.
2. In the navigation frame, select **Windows** and then **PFM Windows Platform Template Alarms [APP] 09.10**.
3. In the Methods frame, select the **Copy** method.
4. Enter the alarm table name in the [**New alarm table name**] field in the information frame, and then click **OK**.
5. Select the Application Status alarm in the alarm table you copied from the navigation frame.
6. In the method frame, select the **Edit** method.
7. In the information frame, click **Finish**. (You do not need to make any changes to the settings.)

If you click the **Start** button under **Process monitoring alarm settings** in the **Process Monitoring Settings** window of version 10-00 or later of PFM - Web Console, the Application Status alarm in the monitoring template is bound instead. When using the PFM - Manager earlier than version 10-00, do not bind the alarm from the **Process Monitoring Settings** window.

Note that you can resolve this issue by upgrading to version 10-00 or later of PFM - Manager.

# 3

## Introduction to Performance Monitoring Operations by Example

Through use of examples, this chapter introduces you to PFM - Agent for Platform as a means to carry out performance monitoring operations.



## 3.1 Performance monitoring examples

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This section 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 [8. Records](#).
- Fields are not explained in detail. For details about fields, see [8. Records](#).
- If you want to monitor information from multiple programs together, see [6.4 Settings for collecting workgroup information](#).
- For details about how to monitor various types of user-defined records, such as how to monitor information about the operating status of processes and applications, see [6. User-Defined Record Collection](#).

### 3.1.1 Processor monitoring examples

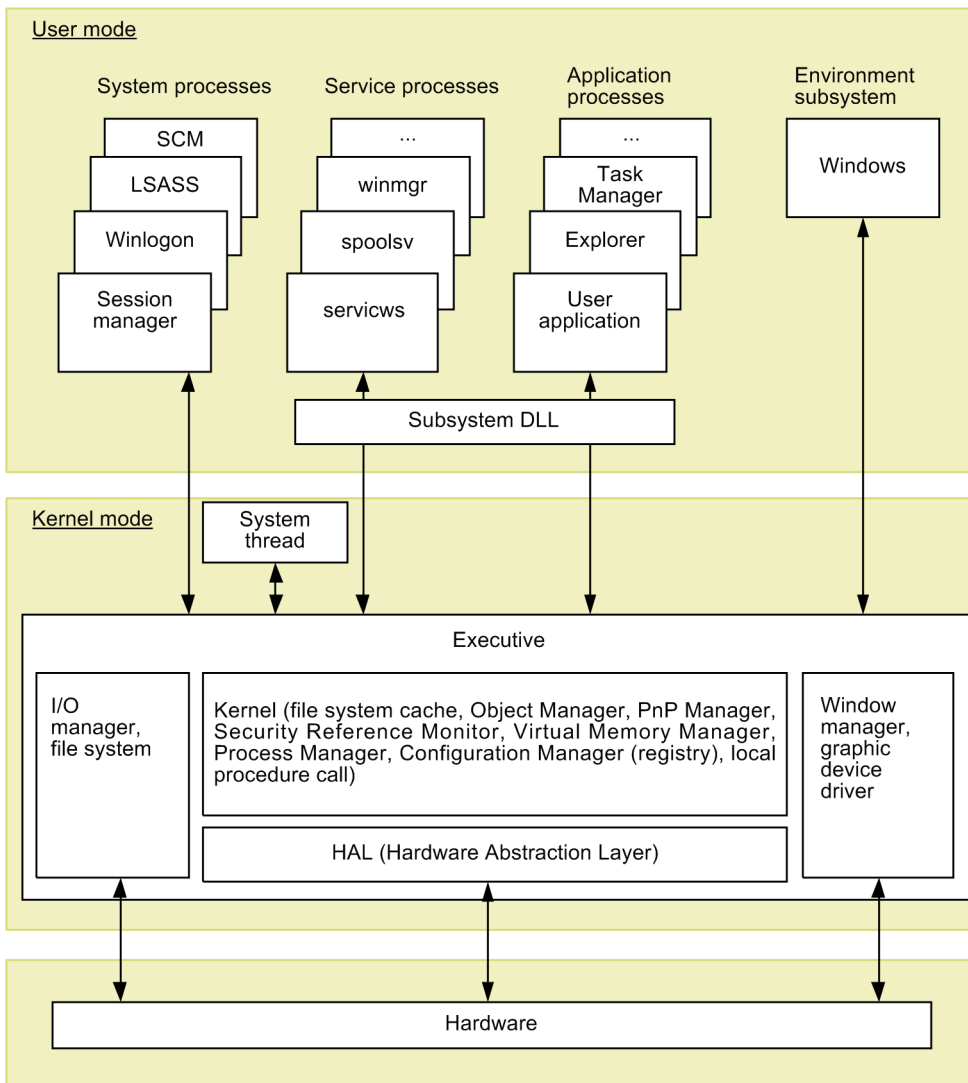
This subsection explains how to monitor processor performance.

#### (1) 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 3–1: 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 3–1: Principal records and fields related to processor monitoring

Record	Field	Description (example)
PI_PCSR	CPU %	Processor usage (%). If the value of this field continues to be at or above the threshold (normally 85%), the processor might be a system bottleneck.#

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.
	Privileged CPU %	Processor usage in the 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 %	Processor usage 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 (4), 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 %	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 %	Processor usage in the privileged 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 %	Processor 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).

#

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 3–2: Principal records and fields related to processor monitoring in a multi-processor environment**

Record	Field	Description (example)
PD_PDI	CPU %	Percentage of the processor time used by the process (%). If the value of this field continues to be at or above the threshold, the processor might be a processor bottleneck.#
	Privileged CPU %	Percentage of the time the process used the processor in the 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.#

Record	Field	Description (example)
PD_PDI	User CPU %	Amount of processor time used by processes 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. <sup>#</sup>

#

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

## (2) Monitoring methods

### (a) 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 [3.2.1\(1\) Monitoring template](#).

### (b) 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 [3.2.1\(2\) Definition examples other than for monitoring templates](#).

### (c) 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 [3.2.1\(2\) Definition examples other than for monitoring templates](#).

## 3.1.2 Memory monitoring examples

This subsection explains how to monitor memory performance.

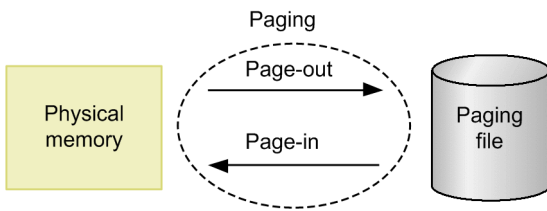
### (1) Overview

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 3–2: 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 3–3: 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, memory might be a system bottleneck.
	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, memory might be a system bottleneck.
	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.

Record	Field	Description (example)
PI	Committed Mbytes	The amount of virtual memory in use. If the value of this field continues to be at or above the threshold (the <code>Total Physical Mem Mbytes</code> 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_PAGEF	% 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 3–4: 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.
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	

## (2) Monitoring methods

### (a) 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 [3.2.2\(1\) Monitoring template](#).

### (b) 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 [3.2.2\(2\) Definition examples other than for monitoring templates](#).

### **(c) 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 [3.2.2\(2\) Definition examples other than for monitoring templates](#).

### **(d) 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 [3.2.2\(2\) Definition examples other than for monitoring templates](#).

### **(e) 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 [3.2.2\(2\) Definition examples other than for monitoring templates](#).

## **3.1.3 Disk monitoring examples**

This subsection explains how to monitor disk performance.

### **(1) 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 3–5: 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.

## (2) Monitoring methods

### (a) 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 [3.2.3\(1\) Monitoring template](#).

### (b) 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 [3.2.3\(1\) Monitoring template](#).

### **(c) 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 [3.2.3\(1\) Monitoring template](#).

### **(d) 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 [3.2.3\(1\) Monitoring template](#).

## **3.1.4 Network monitoring examples**

This subsection explains how to monitor network performance.

### **(1) 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 3–6: 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.

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

## (2) Monitoring methods

### (a) 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 [3.2.4\(1\) Monitoring template](#).

## 3.1.5 Process and service monitoring examples

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

### (1) 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 3–7: 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.#
PD_PDI	Program	The name of a process. If this record is not collected, the process is inactive.
PD_ASVC, PD_SVC	Service Name	The name and status of a service. If the status of the application service (process) is not RUNNING, the service is inactive.
	Display Name	
	State	
PD_APS	Program Name	The name of a process. If this record is not collected, the process has stopped.
PD_APP, PD_APP2	Application Name	The name of an application definition.
	Application Exist	A status of the applications. NORMAL indicates that the status of any one of the monitored targets is normal. ABNORMAL indicates that the status of all the monitored targets is abnormal.
	Application Status	A status of the applications. NORMAL indicates that the status of all the monitored targets is normal. ABNORMAL indicates that the status of any one of the monitored targets is abnormal.
	Application Name	Conditional results on the number of monitors. If the value of the Monitoring Status field is ABNORMAL, the number of running programs, services, or command lines is not within the specified range.
	Monitoring Label	
	Monitoring Status	

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

## (2) Monitoring methods

### (a) 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 [3.2.5\(1\) Monitoring template](#).

### (b) 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 [3.2.5\(1\) Monitoring template](#).

## (c) 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 [3.2.5\(1\) Monitoring template](#).

## 3.1.6 Event log monitoring examples

This subsection explains how to monitor event logs.

### (1) 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 3–8: 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.

### (2) Monitoring methods

#### (a) 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 [3.2.6\(1\) Monitoring template](#).

#### (b) Monitoring a WSFC cluster

The operation of a WSFC 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 WSFC.

For details, see [3.2.6\(1\) Monitoring template](#).

### 3.1.7 Active Directory monitoring examples

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.

#### (1) 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 3–9: 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.
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 3–10: 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.
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.

## (2) 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 3–11: 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.

## (3) 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 3–12: 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.

**(4) 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 3–13: 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).
DRA In Before Compress		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	Outbound replication	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.

### Tip

*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.

## 3.1.8 Examples 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 [6.8 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 3–14: 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 (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
```

 **Important**

The batch programs shown here might not operate, depending on the environment.

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 jplps05 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 (x86)\HITACHI\jplpc\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.

## 3.1.9 Examples 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.

### (1) Collection data

The following example obtains information using the user-created data created in [3.1.8 Examples of collecting information about used ports](#).

### (2) Prerequisites

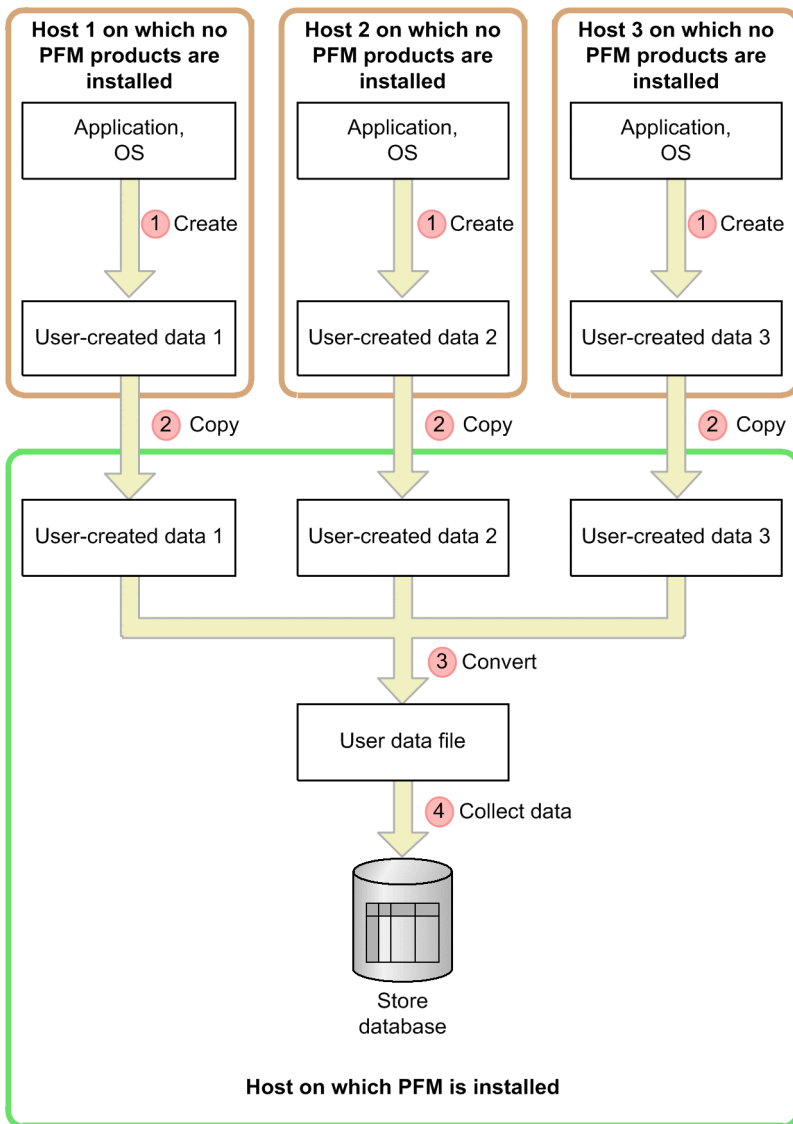
The prerequisites for collecting performance data from multiple hosts on which PFM products are not installed are as follows:

- 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.

### (3) Procedures for data collection

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

Figure 3–3: Flow of data collection for hosts on which PFM products are not installed



Legend



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 [3.1.8 Examples 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
```

**!** **Important**

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 (x86)\HITACHI\jplpc\agtt\agent\jpcuser\jpcuser" PI_UPIB  
-file user-created-data-1 -file user-created-data-2 -file user-created-dat  
a-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.

## 3.2 Performance monitoring 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)**.

### 3.2.1 Processor monitoring definition examples

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

#### (1) Monitoring template

##### (a) 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 3–15: 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.
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.

## (b) Processor-related monitoring template reports

Table 3–16: 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 [7. Monitoring Templates](#).

## (2) Definition examples other than for monitoring templates

### (a) Real-time report for checking processes whose processor usage is high

Table 3–17: Definition example

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

Item			Explanation
<b>Indication settings</b>	<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)
		<b>Y-axis</b>	CPU %
	<b>Data label</b>	<b>Data label 1</b>	Process name
		<b>Data label 2</b>	Process ID
<b>Drilldown</b>	<b>Report drilldown</b>		Arbitrary
	<b>Field drilldown</b>		Arbitrary

Legend:

--: Do not specify this item.

#

Specify a value appropriate for the circumstances.

## 3.2.2 Memory monitoring definition examples

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

### (1) Monitoring template

#### (a) Memory-related monitoring template alarms

Table 3–18: 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

Monitoring template alarm	Record	Field	Error threshold	Warning threshold	Description
Available Memory	PI	Available Mbytes	< 3	< 4	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 <code>Total Physical Mem Mbytes</code> field in the PI record), physical memory might be insufficient.
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 [7. Monitoring Templates](#).

## (b) Memory-related monitoring template reports

Table 3–19: 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

## (c) System-related monitoring template reports (for memory)

Table 3–20: 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
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 [7. Monitoring Templates](#).



## (2) Definition examples other than for monitoring templates

### (a) Historical report for checking whether a memory leak has occurred

Table 3–21: Definition example

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

Item		Explanation	
<b>Graph</b>	<b>Graph type</b>	Line graph	
	<b>Series direction</b>	Row	
	<b>Axis labels</b>	<b>X-axis</b>	Time
		<b>Y-axis</b>	Nonpaged pool
	<b>Data label</b>	<b>Data label 1</b>	(None)
<b>Data label 2</b>		(None)	
<b>Drilldown</b>	<b>Report drilldown</b>	Arbitrary	
	<b>Field drilldown</b>	Arbitrary	

Legend:

--: Do not specify this item.

#

Specify a value appropriate for the circumstances.

## (b) Real-time report for checking the memory usage of a process

Table 3–22: Definition example

Item		Explanation	
<b>Name and Type</b>	<b>Report name</b>	PD_PDI - Memory	
	<b>Product</b>	Windows (6.0)	
	<b>Report type</b>	<input type="radio"/> <b>Real-time (single agent)</b>	<input checked="" type="radio"/> (Select)
		<input type="radio"/> <b>Historical (single agent)</b>	--
<input type="radio"/> <b>Historical (multiple agents)</b>		--	
<b>Field</b>	<b>Record</b>	PD_PDI	
	<b>Selected fields</b>	Select all fields.	
<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>	Pool Nonpaged Kbytes#	

Item			Explanation
<b>Indication settings</b>	<b>Display by ranking</b>	<b>Display number</b>	30 <sup>#</sup>
		<input type="checkbox"/> <b>In descending order</b>	<input checked="" type="checkbox"/> (Select)
<b>Components</b>	<b>Table</b>		Program PID Handle Count Page Faults/sec Pool Nonpaged Kbytes Pool Paged Kbytes Working Set Kbytes Page File Kbytes Private Kbytes CPU %
	<b>List</b>		--
	<b>Graph</b>		Pool Nonpaged Kbytes Pool Paged Kbytes Working Set Kbytes Page File Kbytes Private Kbytes
	<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
	<b>Axis labels</b>	<b>X-axis</b>	Time
		<b>Y-axis</b>	Memory usage
	<b>Data label</b>	<b>Data label 1</b>	(None)
		<b>Data label 2</b>	(None)
<b>Drilldown</b>	<b>Report drilldown</b>		Arbitrary
	<b>Field drilldown</b>		Arbitrary

Legend:

Do not specify this item.

#

Set the fields that you want to monitor.

### 3.2.3 Disk monitoring definition examples

The following shows definition examples for the monitoring templates.

## (1) Monitoring template

### (a) 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 3–23: 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	
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 [7. Monitoring Templates](#).

### (b) Disk-related monitoring template reports

Table 3–24: 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 [7. Monitoring Templates](#).

## 3.2.4 Network monitoring definition examples

The following shows definition examples for the monitoring template.

# (1) Monitoring template

## (a) 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 3–25: Network monitoring template alarms

Monitoring template alarm	Record used	Field used	Abnormal condition	Warning condition	Meaning
Network Received	PI_NETI	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 [7. Monitoring Templates](#).

## (b) Network-related monitoring template reports

Table 3–26: 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
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 [7. Monitoring Templates](#).

## 3.2.5 Process and service monitoring definition examples

The following gives definition examples for monitoring templates.

### (1) Monitoring template

#### (a) Process-related monitoring template alarms

Process-related monitoring template alarms are stored in the alarm table for PFM Windows Template Alarms [PS] 10.00.

Table 3–27: 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	
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	
Application Status	PD_APP2	Application Name	= *	= *	If the value of the Application Exist field is ABNORMAL, this indicates that all the monitored targets set for the application are in ABNORMAL status. If the value of the Application Status field is ABNORMAL, this indicates that one of the monitored targets set for the application is in ABNORMAL status
		Application Exist	= ABNORMAL	= NORMAL	
		Application Status	= ABNORMAL	= ABNORMAL	
Process Existence	PD_APS	Program Name	= jpcsto.exe	= jpcsto.exe	If this record is not collected, this indicates that the process has stopped.

For details about existing alarms, see [7. Monitoring Templates](#).

#### (b) Process-related monitoring template reports

Table 3–28: 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 [7. Monitoring Templates](#).

### 3.2.6 Event log monitoring definition examples

The following gives definition examples for monitoring templates.

#### (1) Monitoring template

##### (a) 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 3–29: 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	
		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 WSFC.
		Event Type Name	= Error	= Warning	
		Source Name	= ClusSvc	= ClusSvc	
		Event ID	<> 0	<> 0	
		Description	<> dummy	<> dummy	

For details about existing alarms, see [7. Monitoring Templates](#).

##### (b) Event log-related monitoring template reports

N/A

# 4

## Installation and Setup in Windows

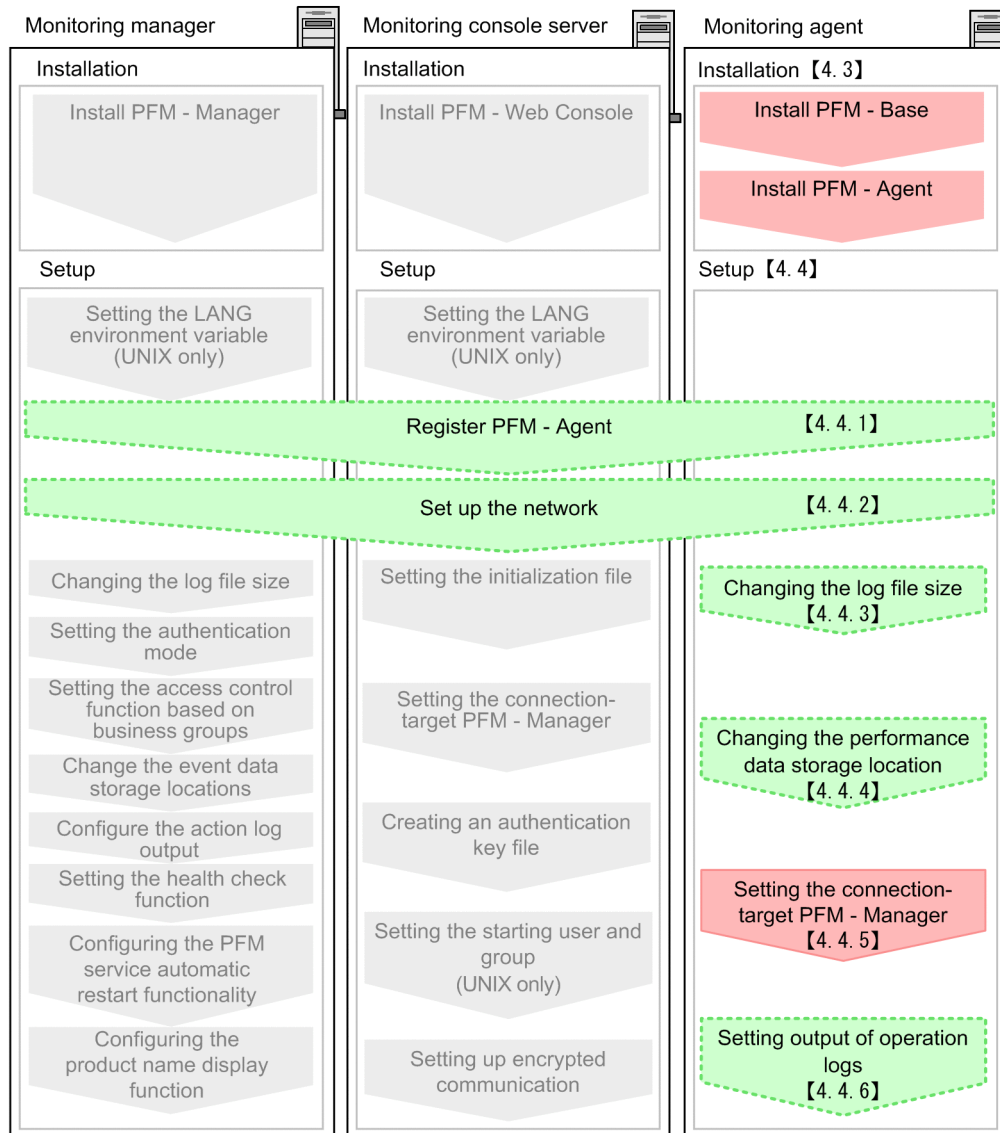
This chapter explains how to install and set up PFM - Agent for Platform. For details about how to install and set up the entire Performance Management system, see the chapter explaining installation and setup in the *JP1/Performance Management Planning and Configuration Guide*.






# 4.1 Installation and setup workflow

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

Figure 4–1: Installation and setup flow



Legend:

-  : Required setup item
-  : Optional setup item
-  : Item whose procedure is described in the JP1/Performance Management Planning and Configuration Guide
- [ ] : Reference

For details about how to install and set up PFM - Manager and PFM - Web Console, see the chapter explaining installation and setup in the *JP1/Performance Management Planning and Configuration Guide*.

Note that setup commands that require information to be entered by the user can be selected to run interactively or non-interactively.

When a command is run interactively, a prompt is issued to the user requesting entry of a required value.

When a command is run non-interactively, the user is not prompted. Instead, the input information required for execution of the command is provided by means of option specifications and definition files. By automating setup tasks through batch processing and remote execution, you can reduce the administrative burden and operational costs.

For details about commands, see the manual *JPI/Performance Management Reference*.

## 4.2 Preparations required before installation

---

### 4.2.1 Required OS

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

- Windows Server 2012
- Windows Server 2016
- Windows Server 2019

### 4.2.2 Network environment setup

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

#### (1) IP address setup

You must set up at the PFM - Agent host an environment in which IP address can be resolved from host names. PFM - Agent cannot start in an environment in which IP addresses 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 *JPI/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

#### Important

- Performance Management can be run on a DNS environment, but does not support host names in the FQDN 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 *JPI/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.

Performance Management supports IPv6 network configurations in addition to IPv4 environments. Performance Management also works in network configurations that are made up of a mix of IPv4 and IPv6 environments.

PFM - Agent for Platform can communicate with PFM - Manager over IPv6, but only if both are hosted on Windows or Linux.

For details about and limitations applicable to communication in the IPv4 and IPv6 environments, see [K. Communication in IPv4 and IPv6 Environments](#).

To communicate over IPv6, you must enable IPv6 on the PFM - Manager host, as well as on each PFM - Agent host. Before installing PFM - Agent for Platform, you must also enable the use of IPv6 on the PFM - Agent host. To configure this setting, execute the `jpcconf ipv6 enable` command. If the use of IPv6 is already enabled, there is no need to configure this setting. To check whether the use of IPv6 is enabled, execute the `jpcconf ipv6 display` command.

For details about the `jpcconf ipv6 enable` command, see the chapter that describes commands in the manual *JPI/Performance Management Reference*. For details about the timing and conditions for executing the `jpcconf ipv6 enable` command, see the chapter that describes network configurations that include IPv6 environments in the *JPI/Performance Management Planning and Configuration Guide*.

Also note that if you want PFM - Agent for Platform to communicate with PFM - Manager over IPv6, you must specify host names that can be resolved.

Communication between PFM - Agent for Platform and PFM - Manager is established using resolvable IP addresses. When PFM - Agent for Platform and PFM - Manager communicate in an environment in which IPv4 and IPv6 coexist and an attempt to communicate with one resolvable IP address fails, no attempt will be made to communicate using the other IP address.

For example, when an IPv4 connection fails, a retry over IPv6 will not be attempted. Similarly, when an IPv6 connection fails, a retry over IPv4 will not be attempted. We recommend to confirm connections in advance, if possible.

## (2) 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 *JPI/Performance Management Planning and Configuration Guide*.

Table 4–1: 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>jplpcnsvr</code>	22285	Port number used by the Name Server service of PFM - Manager. This port number is set for all hosts in Performance Management.
Service status management function	Status Server	<code>jplpcstatsvr</code>	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.
JPI/SLM linkage facility	JPI/ITSLM	--	20905	Port number set in JPI/SLM.

Legend:

--: None

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

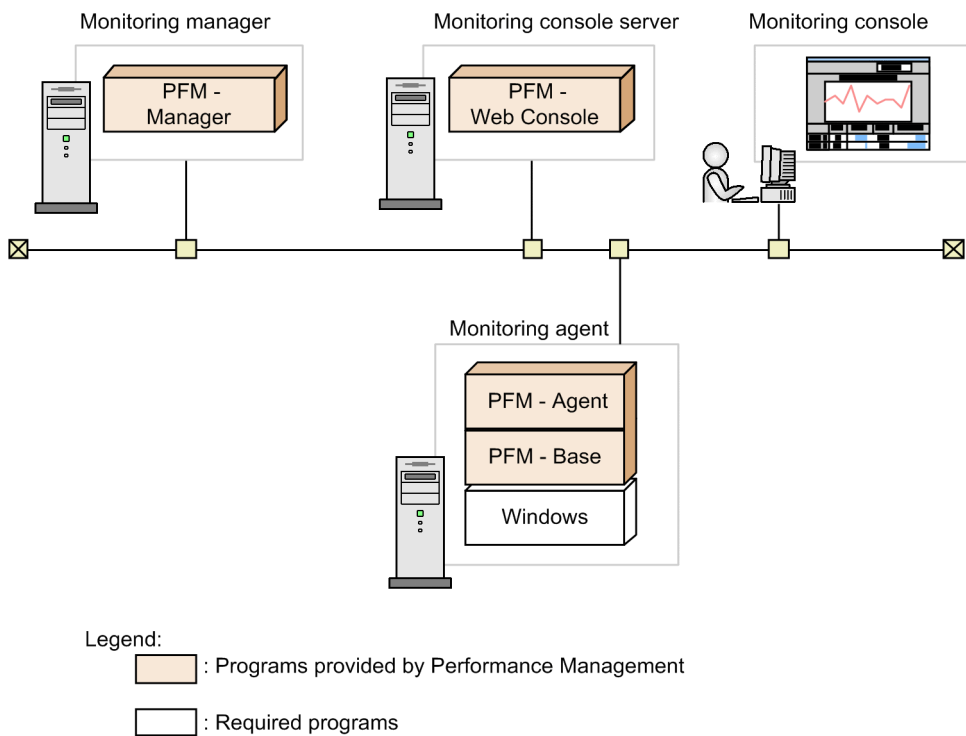
### 4.2.3 OS user permissions needed for installation

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

### 4.2.4 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 4–2: Program configuration



### (1) Monitoring target programs

PFM - Agent for Platform monitors the following programs:

- Windows Server 2012
- Windows Server 2016
- Windows Server 2019

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

## (2) Performance Management programs

Install PFM - Agent and PFM - Base on the monitoring agent. PFM - Base is a prerequisite program for PFM - Agent. Even if you have multiple copies of PFM - Agent or PFM - RM installed on the same host, you need only a single copy of PFM - Base. However, if you install PFM - Manager and PFM - Agent on the same host, PFM - Base is not required.

For details about the relationships between Performance Management program versions and the hosts on which they may be installed, see the chapter that describes system configuration version compatibility in the *JPI/Performance Management Planning and Configuration Guide*.

To use PFM - Agent for Platform to monitor the operation of Windows Server, you need PFM - Manager and PFM - Web Console.

### 4.2.5 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 4–2: Prerequisites for collecting performance data

Category	Record name (record ID)	Field name (PFM - View name)	Prerequisites
OS	Application Process Detail (PD_APPD)	Monitoring Count (MONITORING_COUNT)	Windows Management Instrumentation (service name: <b>WinMgmt</b> ) has started.
		Monitoring Status (STATUS)	
	Application Process Interval (PD_APPI)	All	
	Application Process Overview (PD_APS)	All	
	Application Service Overview (PD_ASVC)	PID (ID_PROCESS)	
	Application Summary Extension (PD_APP2)	Application Exist (EXIST)	
		Application Status (STATUS)	
	Logical Disk Overview (PI_LOGD)	Page File Size Mbytes (PAGE_FILE_SIZE_BYTES)	
	Process End Detail (PD_PEND)	All	
	Processor Overview (PI_PCSR)	All	
System Overview (PI)	System Type (SYSTEM_TYPE)		

Category	Record name (record ID)	Field name (PFM - View name)	Prerequisites	
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.	
	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)				
Pool Nonpaged Failures (POOL_NONPAGED_FAILURES)				
Pool Nonpaged Peak (POOL_NONPAGED_PEAK)				
Pool Paged Failures (POOL_PAGED_FAILURES)				
Pool Paged Peak (POOL_PAGED_PEAK)				

Category	Record name (record ID)	Field name (PFM - View name)	Prerequisites
Network services	System Overview (PI)	Server Pool Nonpaged Bytes (SERVER_POOL_NONPAGED_BYTES)	Server (service name: <b>LanmanServer</b> ) has started.
		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)	
Active Directory	Active Directory Overview (PI_AD)	Cache % Hit	Active Directory is enabled, and the Active Directory database performance counter has been installed.
		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.

## 4.2.6 Prerequisite for specifying 4,096-byte monitoring conditions for processes

Starting with version 10-00 of PFM - Manager and PFM - Web Console, you are able to specify up to 4,096 bytes of monitoring conditions to be used for performance monitoring.

When you install PFM - Base or PFM - Manager on a PFM - Agent host, be sure to install version 10-00 or later.



## 4.2.7 Preparations for collecting data in the event of a failure

When a problem occurs, you might need to acquire a memory dump or user-mode process dump. In order to collect these dumps when problems arise, you must have already configured the system to output memory dumps and user-mode process dumps.

### (1) Memory dump settings

1. From the Windows **Control Panel**, double-click **System**.
2. On the **Advanced** page, go to **Startup and Recovery** and click the **Settings** button.
3. Under **Write debugging information**, select **Kernel memory dump** and specify the output file.

*Note:*

The size of a memory dump is a function of the actual size of the memory. The more physical memory that is installed, the larger a memory dump will be. Make sure there is sufficient disk space to accommodate a memory dump. For more information, see the OS documentation.

### (2) User-mode process settings

You can use the following registry key to gain immediate access to user-mode process dumps in order to facilitate debugging when an application program terminates abnormally:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\Windows Error Reporting\LocalDumps
```

For this registry key, set the following registry values:

- `DumpFolder` : REG\_EXPAND\_SZ <dump-output-folder>  
(must have write permission for the output folder)
- `DumpCount` : REG\_DWORD <number-of-dumps-to-save>
- `DumpType` : REG\_DWORD 2

*Notes:*

- These registry settings enable output of user-mode process dump files for other application programs, as well as for JP1. Keep this in mind if you decide to enable output of user-mode process dumps.
- Whenever a user-mode process dump is output, the amount of available disk space contracts. Make sure that the output folder you specify has sufficient disk space to accommodate the output of user-mode process dumps.

## 4.2.8 Points to note before installing PFM - Agent for Platform

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

### (1) Notes on 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.

## (2) Notes on 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.

## (3) 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.
- Before installing PFM - Agent on a host on which PFM - Web Console is installed, close all browser windows.
- 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 *JPI/Performance Management User's Guide*.



### Tip

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

## (4) Notes on version upgrade

For notes about upgrading the Performance Management programs, see the section that presents notes about upgrading in the chapter describing installation and setup in the *JPI/Performance Management Planning and Configuration Guide*.

For notes about upgrading PFM - Agent for Platform, see [Appendix G. Upgrade Procedure and Notes on Upgrading](#).

For details about upgrading, see the appendix in the *JPI/Performance Management Planning and Configuration Guide*.

## (5) 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  
Stop any virus detection programs before you install the Performance Management program.  
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.
  - PFM - Agent for Platform supports the disk replication installation functionality of JP1/ServerConductor/Deployment Manager, and also supports the replication functionality of virtualization platforms through conversion to image files.  
For details on disk replication installation, see precautions regarding disk replication installation in the *JP1/Performance Management Planning and Configuration Guide*.

## 4.3 Installation

This section explains the order in which to install PFM - Agent programs and how to install them from the distribution media.

### 4.3.1 Order in which to install the programs

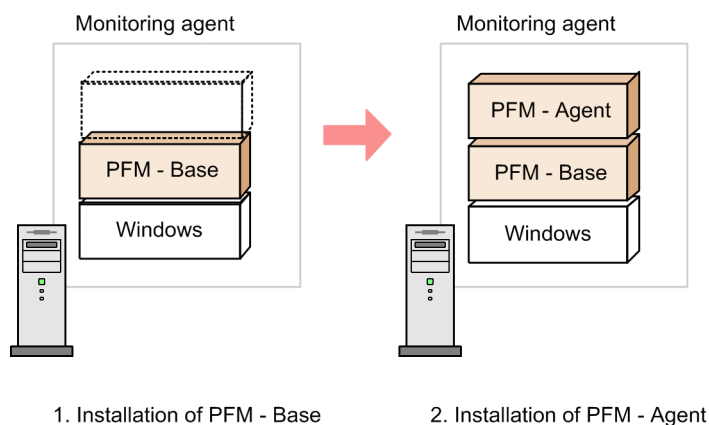
First install PFM - Base and then install PFM - Agent. You cannot install PFM - Agent on a host on which PFM - Base is not installed.

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 [4.7.2 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 4–3: Program installation procedure



### 4.3.2 Installation procedure for PFM - Agent for Platform

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

#### Important

If the 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 distribution media:

1. Use the Administrators permission to log onto the host on which programs are to be installed.

2. Stop any Performance Management services running on the local host.

You must stop all Performance Management services on physical and logical hosts. For details about how to stop services, see the chapter that describes starting and stopping Performance Management in the *JP1/Performance Management User's Guide*.

3. Insert the distribution media into the appropriate drive, and execute the installer.

Proceed with the installation in accordance with the instructions given by the installer that has been started.

You can view the following items that were specified when PFM - Manager or PFM - Base was installed:

- User information
- Installation folder
- Program folder

4. Click the **Install** button to start the installation.

## 4.4 Setup

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

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

### 4.4.1 Registering PFM - Agent for Platform in PFM - Manager and PFM - Web Console **Options**

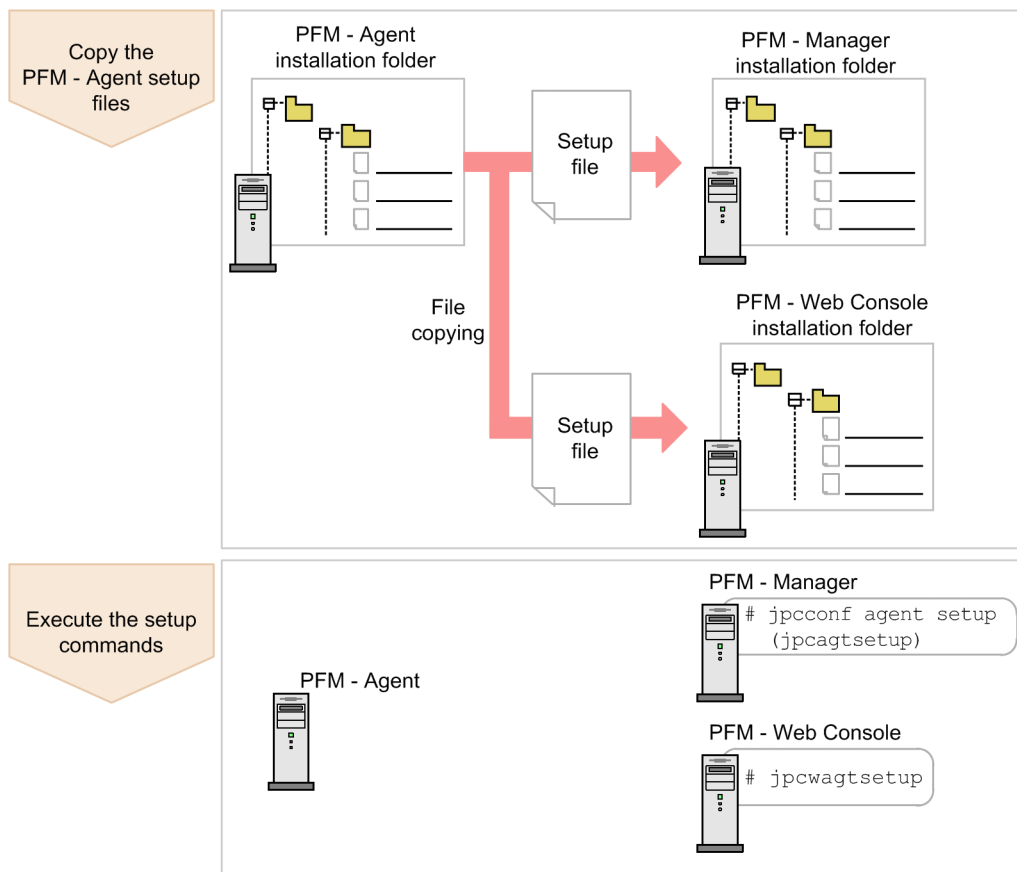
To use PFM - Manager and PFM - Web Console to centrally manage PFM - Agent, you need to register PFM - Agent for Platform in PFM - Manager and PFM - Web Console.

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 might have to manually register a version of PFM - Agent or PFM - RM that was released after the version of PFM - Manager you are using. For details on whether manual registration is required, see the *Release Notes* for PFM - Manager.

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

Figure 4–4: PFM - Agent registration flow



## ! Important

- 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` 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 *JPI/Performance Management Reference*.

## (1) 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 4–3: 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</i> \setup\	<i>installation-folder</i> \setup\jpcagttw.EXE
	UNIX	/opt/jp1pc/setup/	<i>installation-folder</i> \setup\jpcagttu.Z
PFM - Web Console	Windows	<i>PFM-Web-Console-installation-folder</i> \setup\	<i>installation-folder</i> \setup\jpcagttw.EXE
	UNIX	/opt/jp1pcwebcon/setup/	<i>installation-folder</i> \setup\jpcagttu.Z

## (2) 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
```

In this example, the `jpccconf agent setup` command is executed interactively, but it can also be run non-interactively. For details about the `jpccconf agent setup` command, see the chapter that describes commands in the manual *JPI/Performance Management Reference*.

## Important

If you execute the `jpccconf agent setup` 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` command.

### (3) 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:

```
jpccwagtsetup
```

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

#### 4.4.2 Network setup

Some settings might need to be changed depending on the configuration of the network in which Performance Management is used.

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 *JPI/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 *JPI/Performance Management Planning and Configuration Guide*.

#### 4.4.3 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*. Modify this setting if you want to change the file size.

For details, see the chapter explaining installation and setup in the *JPI/Performance Management Planning and Configuration Guide*.

#### 4.4.4 Changing the performance data storage destination

Change these settings if you want to change the storage destinations for the database that stores 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 [4.7.1 Changing the storage location of performance data](#).

## 4.4.5 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` command.

### Important

- 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 *JPI/Performance Management User's Guide*.

If Performance Management programs and services are active when you attempt to execute the `jpccconf mgrhost define` 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` command.

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

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

In this example, the `jpccconf mgrhost define` command is executed interactively, but it can also be run non-interactively. For details about the `jpccconf mgrhost define` command, see the chapter that describes commands in the manual *JPI/Performance Management Reference*.

## 4.4.6 Setting up the action log Options

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*.

## 4.5 Uninstallation

---

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

### 4.5.1 Points to note 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\agtt`.
- 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` 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 *JPI/Performance Management Planning and Configuration Guide*.

#### (5) Other notes

Before uninstalling Performance Management programs from a host on which PFM - Web Console is installed, close all browser windows.

### 4.5.2 Releasing the connection to PFM - Manager

To release the connection to PFM - Manager, you must delete the service information for the PFM - Agent for Platform system connected to the target PFM - Manager system.

For details about how to delete service information, see the section that describes the service information deletion procedure in the chapter describing installation and setup (for Windows) in the *JP1/Performance Management Planning and Configuration Guide*.

To change the connection target to a different PFM - Manager, see *4.4.5 Setting up PFM - Manager for the connection destination of PFM - Agent for Platform*.

### 4.5.3 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 *JP1/Performance Management User's Guide*.
3. Select the Performance Management programs to be uninstalled.  
From Windows **Control Panel**, choose **Programs and Features**, and select the Performance Management programs to be uninstalled.  
#: This name might differ depending on the Windows version.
4. Click **Remove**, and then click the **OK** button.  
The selected programs are uninstalled.

Note:

If the 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.

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

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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 you change 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 *JPI/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.

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

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 *JPI/Performance Management Planning and Configuration Guide*.

### 4.7.1 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` 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` command. If you need the performance data collected before the Store database storage location is changed, execute the `jpccconf db define` command with the `-move` option specified. For details about the `jpccconf db define` command, see the manual *JPI/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` command, including the values that can be specified.

Table 4–4: Options of the command that changes the performance data storage location

Item	Option	Specifiable value (Store 1.0) <sup>#</sup>	Specifiable value (Store 2.0) <sup>#</sup>	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

Item	Option	Specifiable value (Store 1.0)#	Specifiable value (Store 2.0)#	Default
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 4–5: Performance-data storage location settings (under [Data Section] in `jpcsto.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 jpcsto.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` command to back up the performance data stored in the Store database.
  2. Change the Store database folder as described in (c) *Editing the jpcsto.ini file*.
  3. Use the `jpctool db restore` command to restore the backed up data into the new folder.

## (c) Editing the jpcsto.ini file

To edit the `jpcsto.ini` file:

1. Stop the PFM - Agent service.  
If PFM - Agent programs and services are active on the local host, stop them all.
2. Use a text editor, for example, to open the `jpcsto.ini` file.
3. 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  
  
      :
```

### Important

- 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.

4. Save and close the `jpcsto.ini` file.
5. 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

## 4.7.2 Updating the Store version to 2.0

The Store database comes in two versions, 1.0 and 2.0. For details about Store version 2.0, see the chapter that describes the design of the operations monitoring system in the *JP1/Performance Management Planning and Configuration Guide*.

Store version 2.0 is provided as the default when you perform a new installation of PFM - Agent for Platform version 08-11 or later in an environment with PFM - Base or PFM - Manager version 08-11 or later. 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 4–6: 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 or later, and then execute the <code>setup</code> command.
	New installation		
08-11 or later	Overwrite installation	Available after setup	Execute the <code>setup</code> command.
	New installation	Yes	None

### (1) Setup of Store 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. See the *Release Notes* for details about estimating system resources.

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` 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
```

For details about the `jpccconf db vrset` command, see the manual *JPI/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` 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` command, see the manual *JPI/Performance Management Reference*.

## (3) Notes

### (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  $1,000 \div 24$  (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` command to output the data in the database. See the *Release Notes* for details about the default number of days saved in Store version 2.0.

### (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` command to output Store version 2.0 information.

## 4.8 Backup and restoration

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

To protect against the system becoming corrupted as a result of a failure, we recommend that you back up the settings information for PFM - Agent for Platform. We recommend that you also perform a 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 *JPI/Performance Management User's Guide*.

Note that you cannot back up settings that were made by the collection data addition utility.

### 4.8.1 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.

For other files, see the section that presents a list of PFM - Agent files to be backed up (for Windows) in the *JPI/Performance Management User's Guide*.

Table 4–7: Files to be backed up for PFM - Agent for Platform

File name	Description
<i>installation-folder</i> \agtt\agent\*.ini	Settings files for the Agent Collector service
<i>installation-folder</i> \agtt\store\*.ini	Settings files for the Agent Store service
<i>installation-folder</i> \agtt\agent\jpcapp#	Application definition file (version 09-00 or earlier)
<i>installation-folder</i> \agtt\agent\jpcapp2#	Application definition file (version 10-00 or later)
<i>installation-folder</i> \agtt\agent\jpcuser\*.ini	JPCUSER definition files

Table 4–8: Files to be backed up for PFM - Agent for Platform (for a logical host)

File name	Description
<i>environment-folder</i> #2\jplpc\agtt\agent\*.ini	Settings files for the Agent Collector service
<i>environment-folder</i> #2\jplpc\agtt\store\*.ini	Settings files for the Agent Store service
<i>environment-folder</i> #2\jplpc\agtt\agent\jpcapp#1	Application definition file (version 09-00 or earlier)
<i>environment-folder</i> #2\jplpc\agtt\agent\jpcapp2#1	Application definition file (version 09-00 or later)
<i>environment-folder</i> #2\jplpc\agtt\agent\jpcuser\*.ini	JPCUSER definition files

#1

This file does not exist unless process monitoring is set.

#2

*environment-folder* is the folder that is created on the shared disk when a logical host is created. If no logical host has been created, backup is not performed.

### Important

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.

## 4.8.2 Restoration

To restore 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.

For a logical host environment, the following conditions are also required:

- A logical host environment has already been created, and the logical host name and environment folder have the same configuration as when they were backed up.
- The logical host definition file has already been imported to the standby node.

### Important

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.

## 4.9 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 distribution media 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.

### 4.9.1 Settings for browsing manuals

#### (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\language-code\PFM-Agent-help-id
  - For UNIX: /opt/jp1pcwebcon/doc/language-code/PFM-Agent-help-id
- For details about Help IDs, see [B. List of Identifiers](#).

3. Copy the following files and directories from the manual distribution media to the directory created above.

For HTML manuals

For Windows: All HTML files, CSS files, and the FIGURE folder, in *applicable-drive*\MAN\3021\materials-number (such as 03004A0D)

For UNIX: All HTML files, CSS files, and the FIGURE directory, in /*distribution-media-mount-point*/MAN/3021/*materials-number* (such as 03004A0D)

For PDF manuals

For Windows: PDF files in *applicable-drive*\MAN\3021\materials-number (such as 03004A0D)

For UNIX: PDF files in /*distribution-media-mount-point*/MAN/3021/*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.

4. Restart PFM - Web Console.

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

Perform installation by using setup.exe on the distribution media, or by directly copying the HTML, CSS, PDF, and GIF files to the desired folder. For the HTML manual, use the following directory configuration:

html (.HTML files and CSS files)

└─ FIGURE (GIF files)

## 4.9.2 Browsing a manual

To browse a 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.

Note on 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.

## 4.10 Notes regarding operation

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- For notes on executing the `jpctool service list` command for the Agent Collector service or Agent Store service, see the chapter that describes commands in the manual *JP1/Performance Management Reference*.
- For notes on executing the `jpccspm start` command or the `jpccspm stop` command for PFM - Agent for Platform, see the chapter that describes commands in the manual *JP1/Performance Management Reference*.
- Hitachi Tuning Manager cannot monitor Performance Management.
- If a non-Hitachi performance counter is added, verify that the added performance counter does not affect other programs.
- A "Microsoft-Windows-PerfNet2001" event might be output to the Windows application log. However, this will affect collection of performance data only if performance data for the Browser Overview (PI\_BRSR) record is being collected.

If an error message is repeatedly output, restarting PFM - Agent for Platform might eliminate the problem.

- Due to the effects of a virus detection program, file access permission for the files and folders used by Performance Management might be locked by the exclusion control function. As a result, the following symptoms might occur:
  - Performance Management cannot be started.
  - Performance information cannot be collected, or collection is delayed.
  - A Performance Management command terminates abnormally.
  - Logs cannot be output, or a problem cannot be investigated.

If you want to check viruses while Performance Management is running, deselect the files (including the files in the new storage location if you changed the storage location of the Store database) under the installation folder of Performance Management.

If you want to check viruses when Performance Management stops and then to restart Performance Management, confirm that the virus check for the files under the installation folder of Performance Management (including the files in the new storage location if you changed the storage location of the Store database) is complete.

- When PFM - Agent for Platform starts, the following service automatically starts.
  - WMI Performance Adapter Service

# 5

## Operation in a Cluster System

This chapter describes the installation and setup of PFM - Agent for Platform in a cluster system, and the procedures for operating PFM - Agent for Platform in a cluster system.



## 5.1 Configuration of PFM - Agent for Platform in a cluster system

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This section describes the configuration in which PFM - Agent for Platform is applied to an HA cluster system. For an overview of cluster systems and details about the system configuration for operating Performance Management in a cluster system, see the chapter that describes construction and operations in a cluster system in the *JP1/Performance Management User's Guide*.

In this chapter, the term *cluster system* refers to an HA cluster system.

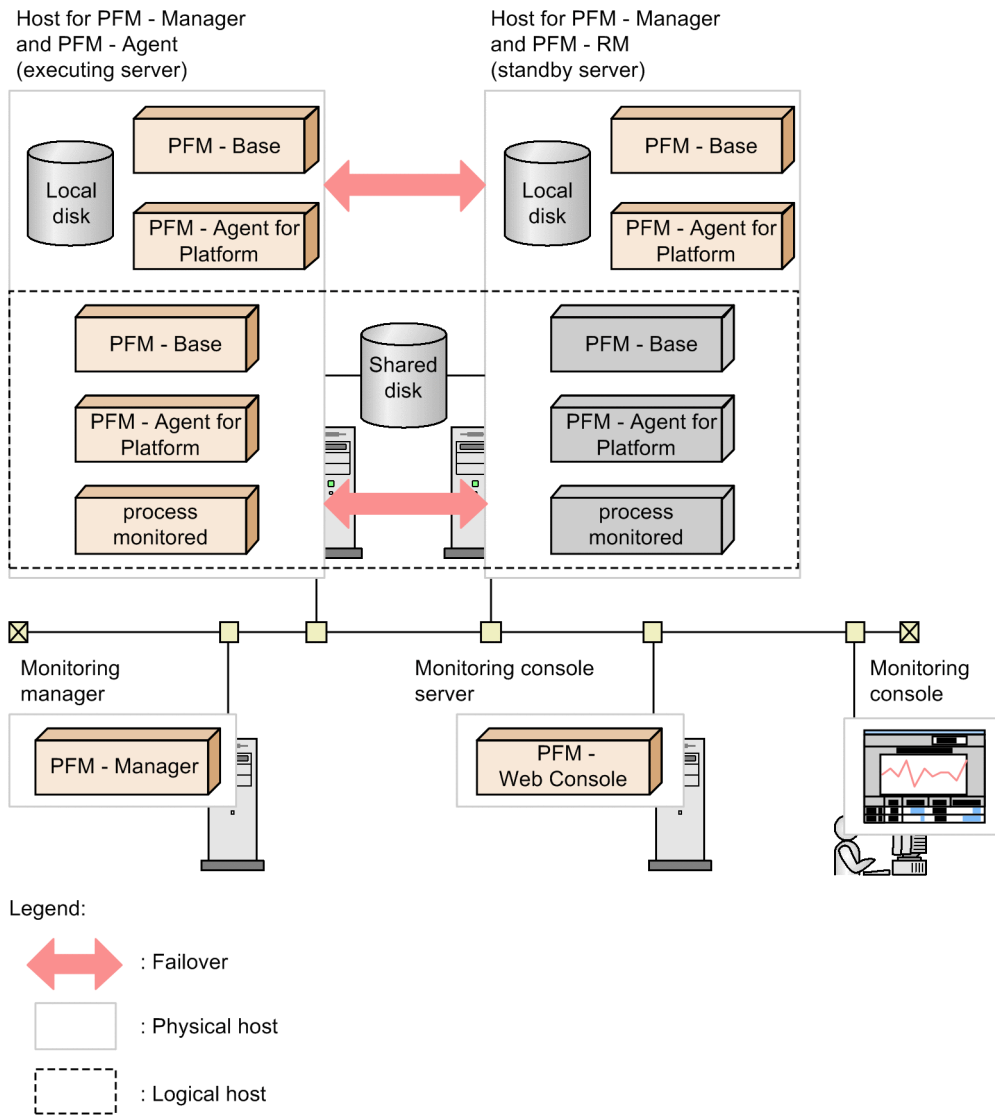
If you operate PFM - Agent for Platform in a cluster system, you can perform a failover if an error occurs, thus improving availability.

To operate PFM - Agent for Platform in a cluster system, you need to create an environment in which the same PFM - Agent for Platform can be executed on both the executing node and standby node. You also need to store a set of data, including data files, configuration files, and log files, on the shared disk.

Provided that you are monitoring processes that are running in cluster configuration, we recommend that you operate PFM -Agent for Platform by using the logical host.

To operate PFM - Agent for Platform in a cluster system, use the configuration in the following figure.

Figure 5–1: Example configuration of PFM - Agent for Platform in a cluster system



Necessary data such as definition information and performance information is stored on the shared disk, and is inherited in the event of a failover. If a single logical host contains multiple Performance Management programs, they use the same shared folder.

Multiple instances of PFM - Agent for Platform can be executed on a single node. For a configuration that contains multiple cluster configurations (an active-active configuration), execute PFM - Agent for Platform in each logical host environment. Each instance of PFM - Agent for Platform runs independently and can perform a failover separately.

## 5.2 Processing at failover

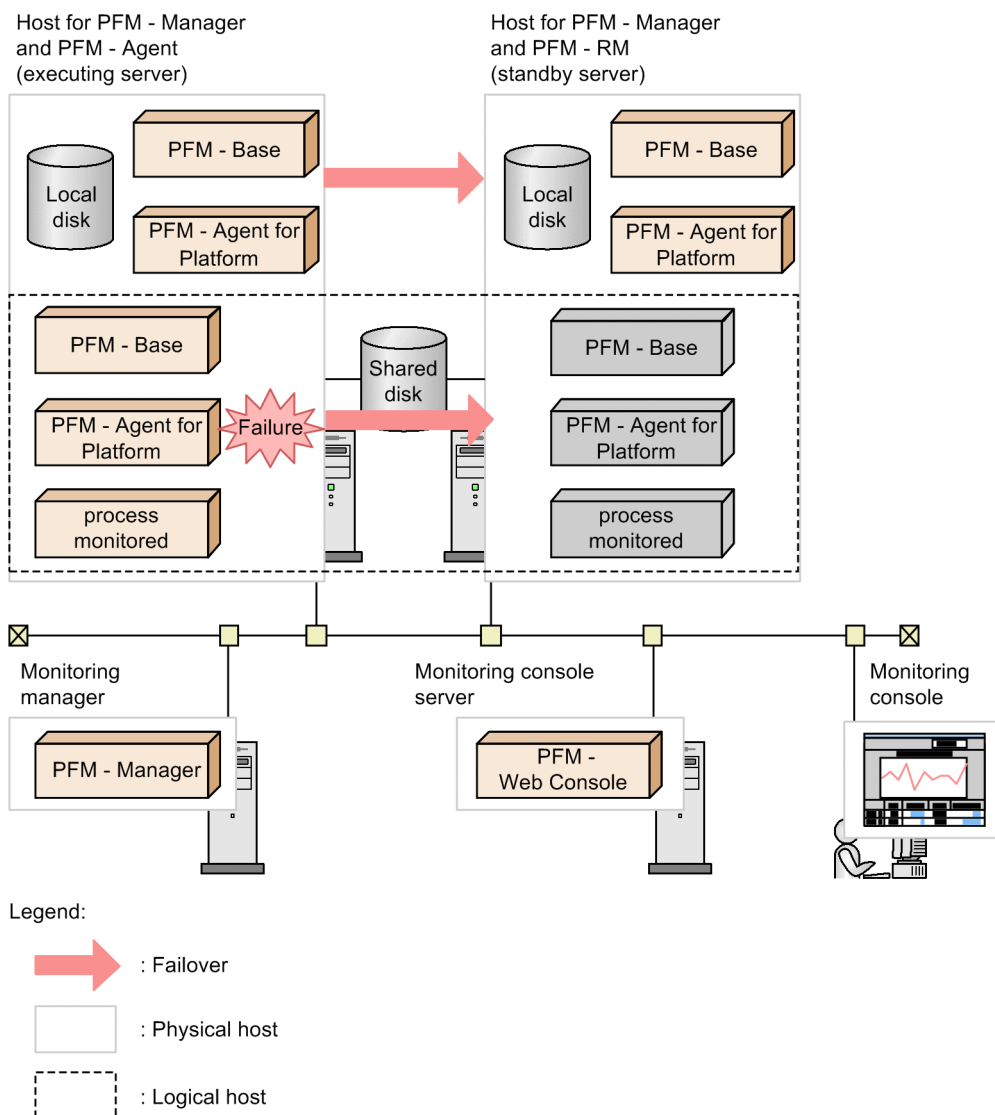
If a failure occurs on the executing host, control transfers to the standby host.

This section describes failover processing in the event of a failure in PFM - Agent for Platform. This section also describes how a failure of PFM - Manager affects PFM - Agent for Platform.

### 5.2.1 Failover when an error occurs on a PFM - Agent host

The following figure shows the processing when failover occurs on a host that is running PFM - Agent for Platform.

Figure 5–2: Processing when failover occurs on the PFM - Agent host



If PFM - Web Console is used while PFM - Agent for Platform is engaged in failover processing, the message `There was no answer (-6)` is displayed. When this message is displayed, wait until the failover processing is completed.

After PFM - Agent for Platform has failed over, an attempt to use PFM - Web Console connects you to the PFM - Agent for Platform that has started at the target node.

## 5.2.2 Effects of PFM - Manager stopping, and corrective action

The stopping of PFM - Manager affects the entire Performance Management system.

PFM - Manager provides centralized management of agent information for the instances of PFM - Agent for Platform running on all the nodes. It also controls both alarm event notifications when thresholds are exceeded during performance monitoring by PFM - Agent for Platform, and the execution of actions based on alarm events.

The following table describes how PFM - Agent for Platform is affected when PFM - Manager is stopped, and the corrective action to be taken.

Table 5–1: Effects of PFM - Manager stopping

Program name	Effects	Action
PFM - Agent for Platform	<p>If PFM - Manager is stopped while PFM - Agent for Platform is running, the following occurs:</p> <ul style="list-style-type: none"><li>• Collection of performance data continues.</li><li>• Because alarm events are not reported to PFM - Manager, the alarm events for each alarm definition are saved. PFM - Agent for Platform retries notification until PFM - Manager starts. When the number of saved alarm events exceeds 3, the oldest alarm event is overwritten. If PFM - Agent for Platform stops, the saved alarm events are deleted.</li><li>• Notifications of alarm status already sent to PFM - Manager are reset when PFM - Manager restarts. After the reset, PFM - Manager checks the status of PFM - Agent for Platform and then refreshes the alarm statuses.</li><li>• An attempt to stop PFM - Agent for Platform takes time because notification of this event cannot be sent to PFM - Manager.</li></ul>	<p>Start PFM - Manager. Active instances of PFM - Agent for Platform can continue to operate. Because alarms might not be notified as expected, after PFM - Manager has been recovered, check the <code>KAVE00024-I</code> messages that have been output to the common message log.</p>

Evaluate your operating method based on how the stopping of PFM - Manager affects the system. Apart from system crashes, events such as configuration changes or maintenance might require you to stop PFM - Manager. We recommend that you perform maintenance at a time that least affects operations.

## 5.3 Installation and setup in a cluster system

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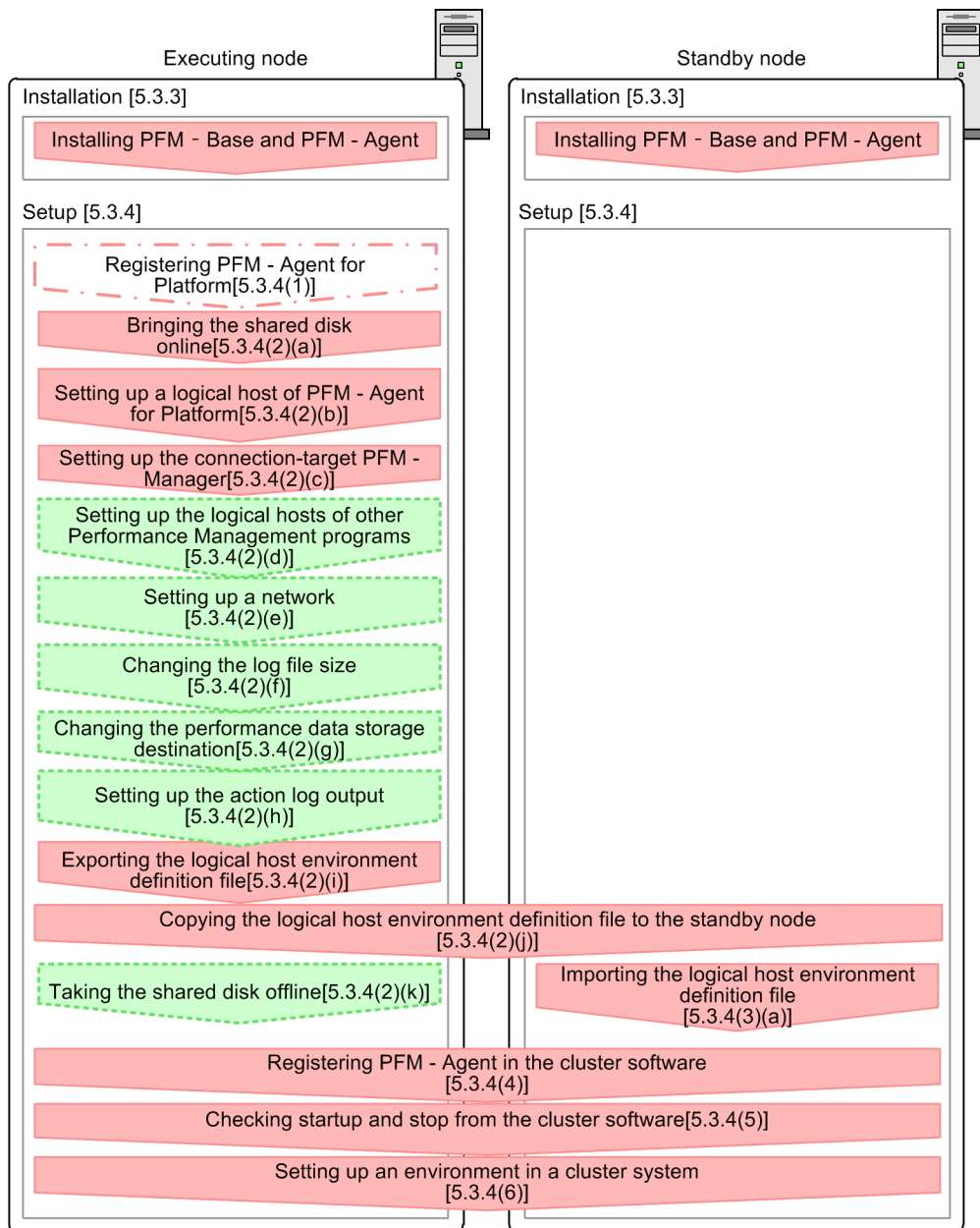
This section describes the procedures for installing and setting up PFM - Agent for Platform in a cluster system.

For details about the procedures for installing and setting up PFM - Manager, see the chapter that describes construction and operation in a cluster system in the *JP1/Performance Management User's Guide*.

### 5.3.1 Flow for installation and setup in a cluster system

The following figure shows the flow of installing and setting up PFM - Agent for Platform for logical host use in a cluster system.

Figure 5–3: Flow of installing and setting up PFM - Agent for Platform in a cluster system



Legend:

- : Required setup item
- : Optional setup item
- : Setup item that is required depending on the situation
- [ ] : Reference

Note that for setup commands that require user input, you can select whether to execute such commands interactively or non-interactively.

If you execute a setup command interactively, you need to enter values according to command directives.

If you execute a setup command non-interactively, user input during command execution is not required because such input can be provided instead through values in option specifications or in definition files. Also, batch processing or remote execution can automate setup operations to reduce administrator workload and operating costs.

For details about commands, see the chapter that explains the commands in the manual *JP1/Performance Management Reference*.

## 5.3.2 Items to be checked before installation in a cluster system

This subsection describes the prerequisites, required information, and notes you must confirm before you start installation and setup.

### (1) Prerequisites

To use PFM - Agent for Platform in a cluster system, the following prerequisites must be satisfied.

#### (a) Performance Management version

To use PFM - Agent for Platform in a cluster system, JP1/Performance Management - Base 11-01 or later or JP1/Performance Management - Manager 11-01 or later is required in devices where PFM - Agent for Platform is installed.

#### (b) Cluster system

Confirm that the following conditions are met:

- The cluster system is controlled by the cluster software.
- The cluster software is configured to control the startup and termination of PFM - Agent for Platform running on logical hosts.
- Both the executing node and standby node are configured to suppress error reporting to Microsoft.

In Windows, a dialog box for reporting an error to Microsoft is displayed when an application error occurs. Because this dialog box can prevent failover from occurring, you need to suppress error reporting. If error reporting is not currently suppressed, specify the following setting:

Windows Server 2012:

1. Select **Control Panel, System and Security, Action Center**, and then **Maintenance**.
2. Under **Check for solutions to problem reports**, select **Settings**.
3. In the Windows Error Reporting Configuration dialog box, select **I don't want to participate, and don't ask me again**.
4. Click the **OK** button.

Windows Server 2016 and later:

1. Right-click the Windows **Start** menu and then choose **Run** from the displayed menu.
2. Enter `gpedit.msc`, and then click the **OK** button.  
The Local Group Policy Editor appears.
3. Click **Computer Configuration, Administrative Templates, Windows Components**, and then **Windows Error Reporting**.
4. In the right pane, right-click **Disable Windows Error Reporting**, and then from the displayed menu, choose **Edit**.  
The setting window appears.
5. In the setting window, select the **Enabled** check box.
6. Click the **OK** button.

#### (c) Shared disk

Make sure that the following conditions are satisfied:

- A shared disk is available for each logical host, and information can be inherited from the executing node to the standby node.
- The shared disk is physically connected to each node by via Fibre Channel or SCSI.  
Performance Management does not support configurations in which a disk replicated by a network drive or via a network is used as a shared disk.
- The shared disk can be forced offline (for example, by the cluster software) to achieve failover even if some processes using the shared disk continue due to a problem.
- Instances of Performance Management programs on the same logical host use the same folder name on the shared disk. Note that you can change the location of the Store database to another folder on the shared disk.

## (d) Logical host names and logical IP addresses

Make sure that the following conditions are satisfied:

- Each logical host has a logical host name and a corresponding logical IP address, and this information can be inherited from the executing node to the standby node.
- The logical host names and logical IP addresses are set in the `hosts` file and name server.
- If DNS is used, the host name without the domain name is used as the logical host name, not the FQDN name.
- All physical and logical host names are unique within the system.

### Important

- Do not specify a physical host name (that is, a host name displayed by the `hostname` command) as a logical host name. If one is specified, normal communication processing might not be achieved.
- The logical host name must consist of 1 to 32 characters.
- The logical host name must consist of alphanumeric characters, hyphens (-), and underscores (\_) only.
- For the logical host name, you cannot specify `localhost`, an IP address, or a host name beginning with a hyphen (-).

## (e) Settings when IPv6 is used

Because Performance Management supports IPv6 network configurations in addition to IPv4 environments, you can use Performance Management in a network configuration that contains both IPv4 and IPv6 environments. PFM - Agent for Platform can communicate with PFM - Manager by using IPv6.

Note, however, that this applies only when Windows or Linux runs on a host with PFM - Manager installed.

For details about the scope of application for communication in IPv4 and IPv6 environments, see [K. Communication in IPv4 and IPv6 Environments](#).

To use IPv6 for communication, you need to enable the use of IPv6 on the PFM - Agent host before installing PFM - Agent for Platform. If you want to check whether the use of IPv6 is enabled, execute the `jpccconf ipv6 display` command. After confirming that IPv6 is enabled on the PFM - Agent host, you need to enable the use of IPv6 on both the PFM - Manager host and the PFM - Agent host by using the `jpccconf ipv6 enable` command. The following describes when you need to execute this command.

Cases when the `jpccconf ipv6 enable` command needs to be executed:

- When switching from an IPv4 environment to an IPv6 environment on each host



- When switching the PFM - Manager environment from IPv4 to IPv6 in an environment in which both IPv4 and IPv6 are used

Cases when the `jpccconf ipv6 enable` command does not need to be executed:

- When each host already operates in an IPv6 environment
- When both IPv4 and IPv6 environments are used and PFM - Manager operates in an IPv6 environment

The following shows an example of executing the `jpccconf ipv6 enable` command:

```
jpccconf ipv6 enable
```

Execute the `jpccconf ipv6 enable` command on both the executing node and the standby node.

For details about the `jpccconf ipv6 enable` command, see the chapter that explains the commands in the manual *JPI/Performance Management Reference*. For details about the conditions or occasions for executing the `jpccconf ipv6 enable` command, see the chapter that describes network configuration examples in an environment that includes IPv6 in the *JPI/Performance Management Planning and Configuration Guide*.

## (2) Information required to set up PFM - Agent for Platform for logical host use

To operate PFM - Agent for Platform on a logical host, you must provide the information in the following table, in addition to the environment information that is needed for normal setup of PFM - Agent for Platform.

Table 5–2: Information required to set up PFM - Agent for Platform for logical host use

No.	Item	Example
1	Logical host name	jp1-halaop
2	Logical IP address	172.16.92.100
3	Shared disk	S:\jp1

When multiple Performance Management programs are installed on a single logical host, the programs share the same folder on the shared disk.

For details about the capacity required on the shared disk, see the *Release Notes*.

## (3) Note on making the logical host subject to failover by PFM - Agent for Platform

If you employ a system configuration in which PFM - Agent for Platform operates on a logical host, you must evaluate whether the entire logical host is subject to failover if a PFM - Agent for Platform failure occurs.

If failover of the entire logical host occurs, other job applications running on the same logical host also fail over, which might affect the job.

We recommend that you use one of the following cluster software settings so that errors on PFM - Agent for Platform do not affect the operations of other job applications:

- Do not monitor operation of PFM - Agent for Platform
- Do not allow detection of errors in PFM - Agent for Platform to result in failover

### 5.3.3 Installation procedure in a cluster system

Install PFM - Base and PFM - Agent for Platform on both executing and standby nodes.



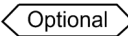
The installation target is the local disk. Do not install PFM - Base or PFM - Agent for Platform on a shared disk.

The installation procedure is the same as for a non-cluster system. For details about the installation procedure, see [4. Installation and Setup in Windows](#).

### 5.3.4 Setup procedure in a cluster system

This subsection describes the setup required to operate Performance Management in a cluster system.

There are setup procedures for the executing node and for the standby node. Set up the executing node first, and then set up the standby node.

Note that the icon  indicates an item that must be performed for the executing node, and the icon  indicates an item that must be performed for the standby node. The icon  indicates either of the following setup items:

- A setup item that is required depending on the environment that is used
- A setup item that is used for changing the default setting

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

The procedure for registering PFM - Agent for Platform is the same as for a non-cluster system. For details about this procedure, see [4. Installation and Setup in Windows](#).

#### (2) Setting up a logical host of PFM - Agent

You must set up a logical host environment for PFM - Agent for Platform on the executing node.

Note:

Before starting this setup, stop all services of Performance Management programs in the entire Performance Management system. For details about how to stop services, see the chapter that describes startup and termination of Performance Management in the *JPI/Performance Management User's Guide*.

##### (a) Bringing the shared disk online

Make sure that the shared disk is online. If it is not online, bring it online by using a cluster software operation or volume manager operation.

##### (b) Setting up a logical host of PFM - Agent for Platform

Execute the `jpccnf ha setup` command to create a logical host environment. This command creates a logical host environment by copying necessary data to the shared disk and setting definitions for a logical host.

To set up a logical host of PFM - Agent for Platform:

1. Execute the `jpccnf ha setup` command to create a logical host environment for PFM - Agent for Platform.  
Execute the command as follows:

```
jpccconf ha setup -key Windows -lhost jp1-halaop -d S:\jp1
```

Use the `-lhost` option to specify the logical host name. This example specifies `jp1-halaop` as the logical host name. If you use DNS, specify the logical host name without the domain name.

Specify the folder name on the shared disk in the environment folder name of the `-d` option. For example, if `-d S:\jp1` is specified, `S:\jp1\jp1pc` is created and then files for the logical host environment file are created.

2. Execute the `jpccconf ha list` command to check the logical host settings.

Execute the command as follows:

```
jpccconf ha list -key all
```

Make sure that the created logical host environment is valid.

### (c) Setting up the connection-target PFM - Manager Executing system

Execute the `jpccconf mgrhost define` command to set up the PFM - Manager that manages PFM - Agent for Platform.

To set up the connection-target PFM - Manager:

1. Execute the `jpccconf mgrhost define` command to set the connection-target PFM - Manager.

Execute the command as follows:

```
jpccconf mgrhost define -host jp1-hal -lhost jp1-halaop
```

Specify the host name of the connection-target PFM - Manager in the `-host` option. If the connection-target PFM - Manager runs on a logical host, specify the logical host name of the connection-target PFM - Manager in the `-lhost` option. This example specifies `jp1-hal` as the PFM - Manager's logical host name.

Use the `-lhost` option to specify the logical host name of PFM - Agent for Platform. This example specifies `jp1-halaop` as the logical host name of PFM - Agent for Platform.

Although the above example shows interactive execution, you can also execute the `jpccconf mgrhost define` command non-interactively. For details about the `jpccconf mgrhost define` command, see the chapter that explains the commands in the manual *JPI/Performance Management Reference*.

### (d) Setting up the logical hosts of other Performance Management programs Executing system

Optional

If you have other PFM - Manager or PFM - Agent programs to be set up on the same logical host in addition to PFM - Agent for Platform, set them up at this stage.

For details about the setup procedure, see the chapter that describes operations in a cluster system in the *JPI/Performance Management User's Guide* or in the applicable PFM - Agent manual.

### (e) Setting up a network Executing system Optional

You must set up the network when Performance Management programs run in a network environment that uses a firewall.

The two items below are specified in the network environment settings. Change the settings if necessary.

- IP addresses

You must specify IP addresses if you use Performance Management in a network connected to multiple LANs. To specify the IP addresses, directly edit the contents of the `jpchosts` file.

After editing the `jpchosts` file, copy it from the executing node to the standby node.

For details about how to set IP addresses, see the chapter that describes installation and setup in Windows in the *JPI/Performance Management Planning and Configuration Guide*.

- Port numbers

If you establish communication between Performance Management programs via a firewall, use the `jpccconf port define` command to set the port numbers.

For details about how to set port numbers, see the chapter that describes installation and setup in Windows, and the chapter that describes construction and operations in a cluster system, in the *JPI/Performance Management Planning and Configuration Guide*.

## (f) Changing the log file size Executing system Optional

The operating status of Performance Management is output to a log file unique to Performance Management. This log file is called the *common message log*. This setting is required only when you wish to change this file size.

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

## (g) Changing the performance data storage destination Executing system Optional

This setting is required only when you want to change the folder where the database of performance data managed by PFM - Agent is saved, backed up, exported, or imported. For details about how to specify the setting, see [4. Installation and Setup in Windows](#).

## (h) Setting up the action log output Executing system Optional

This setting is required to output action log data when an alarm occurs. Action log data is history information that is output in cooperation with the alarm function related to exceeded thresholds, such as for system load.

For details about how to set up the action log, see [1. Outputting Action Log Data](#).

## (i) Exporting the logical host environment definition file Executing system

After you have created a logical host environment for PFM - Agent for Platform, you must export the environment definition to a file. This export processing involves output of the definition information for the Performance Management program set up on the logical host to a file in the batch mode. If you are setting up other Performance Management programs on the same logical host, export the environment definitions after all setup processes have been completed.

To export the logical host environment definition:

1. Execute the `jpccconf ha export` command to export the logical host environment definition.

Output to an export file the definition information that has been created so far for the logical host environment. You can assign any name to the export file.

For example, to export the logical host environment definitions to the `lhostexp.txt` file, execute the following command:

```
jpccconf ha export -f lhostexp.txt
```

Although the above example shows interactive execution, you can also execute the `jpccconf ha export` command non-interactively. For details about the `jpccconf ha export` command, see the chapter that explains the commands in the manual *JPI/Performance Management Reference*.

## (j) Copying the logical host environment definition file to the standby node Executing system

Standby system

Copy the logical host environment definition file exported in (i) *Exporting the logical host environment definition file* from the executing node to the standby node.

## (k) Taking the shared disk offline Executing system Optional

Take the shared disk offline by using a cluster software operation or volume manager operation, to complete the task. If you plan to continue using the shared disk, there is no need to take it offline.

## (3) Setting up a logical host environment for the standby node Standby system

Set up a logical host environment for PFM - Agent for Platform on the standby node.

### (a) Importing the logical host environment definition file Standby system

Import the export file that was copied from the executing node, to the standby node.

To specify settings for executing (on the standby node) the Performance Management program of the logical host created on the executing node, use the `jpccconf ha import` command. If multiple Performance Management programs have been set up for a single logical host, the settings for all the programs are imported in batch mode.

When executing this command, there is no need to keep the shared disk in online status.

To import the logical host environment definition file:

1. Execute the `jpccconf ha import` command to import the logical host environment definition.

Execute the command as follows:

```
jpccconf ha import -f lhostexp.txt
```

Although the above example shows interactive execution, you can also execute the `jpccconf ha import` command non-interactively. For details about the `jpccconf ha import` command, see the chapter that explains the commands in the manual *JPI/Performance Management Reference*.

This command changes settings to make the environment for the standby node the same as in the export file. As a result, setup is performed for starting PFM - Agent for Platform on the logical host.

If fixed port numbers were set by the `jpccconf port define` command during setup, they are also set in the same manner.

2. Execute the `jpccconf ha list` command to check the logical host settings.

Execute the command as follows:

```
jpccconf ha list -key all
```

Make sure that the displayed information is the same as when the `jpccconf ha list` command is executed on the executing node.

## (4) Registering PFM - Agent in the cluster software Executing system Standby system

To run Performance Management programs in a logical host environment, you must register them in the cluster software, and set up the environment so that the Performance Management programs start and terminate from the cluster software.

This subsection describes the settings for registering PFM - Agent for Platform in the cluster software.

For PFM - Agent for Platform, register the services listed in the following table in the cluster software.

Table 5–3: PFM - Agent for Platform services to be registered in the cluster software

No.	Name	Service name	Dependency
1	PFM - Agent Store for Windows [ <i>logical host name</i> ]	JP1PCAGT_TS [ <i>logical host name</i> ]	IP address resource Physical disk resource
2	PFM - Agent for Windows [ <i>logical host name</i> ]	JP1PCAGT_TA [ <i>logical host name</i> ]	Cluster resources shown in no. 1 above
3	PFM - Action Handler [ <i>logical host name</i> ]	JP1PCMGR_PH [ <i>logical host name</i> ]	IP address resource Physical disk resource

If the logical host name is `jp1-halaop`, the service is PFM - Agent for Platform [`jp1-halaop`], and the service name is `JP1PCAGT_TS [jp1-halaop]`.

For WSFC, register these services as WSFC resources. Set each resource as follows:

- In **Resource Type**, register the resource as **Generic Service**.
- Set **Dependencies** as shown in *Table 5-3 PFM - Agent for Platform services to be registered in the cluster software*.
- Do not set **Startup parameters** or **Registry Replication**.
- Set the **Policies** tab in Properties according to whether you want a failover to occur in the event of a Performance Management program failure.

For example, to trigger a failover when a failure occurs in PFM - Agent for Platform, set the **Policies** tab as follows:

- Select the **If resource fails, attempt restart on current node** radio button.
- Select the **If restart is unsuccessful, fail over all resources in this service or application** check box<sup>#</sup>.
- In principle, set **Maximum restarts in the specified period:** to **3**.

#

In the case of Windows Server 2012 or later, the **If restart is unsuccessful, fail over all resources in this Role** check box is used instead.

Note:

A service registered in the cluster is started and stopped from the cluster. Therefore, make sure that **Startup type** is set to **Manual** so that the service will not start automatically during OS startup. Immediately after setup is performed by the `jpccconf ha setup` command, the service is set to **Manual**.

For dependency settings specified if PFM - Agent for Platform is on the PFM - Manager logical host, see the chapter that describes construction and operation in a cluster system in the *JP1/Performance Management User's Guide*.

## (5) Checking startup and stop from the cluster software

Executing system

Standby system

Make sure that Performance Management programs function normally by starting and terminating the programs from the cluster software on each node.

## (6) Setting up an environment in a cluster system

Executing  
system

Standby  
system

When you have finished setting up Performance Management programs, set up their environment so that PFM - Web Console can display operating status reports for monitored programs as appropriate to the operations. You must also set up the environment so that notifications can be sent to the user in the event of a problem in a monitored program.

For details about how to set up an environment for the Performance Management programs, see the chapter that describes construction and operation in a cluster system in the *JP1/Performance Management User's Guide*.

To transfer an environment used in a physical environment to a logical environment, change the settings to prevent unnecessary records from being collected in each of the physical and logical environments.

## 5.4 Uninstallation and unsetup in a cluster system

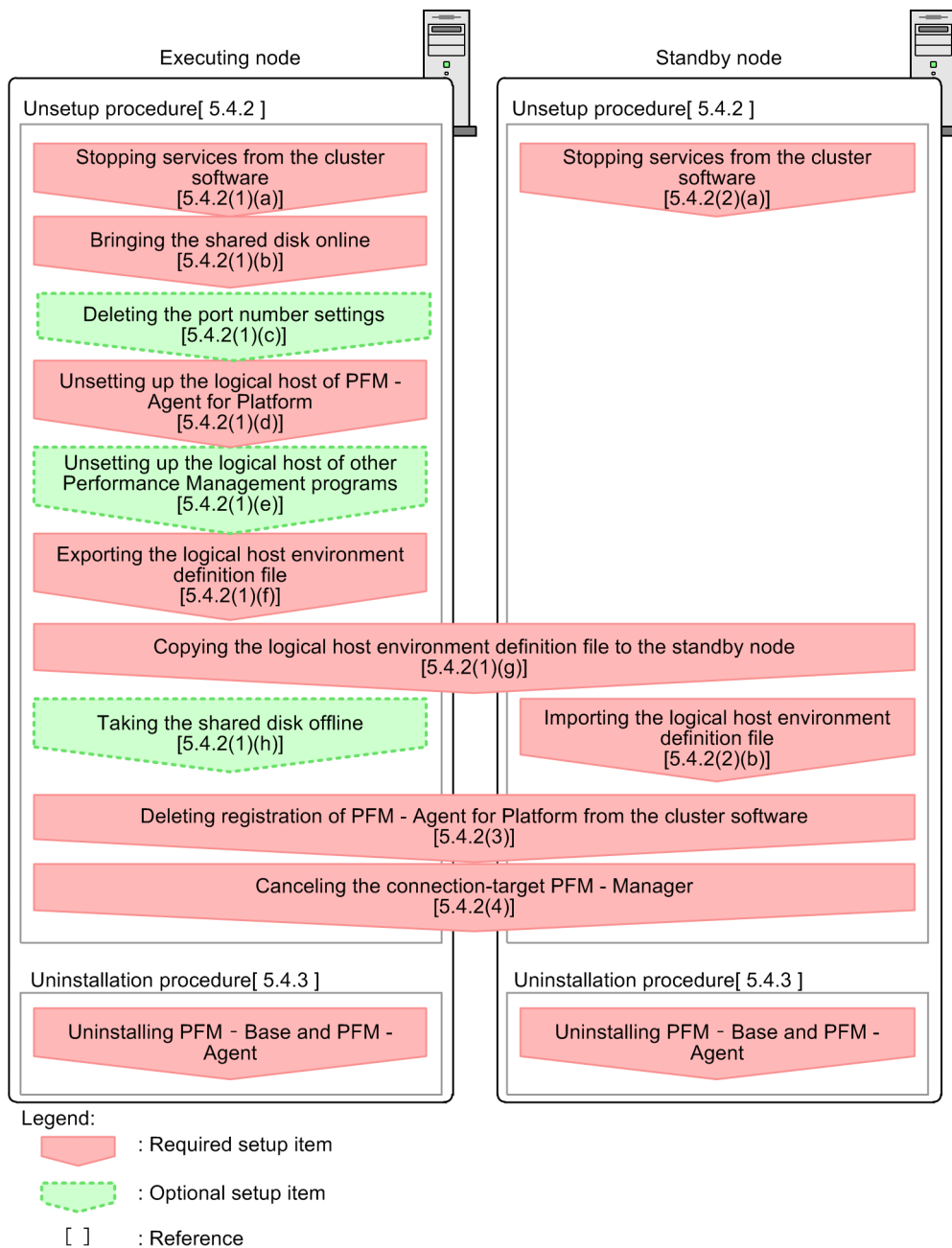
This section describes how to uninstall and unsetup PFM - Agent for Platform that is running in a cluster system.

For details about how to uninstall and unsetup PFM - Manager, see the chapter that describes construction and operation in a cluster system in the *JPI/Performance Management User's Guide*.

### 5.4.1 Flow of uninstallation and unsetup in a cluster system

The following figure shows the flow of uninstalling and unsetting up PFM - Agent for Platform that is running in a cluster system.



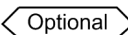
Figure 5–4: Flow of uninstalling and unsetting up PFM - Agent for Platform in a cluster system





## 5.4.2 Unsetup procedure in a cluster system

Unset up the logical host environment. There are unsetup procedures for the executing node and for the standby node. Unset up the executing node first, and then the standby node.

Note that the icon  indicates an item that must be performed for the executing node, and the icon  indicates an item that must be performed for the standby node. The icon  indicates either of the following setup items:

- A setup item that is required depending on the environment that is used
- A setup item that is used for changing the default setting

The following describes the unsetup procedure for PFM - Agent for Platform.

### (1) Unsetting up the logical host environment on the executing node

#### (a) Stopping services from the cluster software

Stop the Performance Management programs and services that are running on the executing nodes from the cluster software. For details about how to stop the programs and services, see the cluster software documentation.

#### (b) Bringing the shared disk online

Make sure that the shared disk is online. If it is not online, bring it online by using a cluster software operation or volume manager operation.

#### (c) Deleting the port number settings

This procedure is required only when the `jpccconf port define` command was used to set port numbers during setup in an environment that uses a firewall.

For details about how to delete port numbers, see the chapter that describes installation and setup in Windows and the chapter that describes operations in a cluster system in the *JPI/Performance Management Planning and Configuration Guide*.

#### (d) Unsetting up the logical host of PFM - Agent for Platform

To unset up the logical host of PFM - Agent for Platform:

Note:

If a logical host environment is deleted while the shared disk is offline, the logical host settings are deleted from the physical host, but the folders and files are not deleted from the shared disk. In such cases, you must bring the shared disk online and then manually delete the `jp1pc` folder under the environment folder.

1. Execute the `jpccconf ha list` command to check the logical host settings.

Execute the command as follows:

```
jpccconf ha list -key all -lhost jp1-halaop
```

You must check the current settings before you unset up the logical host environment. Check information such as the logical host name and the shared disk path.

2. Execute the `jpccconf ha unsetup` command to delete the logical host information for PFM - Agent for Platform.

Execute the command as follows:

```
jpccconf ha unsetup -key Windows -lhost jp1-halaop
```

For details about the `jpccconf ha unsetup` command, see the chapter that explains commands in the manual *JPI/Performance Management Reference*.

The `jpccconf ha unsetup` command deletes the settings for starting PFM - Agent for Platform on the logical host. This command also deletes files for the logical host from the shared disk.

3. Execute the `jpccconf ha list` command to check the logical host settings.

Execute the command as follows:

```
jpccconf ha list -key all
```

Make sure that PFM - Agent for Platform has been deleted from the logical host environment.

## (e) Unsetting up the logical host of other Performance Management programs Executing system

Optional

If you have other PFM - Agent programs to be unset up from the same logical host (in addition to PFM - Agent for Platform), they must be unset up at this time.

For details about the unsetup procedure, see the chapter that describes operations in a cluster system in the *JPI/Performance Management User's Guide* or in the applicable PFM - Agent manual.

## (f) Exporting the logical host environment definition file Executing system

After you have deleted PFM - Agent for Platform from the logical host, you must export the environment definition to a file.

Performance Management uses a method that matches the environment of the standby system to that of the executing system by exporting and importing the environment definitions.

The Performance Management definitions from before the deletion still exist on the standby node. When environment definitions exported from the executing node are imported to the standby node, Performance Management compares the definitions, and then automatically deletes the differences from the standby node. Thus, you do not have to delete the environment definitions from the standby node.

To export the logical host environment definition file:

1. Execute the `jpccconf ha export` command to export the logical host environment definition.

Execute the command as follows:

```
jpccconf ha export -f lhostexp.txt
```

Although the above example shows interactive execution, you can also execute the `jpccconf ha export` command non-interactively. For details about the `jpccconf ha export` command, see the chapter that explains the commands in the manual *JPI/Performance Management Reference*.

## (g) Copying the logical host environment definition file to the standby node Executing system

Standby system

Copy the logical host environment definition file exported in *(f) Exporting the logical host environment definition file* from the executing node to the standby node.

## (h) Taking the shared disk offline Executing system Optional

Using a cluster software operation or volume manager operation, take the shared disk offline to complete the task. If you plan to continue using the shared disk, there is no need to take it offline.

## (2) Unsetting up the logical host environment on the standby node Standby system

Copy the file you exported from the executing node to the standby node, and then unset up the logical host environment on the standby node. Note that there is no need to take the shared disk online on the standby node during unsetup.

The following describes the procedure.

### (a) Stopping services from the cluster software Standby system

Stop the Performance Management programs and services that are running on the standby nodes from the cluster software. For details about how to stop the programs and services, see the cluster software documentation.

### (b) Importing the logical host environment definition file Standby system

Import the export file copied from the executing node, onto the standby node to apply the file to the standby node. Note that there is no need to take the shared disk online on the standby node during the import operation.

To import the logical host environment definition file:

1. Execute the `jpccconf ha import` command to import the logical host environment definition.

Execute the command as follows:

```
jpccconf ha import -f lhostexp.txt
```

Although the above example shows interactive execution, you can also execute the `jpccconf ha import` command non-interactively. For details about the `jpccconf ha import` command, see the chapter that explains the commands in the manual *JP1/Performance Management Reference*.

This command changes settings to make the environment for the standby node the same as in the export file. As a result, the settings for starting PFM - Agent for Platform on the logical host are deleted. If you have unset up other Performance Management programs on the logical host, these settings are also deleted. If fixed port numbers were set by using the `jpccconf port define` command during setup, they are also deleted.

2. Execute the `jpccconf ha list` command to check the logical host settings.

Execute the command as follows:

```
jpccconf ha list -key all
```

Make sure that the displayed information is the same as when the `jpccconf ha list` command is executed on the executing node.

## (3) Deleting registration of PFM - Agent for Platform from the cluster software Executing system Standby system

Delete the settings related to PFM - Agent for Platform on the logical host from the cluster software.

For details about how to delete the settings, see the cluster software documentation.

## (4) Canceling the connection-target PFM - Manager

Executing system

Standby system

To cancel the connection-target PFM - Manager, you need to delete the service information of the PFM - Agent for Platform that is connected to that PFM - Manager.

For details about how to delete service information, see the section describing how to delete service information in the chapter that explains installation and setup (in Windows) in the *JP1/Performance Management Planning and Configuration Guide*.

To change the connection target to another PFM - Manager, see [5.3.4\(2\)\(c\) Setting up the connection-target PFM - Manager](#).

### 5.4.3 Uninstallation procedure in a cluster system

Uninstall PFM - Base and PFM - Agent for Platform.

The uninstallation procedure is the same as for a non-cluster system. For details, see [4. Installation and Setup in Windows](#).

Notes:

- When you uninstall PFM - Agent for Platform, stop all the Performance Management programs and services on the node where PFM - Agent for Platform is to be uninstalled.
- If you uninstall PFM - Agent for Platform without deleting the logical host environment, the environment folder might remain. In this case, delete the environment folder manually.

## 5.5 Changing the PFM - Agent for Platform operation method in a cluster system

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This section describes how to change the operation method of PFM - Agent for Platform in a cluster system. For details about how to change the operation method of Performance Management as a whole, see the chapter that explains construction and operation in a cluster system in the *JP1/Performance Management Planning and Configuration Guide*.

### 5.5.1 Exporting and importing the logical host environment definition file in a cluster system

You must export and import the logical host environment definition file only if you perform any one of the following operations:

- When you set up the logical host, you change the node configuration on the logical host.  
For details about how to set up the logical host of PFM - Agent, see *5.3.4(2) Setting up a logical host of PFM - Agent*.
- When you set up the logical host of other Performance Management programs, you perform an operation that requires exporting the logical host environment definition file.  
For details about how to set up the logical host of other Performance Management programs, see *5.3.4(2)(d) Setting up the logical hosts of other Performance Management programs*.
- When you set up the network, you set port numbers.  
For details about how to set up the network, see *5.3.4(2)(e) Setting up a network*.

For details about how to export and import the logical host environment definition file, see the explanations from *5.3.4(2)(i) Exporting the logical host environment definition file* to *5.3.4(3) Setting up a logical host environment for the standby node*.

## 5.6 Notes on operating PFM - Agent for Platform in a cluster system

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This section describes the notes on operating PFM - Agent for Platform in a cluster system.

The following functions are not supported in a logical host environment:

- Collecting performance console counter information
- Collecting 64-bit performance console counter information
- Collecting event log information
- Collecting work group information
- Specifying logical host service settings in the collection data addition utility

### 5.6.1 Notes on specifying the settings for collecting information about the operating status of applications and processes

Settings for collecting information about the application operating status and settings for collecting information about the operating status of processes are not inherited from a physical host environment to a logical host environment. If you want to collect information about the operating status of applications and processes in a logical host environment, specify the necessary settings after setting up the logical host environment. Also note that the `jpcappcvr` command is not supported in a logical host environment.

### 5.6.2 Notes on collecting user-specific performance data

The following describes the notes on collecting user-specific performance data in a logical host environment:

- Locations of user-created data and user commands  
Make sure that the user-created data and user commands are located on the shared disk so that data collection continues in the event of a failover. When you use the functionality for periodically executing user commands, the path to access the user commands must be the same for the executing node and standby node.
- Current folder  
The current folder used by the function for periodically executing user commands is a PFM - Agent for Platform folder (*environment-folder*\jplpc\agtt\agent) in a logical host environment.
- `jpcuser` command  
If you execute the `jpcuser` command in a logical host environment, you must specify a logical host name in the `-lhost` option.
- Collected information  
If the collected information includes the name of the host on which user commands are executed, you can easily tell which node the command is executed on.  
For details about how to include such host names in the collected information, see [6.8.2 Settings for collecting user-specific performance data](#).

### **5.6.3 Note on continuity of performance data before and after failover**

There is no continuity of performance data before and after failover because the physical hosts whose performance data is to be collected are different before and after failover.

# 6

## User-Defined Record Collection

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



## 6.1 Overview of the window for starting collection of user-defined records

This section describes the collection data addition utility that is used to collect performance console counter information, event log information, workgroup information, and 64-bit performance console counter information.

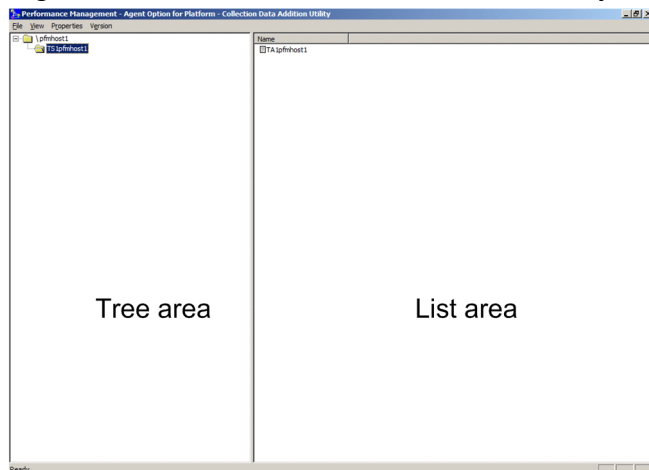
Other types of information are also collected. Details about the settings and windows associated with each type of collected information are provided in the subsequent sections of this chapter.

### 6.1.1 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 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 6–1: Collection Data Addition Utility



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.

#### ! Important

- 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).
- 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 starts. If this dialog box is displayed, click the **OK** button to continue processing for the collection data addition utility. You can also click the **Cancel** button to stop the collection data addition utility.

- 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 overburden the system or might require an excessively large amount of disk space. A total value of approximately 100 should typically be used as the upper limit.
- Performance console counter information and user-defined records function under WOW64. Objects that do not support WOW64 are not displayed in the Add Record window of the collection data addition utility. `PI_GI64` and `PD_GD64` records must be used to collect 64-bit performance console counters. For details about `PI_GI64` and `PD_GD64` records, see [8. Records](#).

For details about how to specify whether to store the user-defined records set here in a database, see the chapter that explains management of operation monitoring data in the *JPI/Performance Management User's Guide*.

## 6.1.2 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**.

## 6.1.3 Notes on specifying user-defined records

- Start the collection data addition utility from an account that has Administrators permissions.
- 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 PFM - Agent for Platform is installed on multiple hosts within the system, you must start the collection data addition utility and specify the user-defined records on each host.
- 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 *JPI/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 (`jpccconfig`) 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.
- When you uninstall PFM - Agent for Platform, you must close the Collection Data Addition Utility window before you execute uninstallation.

## 6.2 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.

### 6.2.1 Setting user-defined records for collecting performance console counter information

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

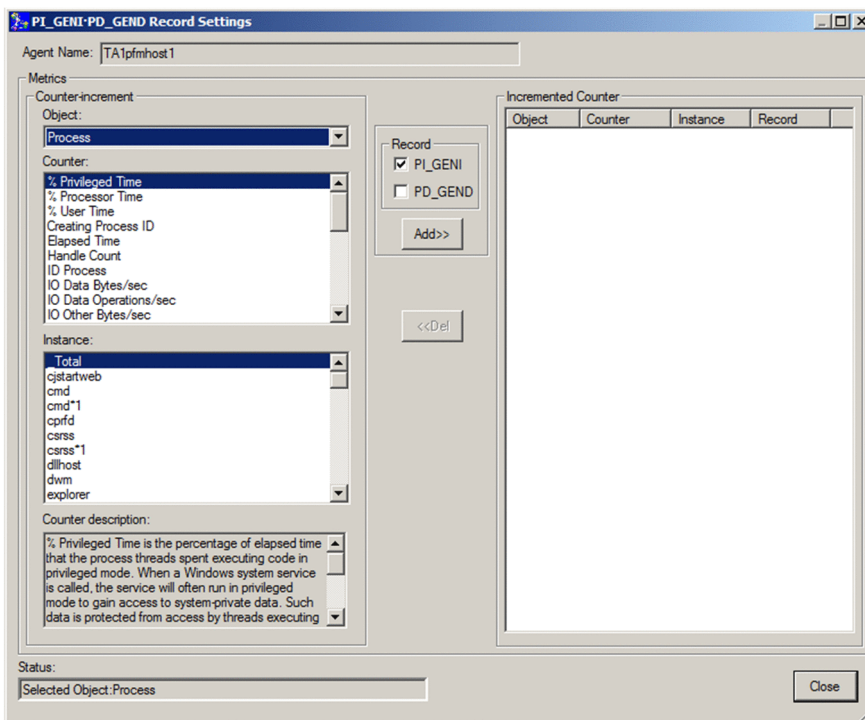
Agent Store: *host-name*<Windows>(Store)

Agent Collector: *host-name*<Windows>

For details about the product name display functionality, see the chapter explaining the functionality in the *JPI/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.



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**, 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** 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.

- 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.

### Important

- 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 overburden the system or might require an excessively large amount of disk space. A total value of approximately 100 should typically be used as the upper limit.
- Performance console counter information functions under WOW64. Objects that do not support WOW64 are not displayed in the Add Record window of the collection data addition utility. `PI_GI64` and `PD_GD64` records must be used to collect 64-bit performance console counters. For details about the `PI_GI64` and `PD_GD64` records, see [8. 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 *JPI/Performance Management User's Guide*.

## 6.2.2 Checking the settings of user-defined records for collecting performance console counter information

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**.

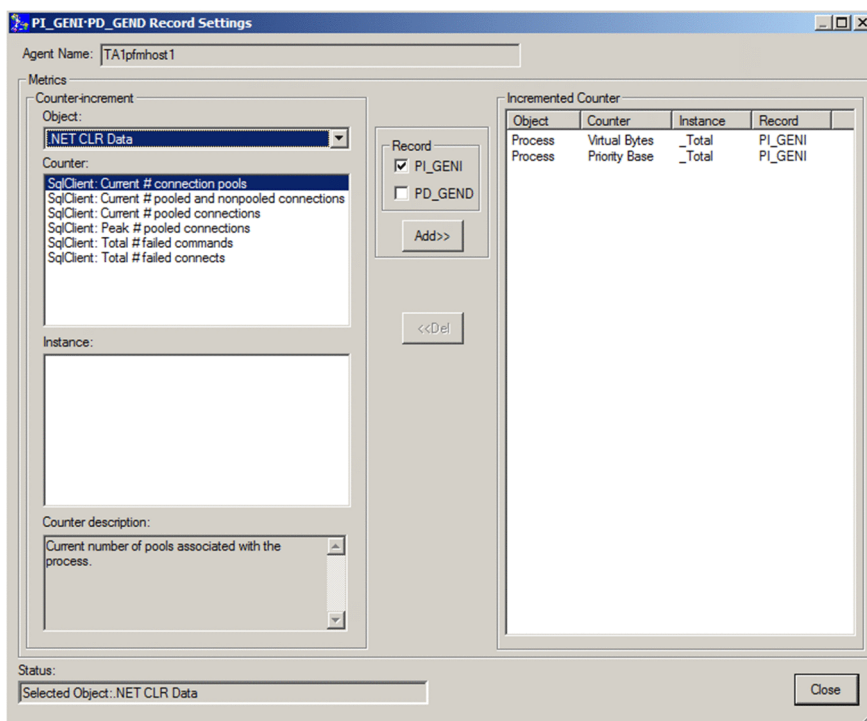
The PI\_GENI-PD\_GEND Record Settings dialog box is displayed.

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.

## 6.2.3 Deleting the settings of user-defined records for collecting performance console counter information

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.



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.

## 6.3 Settings for collecting event log information

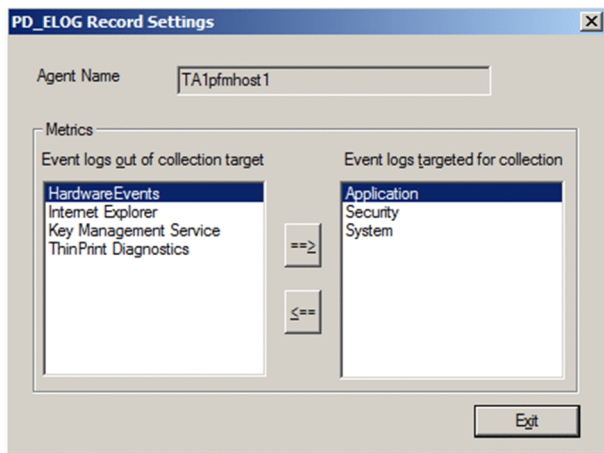
This section explains how to specify user-defined records for collecting event log information, and how to check and delete these settings.

### 6.3.1 Setting user-defined records for collecting event log information

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.



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.

#### Important

For details about the PD\_ELOG record, see [8. Records](#).

## 6.3.2 Checking the settings of user-defined records for collecting event log information

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.

## 6.3.3 Deleting the settings of user-defined records for collecting event log information

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.



## 6.4 Settings for collecting workgroup information

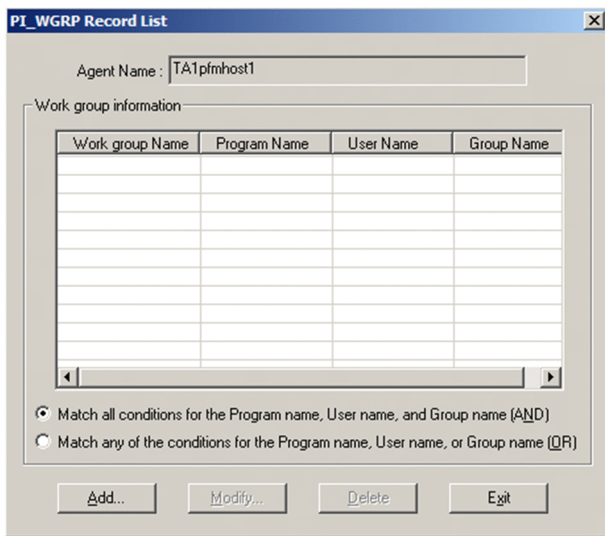
This section explains how to specify user-defined records for collecting workgroup information, and how to check and delete these settings.

### 6.4.1 Setting user-defined records for collecting workgroup information

To specify user-defined records for collecting workgroup information:

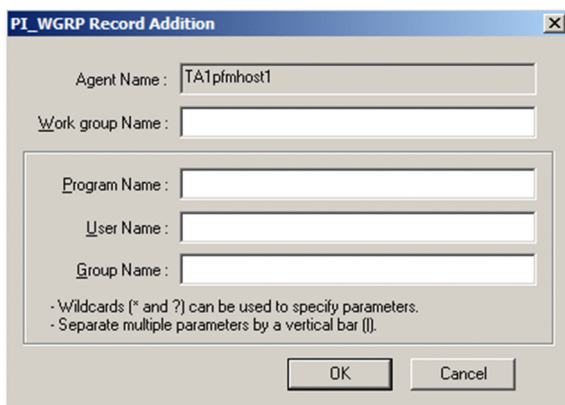
1. From the Windows **Start** menu, start the collection data addition utility.
2. From the tree area, select the Agent Store for the currently logged-in host, and in the list area, right-click the Agent Collector icon, and then choose **PI\_WGRP Records Add/Confirm/Delete**.

The PI\_WGRP Record List dialog box is displayed.



3. In the PI\_WGRP Record List dialog box, click the **Add** button.

The PI\_WGRP Record Addition dialog box is displayed.



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 6–1: 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 can be used.</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 can be used.</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 can be used.</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 can be used.</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.

### **Important**

- For details about the Process Detail (PD) record and Workgroup Summary (PI\_WGRP) record, see [8. Records](#).
- For details about Windows user names and group names, see Help in Windows.

## 6.4.2 Checking the settings of user-defined records for collecting workgroup information

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.

## 6.4.3 Changing the settings of user-defined records for collecting workgroup information

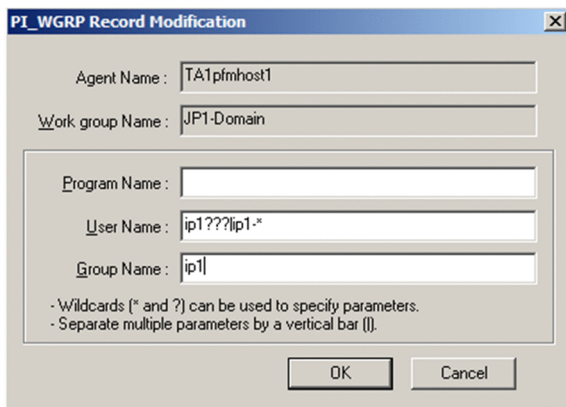
To change the setting content of the user-defined record for collecting workgroup information:

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.



4. Edit the values of the parameters to be modified.

For details and notes about setting parameters, see [6.3.1 Setting user-defined records for collecting event log information](#).

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.

## 6.4.4 Deleting the settings of user-defined records for collecting workgroup information

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.

### (1) 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.

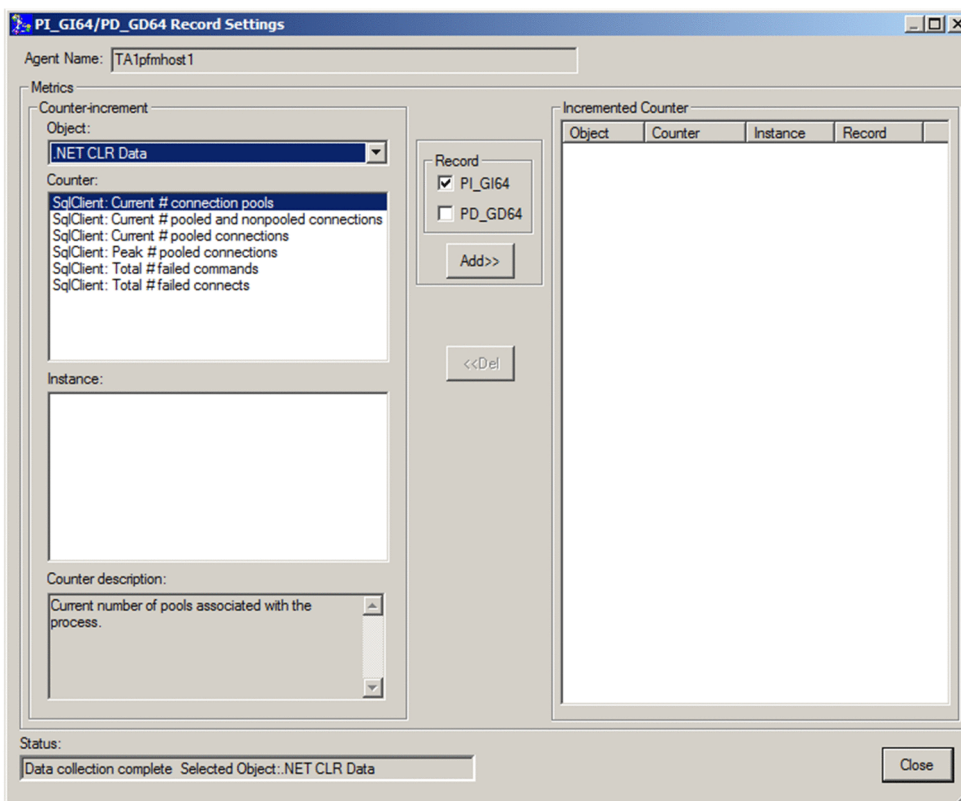
## 6.5 Settings for collecting 64-bit performance console counter information

### 6.5.1 Setting user-defined records for collecting 64-bit performance console counter information

To specify user-defined records for collecting 64-bit 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\_GI64/PD\_GD64 Records Add/Confirm/Delete**.

The following shows the PI\_GI64/PD\_GD64 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**, 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**.

The data counter selected here is stored in the Counter Name (`COUNTER_NAME`) field of the user-defined record.

Note that **Counter** 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 performance counters listed below. For details about the relationship between data counters and performance counters, contact Microsoft Corporation.

- 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 **PI\_GI64** or **PD\_GD64** in **Record**.

Select **PI\_GI64** to collect performance values for **PI\_GI64** records.

Select **PD\_GD64** to collect performance values for **PD\_GD64** 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\_GI64/PD\_GD64 Record Settings** dialog box closes.

## 6.5.2 Checking the settings of user-defined records for collecting 64-bit performance console counter information

To check the setting content of the user-defined records for collecting 64-bit 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\_GI64/PD\_GD64 Records Add/Confirm/Delete**.

The **PI\_GI64/PD\_GD64 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\_GI64/PD\_GD64 Record Settings** dialog box closes.

## 6.5.3 Deleting the settings of user-defined records for collecting 64-bit performance console counter information

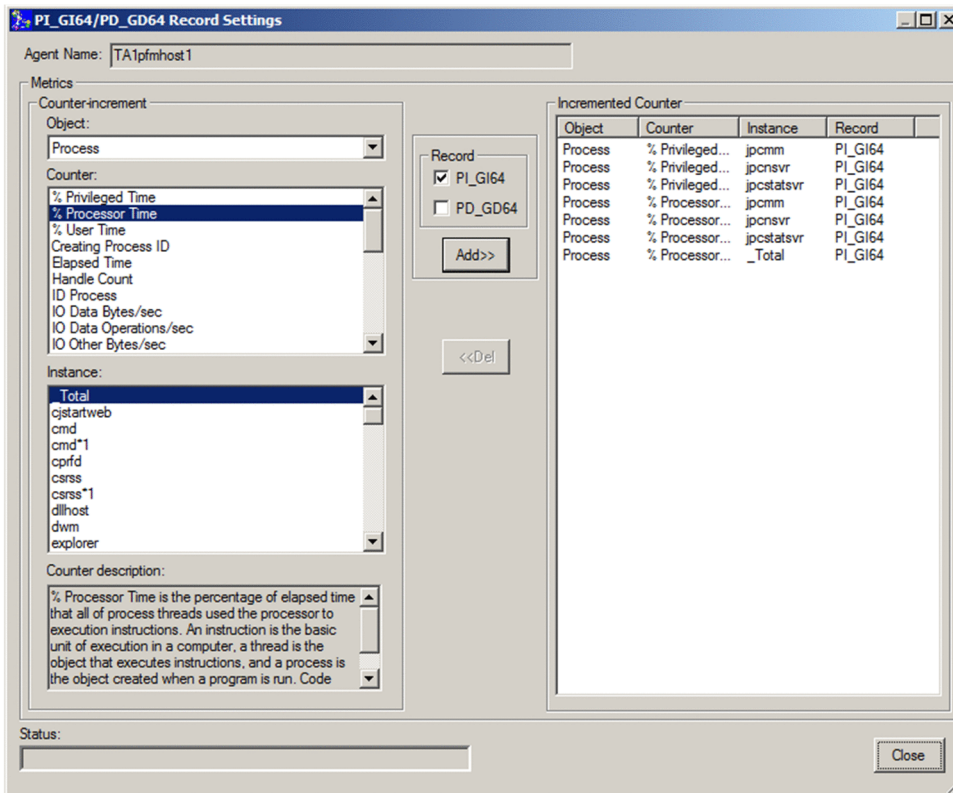
To delete the settings of the user-defined records for collecting 64-bit performance console counter information:

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\_GI64/PD\_GD64 Records Add/Confirm/Delete**.

The **PI\_GI64/PD\_GD64 Record Settings** dialog box is displayed.





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\_GI64/PD\_GD64 Record Settings dialog box closes.

## 6.6 Settings for collecting information about the operating status of processes

This section explains how to specify user-defined records for collecting information about the operating status of processes. It also provides an example of responding when an alarm occurs.

### 6.6.1 Overview of collecting information about the operating status of processes

Information about the operating status of processes can be collected by PFM - Agent for Platform and then monitored using PFM - Web Console. By monitoring information about the operating status of processes, you can ensure that the operating system is working properly.

The functionality for collecting information about the operating status of processes, which is new to PFM - Agent for Platform version 10-00, is an extension of the functionality from versions 09-00 and earlier for collecting information about the application operating status.

There are two methods for using PFM - Agent for Platform to collect information about the operating status of processes:

- Collecting information on a per-process or per-service basis
- Collecting information on a per-application basis by grouping multiple processes and services

Use the **Agents** tree of PFM - Web Console to configure collection of information about the operating status of processes.

If you prefer to configure collection of information about the operating status of processes in the same way it was done in versions 09-00 and earlier of PFM - Agent for Platform, you can use the **Services** tree of PFM - Web Console.

### 6.6.2 Differences in functionality from previous versions

The following table shows the differences in functionality between how past versions collected information about the application operating status and how version 10-00 collects information about the operating status of processes.

Table 6–2: Differences from previous versions in the collection of information about the operating status of processes

Functionality	Collection of information about the application operating status in versions 09-00 and earlier	Collection of information about the operating status of processes beginning with version 10-00
Acquisition of command line	No	Yes
Maximum value for a command line that can be acquired	--	4,096 bytes
Collection of performance information for specific processes or services	No <sup>#1</sup>	Yes <sup>#2</sup>
Maximum value for monitoring conditions that can be specified	127 bytes	4,096 bytes

Functionality	Collection of information about the application operating status in versions 09-00 and earlier	Collection of information about the operating status of processes beginning with version 10-00
Maximum value for monitoring conditions that can be displayed in PFM - Web Console	31 bytes	4,096 bytes
Case sensitivity of monitoring targets	No	Yes <sup>#3</sup>
Identifying monitoring conditions by label	No	Yes <sup>#4</sup>
Grouping targets when setting process monitoring	<ul style="list-style-type: none"> <li>• Programs (Program)</li> <li>• Services (Service Name)</li> </ul>	<ul style="list-style-type: none"> <li>• Programs (Program Name)</li> <li>• Command line (Command Line)</li> <li>• Services (Service Name)</li> </ul>

Legend:

Yes: Can be executed.

No: Cannot be executed.

--: Not applicable.

#1

Always collects performance information for all processes or services.

#2

Collects performance information only for the processes or services for which process monitoring has been set.

#3

By default, letter case is not distinguished. For details, see [6.6.7 Distinguishing the letter case of monitoring targets](#).

#4

Use the MonitoringXXLabel field to identify a process or service.

You can use the `jpcappcvt` command to upgrade application definitions that were set in version 09-00 or earlier to application definitions for version 10-00. For details about the `jpcappcvt` command, see [9. Commands](#).



### Note

There is no need to upgrade application definitions that were set in version 09-00 or earlier if they are not being extended into version 10-00.

## 6.6.3 Records used to collect information about the operating status of processes

The following tables show the records that are used to collect information about the operating status of processes in PFM - Agent for Platform.

Table 6–3: Records used to collect information about the operating status of processes (on a per-process or per-service basis)

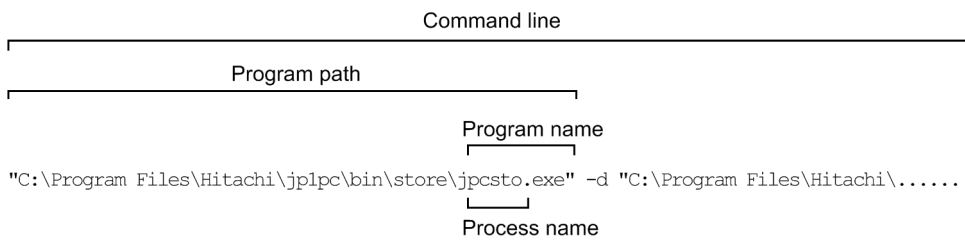
Record	Monitoring target	Information stored	Collection method
Application Process Overview (PD_APS)	Process	Performance data that shows the status of a process at a particular point in time	Real-time

Record	Monitoring target	Information stored	Collection method
Application Process Interval (PD_APSI)	Process	Performance data that shows the status at a particular point in time of a process that has been set for process monitoring	<ul style="list-style-type: none"> <li>• Real-time</li> <li>• Historical</li> </ul>
Application Service Overview (PD_ASVC)	Service	Performance data that shows the status at a particular point in time of an application service, such as a Win32 process, that is registered in the Service Control Manager (SCM)	Real-time

Table 6–4: Records used to collect information about the operating status of processes (on a per-application basis)

Record	Monitoring target	Information stored	Collection method
Application Summary Extension (PD_APP2)	Process and service	Performance data that summarizes by application the records stored in the Application Process Overview (PD_APS) and Application Service Overview (PD_ASVC) records at a particular point in time	<ul style="list-style-type: none"> <li>• Real-time</li> <li>• Historical</li> </ul>
Application Process Detail (PD_APPD)		Performance data that summarizes by process and service at a particular point in time the records that are being monitored on a per-application basis and that are stored in the Application Process Overview (PD_APS) and Application Service Overview (PD_ASVC) records	

The following example illustrates the relationship between the process name, program name, program path, and command line, which are used in the settings for collecting information about the operating status of processes.



## 6.6.4 Settings in the Agents tree for collecting information about the operating status of processes

This section describes the settings that are specified in the **Agents** tree of PFM - Web Console for collecting information about the operating status of processes, as well as how to change and delete the settings.

It also explains how to use application definition templates to simplify operations on the settings.

The settings in the **Agents** tree can be configured using PFM - Web Console version 10-00.

Screenshots from PFM - Web Console 11-50 are provided to illustrate the descriptions in this section.

### (1) Setting user-defined records (monitoring targets)

To set a monitoring target:

1. Create an application.

2. Bind an alarm table to the monitoring agent.

To collect information about operating status on a per-process or per-service basis, set only one process or service for the application when you create the application. To collect information about operating status on a per-application basis, you can set more than one process or service for the application when you create the application.

The following subsections provide a more detailed description of how to set monitoring targets.

### (a) Creating the application

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 **Agents** tab.

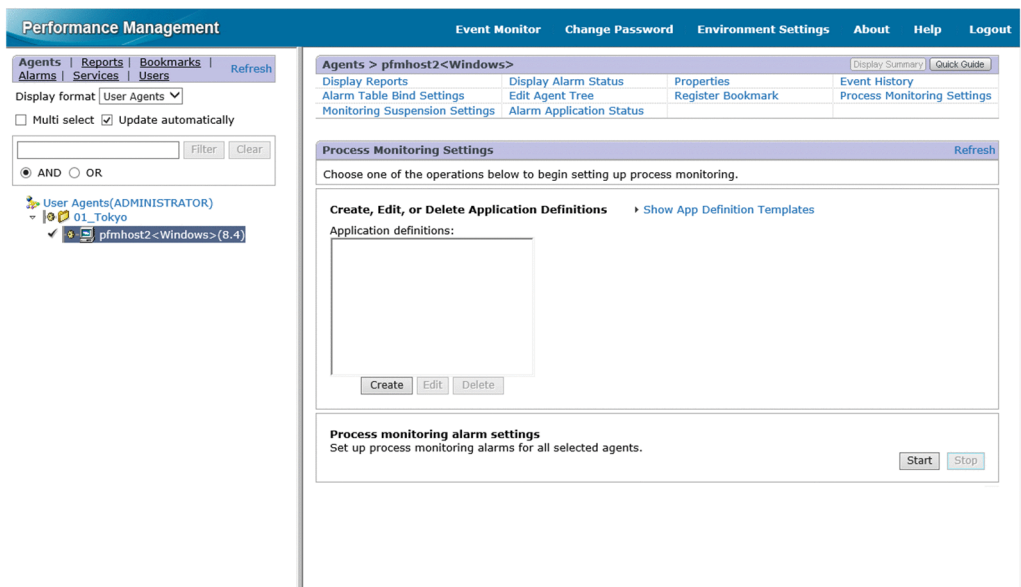
The **Agents** tree appears.

3. In the navigation frame of the **Agents** tree, select *host-name*<**Windows**> (Agent Collector service).

A check mark is displayed next to the Agent Collector service.

4. Select the **Process Monitoring Settings** method in the method frame.

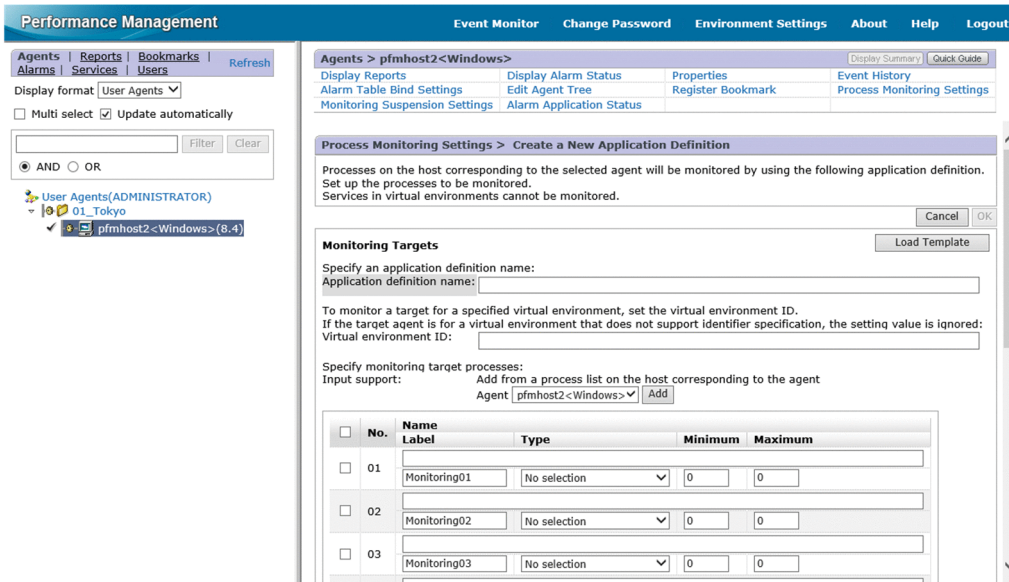
The Process Monitoring Settings window appears.



5. To create a new setting, click the **Create** button. To change a setting, select in Application Definitions the application definition you want to change, and then click the **Edit** button.

You cannot select multiple application definitions.

The Process Monitoring Settings > Create a New Application Definition window or Process Monitoring Settings > Edit an Application Definition window appears.



6. If you are creating a new application definition, specify an application definition name in **Application definition name**.

The application definition name, and the character string you specify for it, must conform to the following rules.

- You can choose any name for the application definition name. The specified application definition name is stored in the Application Name field of the PD\_APP2, PD\_APPD, and PD\_APSI records and will be used as an identifier for identifying the application. The application definition name you specify must be unique.
- The name must consist of 1 to 63 bytes of single-byte alphanumeric and special characters, except for the following characters:  
Tab (\t) \ : ; , \* ? " ' < > |
- A maximum of 64 applications can be set.

7. If necessary when you are operating PFM - Web Console by using a virtualized system (Docker container), specify the identifier of the virtualized environment in **Virtual environment ID**.

*Note:*

If the version of PFM-Web Console is earlier than 11-50, you cannot specify the identifier of the virtualized environment.

When you are operating PFM - Web Console by using a virtualized system, enter an identifier to identify the virtualized environment. When an environment is specified, the monitoring target is limited to processes of the specified environment.

For details, see [2.3.17\(4\) Property settings and obtained information](#).

As an identifier of the virtualized environment, specify the Docker container ID by using a 64-character hexadecimal value (a single-byte character string consisting of numbers in the range from 0 to 9 and alphabet letters in the range from a to f). If you want to monitor only the processes running in the Docker host environment, specify 0.

 **Note**

For details about how to identify the applicable Docker container ID, see the *Release Notes*.

8. Set the application details.

The following table shows the details that can be set in the Process Monitoring Settings > Create a New Application Definition window or the Process Monitoring Settings > Edit an Application Definition window.

Table 6–5: Application details that can be set

Item	Description	Field name of the corresponding record
<b>Name</b> <sup>#1</sup>	Enter the conditions for identifying the monitoring target. All single-byte alphanumeric and special characters can be used except for the tab character (\t). You can specify a maximum of 4,096 bytes.	Monitoring Condition field of the PD_APPD record
<b>Label</b>	Specify a label for identifying the monitoring conditions. All single-byte alphanumeric and special characters can be used except for the tab character (\t). You can specify a maximum of 31 bytes. The default is <code>MonitoringXX</code> , <sup>#2</sup> which will be set if nothing is entered. Each monitoring label must be unique.	Monitoring Label field of the PD_APPD and PD_APPI records
<b>Type</b>	Select one of <b>Program</b> , <b>Command Line</b> , <b>Service</b> , or <b>No selection</b> . <ul style="list-style-type: none"> <li>• <b>Program</b> Evaluate using the value in the Program Name field of the PD_APS record.</li> <li>• <b>Command Line</b> Evaluate using the value in the Command Line field of the PD_APS record.</li> <li>• <b>Service</b> Evaluate using the value in the Service Name field of the PD_ASVC record.</li> <li>• <b>No selection</b> Do not evaluate.</li> </ul>	Monitoring Field field of the PD_APPD and PD_APPI records
<b>Minimum</b>	Enter the minimum threshold value for the number of monitoring targets. You can specify a value from 0 to 65535. The default is 0.	Monitoring Min field of the PD_APPD record
<b>Maximum</b>	Enter the maximum threshold value for the number of monitoring targets. You can specify a value from 0 to 65535. However, you must specify a value that is greater than or equal to the value specified for <b>Minimum</b> . The default is 0.	Monitoring Max field of the PD_APPD record

#1

- The wildcards \* and ? can be used in process monitoring. An asterisk (\*) represents zero or more instances of any character, and a question mark (?) represents any single character.
- If you enter more than 127 bytes for the monitoring conditions (`MonitoringXXCondition`) in the settings for collecting information about the operating status of processes, only the first 127 bytes set in the Monitoring Condition field of the PD\_APPD record will be displayed. However, monitoring will be performed using the entire monitoring conditions that were set.
- When the monitoring targets are identified from the monitoring conditions specified in **Name**, letter case is not distinguished by default. For details about changing the setting to distinguish the letter case when the monitoring targets are identified from the monitoring conditions, see [6.6.7 Distinguishing the letter case of monitoring targets](#).
- When you specify **Program** in **Type**, specify the Windows extension (such as `.exe`) of the program in **Name**.
- Check to be sure that the character string you enter in **Name** matches what is set in the Program Name of the PD\_APS record, the Command Line fields of the PD\_APS record, and the Service Name field of the PD\_ASVC record.  
Any character in the source information that is not in the ASCII character set range of 0x20 to 0x7E will be converted to a hash mark (#: 0x23) before it is stored in the Program Name field of the PD\_APS record, the Command Line field of the PD\_APS record, or the Service Name field of the PD\_ASVC record. Note that multi-byte characters are processed in single-byte units during conversion. For example, the multi-byte (full-width) letter `A` is converted as follows:

Source information		Post-conversion information	
Character encoding	Binary	Binary	Character string
Shift-JIS	8260	2360	# `
EUC	A3C1	2323	##
UTF-8	EFBCA1	232323	###

#2

XX represents a two-digit numeric value in the range 01 through 15 that is set to the numeric value corresponding to the Monitoring Number field in the PD\_APPD and PD\_APSI records.



### Note

If you select the Agent Collector service for the monitoring target from the **Agent** pull-down menu under **Input support**, and then click the **Add** button, the Process Monitoring Settings > Create a New Application Definition > Add from Running Processes window,<sup>#</sup> or the Process Monitoring Settings > Edit an Application Definition > Add from Running Processes window<sup>#</sup> is displayed, where you can select a process and set its properties.

#

**Running Processes, Running Command Lines, or Services** appears under **Monitoring target types**, depending on what is specified for **Type** in the Process Monitoring Settings > Create a New Application Definition window or the Process Monitoring Settings > Edit an Application Definition window.

If **Program** is specified for **Type** in the Process Monitoring Settings > Create a New Application Definition window or Process Monitoring Settings > Edit an Application Definition window, **Running Processes** appears. If **Command Line** is specified, **Running Command Lines** appears. If **Service** is specified, **Services** appears. The default is **Running Processes**.

9. Click the **OK** button.

The settings are enabled.

Note that steps 7 and later in *Creating the application* are for setting properties from the Process Monitoring Settings > Create a New Application Definition > Add from Running Processes window<sup>#</sup> or the Process Monitoring Settings > Edit an Application Definition > Add from Running Processes window.<sup>#</sup>

#

**Running Processes, Running Command Lines, or Services** appears under **Monitoring target types**, depending on what is specified for **Types** in the Process Monitoring Settings > Create a New Application Definition window or Process Monitoring Settings > Edit an Application Definition window.

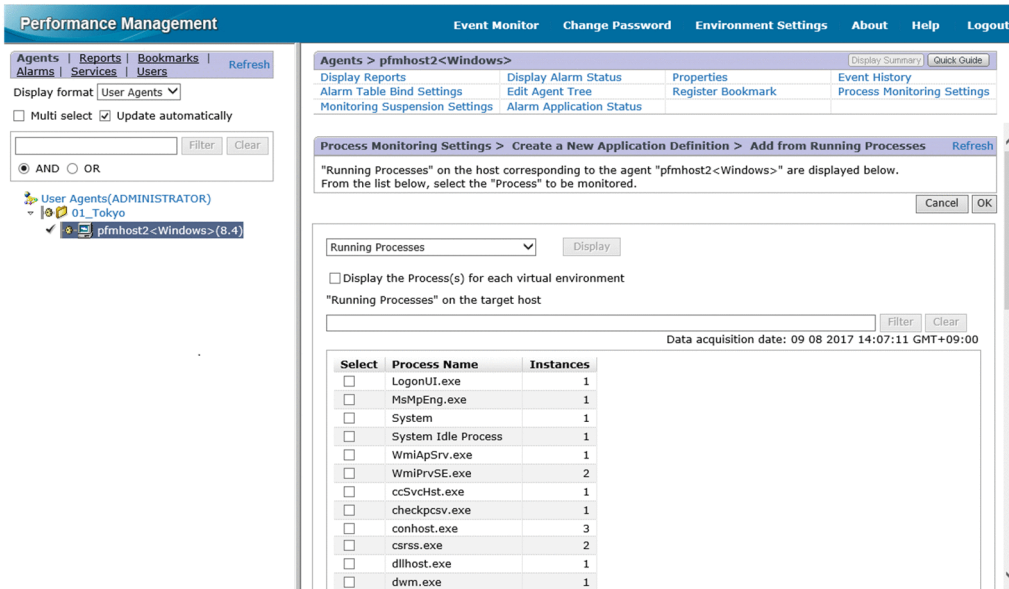
If **Program** is specified for **Type** in the Process Monitoring Settings > Create a New Application Definition window or Process Monitoring Settings > Edit an Application Definition window, **Running Processes** appears. If **Command Line** is specified, **Running Command Lines** appears. If **Service** is specified, **Services** appears. The default is **Running Processes**.

10. Perform steps 1 to 7 of *Creating the application*, above.

11. On the **Agent** pull-down menu under **Input support**, select the Agent Collector service for the monitoring target, and then click the **Add** button.

The Process Monitoring Settings > Create a New Application Definition > Add from Running Processes window, or the Process Monitoring Settings > Edit an Application Definition > Add from Running Processes window appears.





12. Select a monitoring target type (**Running Processes**, **Running Command Lines**, or **Services**) from the pull-down menu to the left of the **Display** button, and then click the **Display** button.

A list of processes appears at the bottom of the Process Monitoring Settings > Create a New Application Definition > Add from Running Processes window or the Process Monitoring Settings > Edit an Application Definition > Add from Running Processes window.

If you specify a keyword in **Filter** in the list of processes, and then click the **Search** button, only those processes are displayed that contain the keyword in their process name. Click the **Clear** button to return to the original list of processes.

If you select **Display the Process(s) for each virtual environment** and then select a virtual environment ID to be monitored from the **Virtual environment ID** pull-down menu, only the selected process(es) running on each virtual environment is displayed.

13. From the list of processes, select the process you want to monitor, and click the **OK** button.

The Process Monitoring Settings > Create a New Application Definition > Add from Running Processes window or the Process Monitoring Settings > Edit an Application Definition > Add from Running Processes window closes, and the display returns to the Process Monitoring Settings > Create a New Application Definition window or Process Monitoring Settings > Edit an Application Definition window.

14. Change the necessary settings in the Process Monitoring Settings > Create a New Application Definition window or Process Monitoring Settings > Edit an Application Definition window.

For details about the settings see [Table 6-5 Application details that can be set](#).

15. Click the **OK** button.

The settings are enabled.

## (b) Binding an alarm table to the monitoring agent

Next, bind an alarm table to the monitoring agent in order to monitor information about operating status. The alarm for monitoring information about operating status is the Application Status alarm. Edit it as necessary. For details about the Application Status alarm, see [Application Status](#) in [7. Monitoring Templates](#).

Binding an alarm table can be done in the following ways:

- Bind the alarm table in PFM Windows Template Alarms [APP] 10.00

- Bind an alarm table created by the user

To bind the alarm table in PFM Windows Template Alarms [APP] 10.00:

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 **Agents** tab.  
The **Agents** tree appears.
3. In the navigation frame of the **Agents** tree, select *host-name*<**Windows**> (Agent Collector service).  
A check mark is displayed next to the Agent Collector service.
4. Select the **Process Monitoring Settings** method in the method frame.  
The Process Monitoring Settings window appears.
5. Click the **Start** button in **Process monitoring alarm settings**.  
The alarm table is bound to the monitoring agent.

To bind an alarm table created by the user:

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 **Agents** tab.  
The **Agents** tree appears.
3. In the navigation frame of the **Agents** tree, select *host-name*<**Windows**> (Agent Collector service).  
A check mark is displayed next to the Agent Collector service.
4. Select the **Bind Alarm Table** method in the method frame.  
The Bind Alarm Table [Select Alarm Table] window appears.
5. Select an alarm table displayed at the bottom of the **Windows** folder and click the **OK** button.  
The alarm table is bound to the monitoring agent.

To monitor the status of a particular process only, you can create an alarm for the following condition expressions.

Table 6–6: Condition expressions for monitoring the status of a particular process only

Item	Condition expressions
Record	Application Process Detail (PD_APPD)
Field	Application Name Monitoring Label Monitoring Status
Abnormal condition and warning condition <sup>#1</sup>	Application Name = <i>Name</i> <sup>#2</sup> AND Monitoring Label = <i>Label</i> <sup>#2</sup> AND Monitoring Status = ABNORMAL

#1

The same conditions are specified for abnormal conditions and warning conditions.

Specify the application name and monitoring label for the application you want to monitor.

## (2) Deleting a user-defined record (monitoring target)

To delete a monitoring target:

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, select the **Agents** tab.  
The **Agents** tree appears.
3. In the navigation frame of the **Agents** tree, select *host-name*<**Windows**> (Agent Collector service).  
A check mark is displayed next to the Agent Collector service.
4. Select the **Process Monitoring Settings** method in the method frame.  
The Process Monitoring Settings window appears.
5. Select the application definition you want to delete from Application Definitions, and then click the **Delete** button.  
The Process Monitoring Settings > Delete Application Definition window appears.
6. Click the **OK** button.  
The setting is deleted.

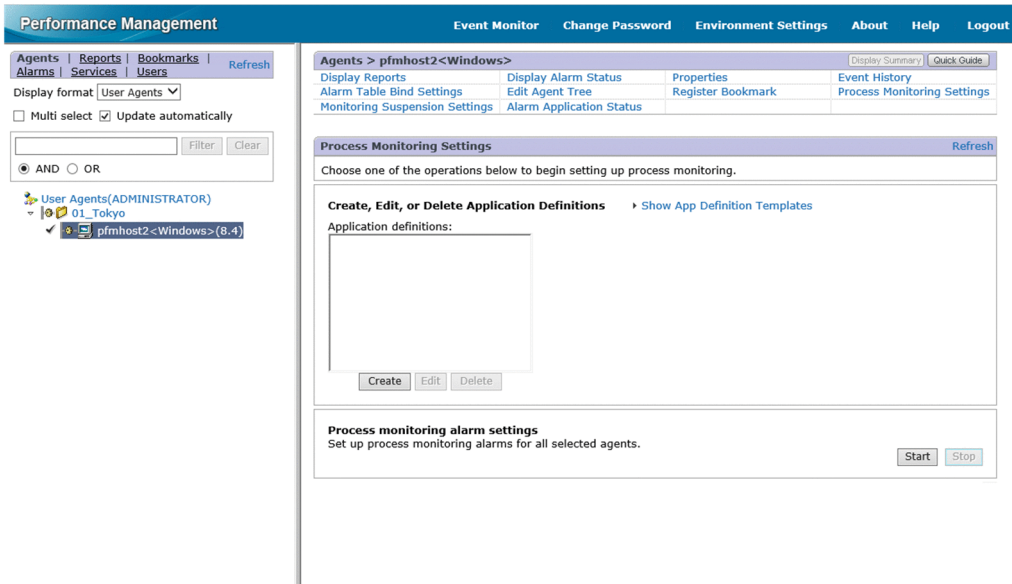
## (3) Using application definition templates

You can use a template to save the settings for collecting information about the operating status of processes (application definitions) that you have made in the **Agents** tree of PFM - Web Console and then use those settings on other machines.

This section explains how to create, delete, and load application definition templates.

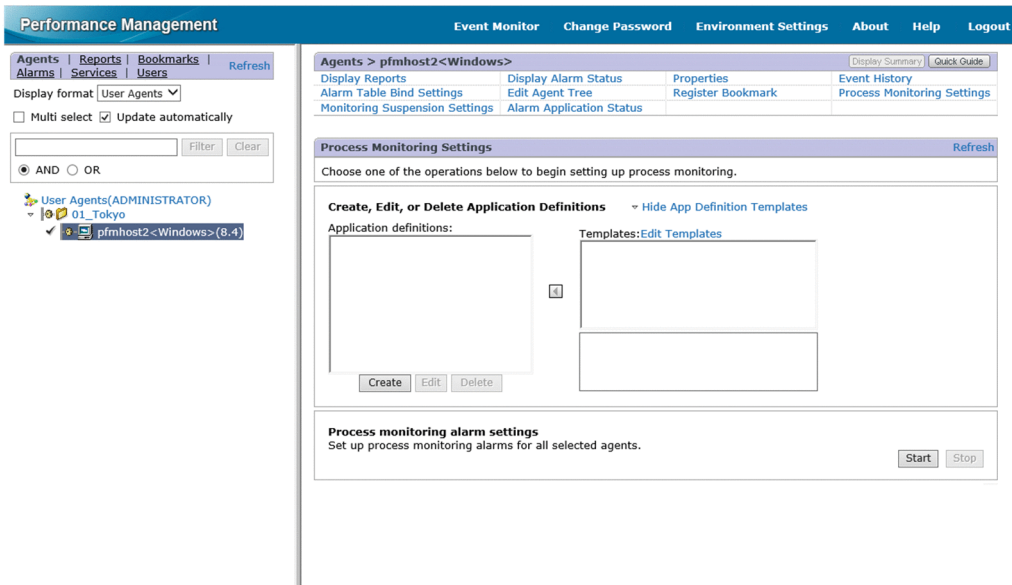
### (a) Creating an application definition template

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 **Agents** tab.  
The **Agents** tree appears.
3. In the navigation frame of the **Agents** tree, select *host-name*<**Windows**> (Agent Collector service).  
A check mark is displayed next to the Agent Collector service.
4. Select the **Process Monitoring Settings** method in the method frame.  
The Process Monitoring Settings window appears.



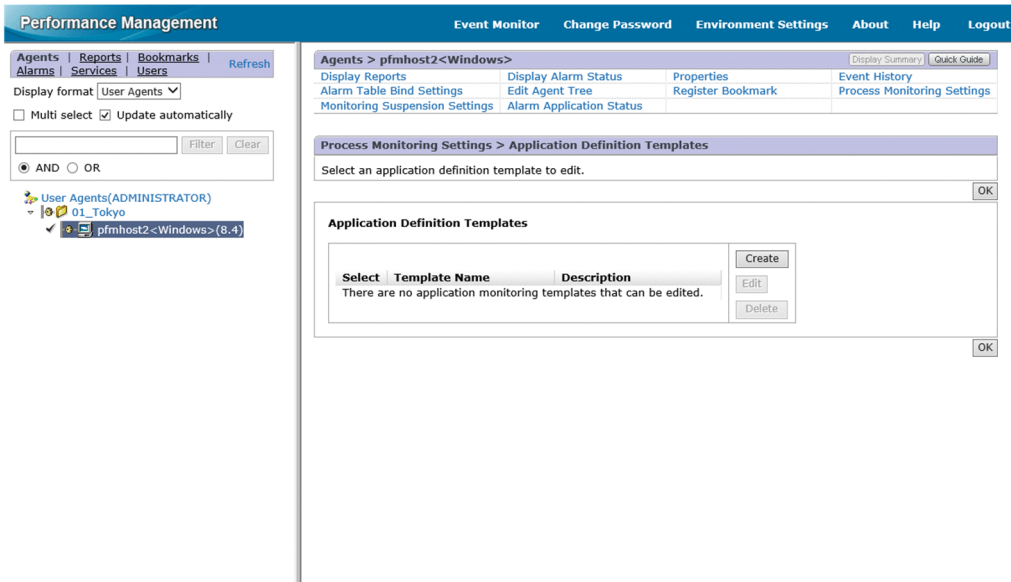
5. Select the **Show App Definition Templates** menu.

The **Edit Templates** menu appears.



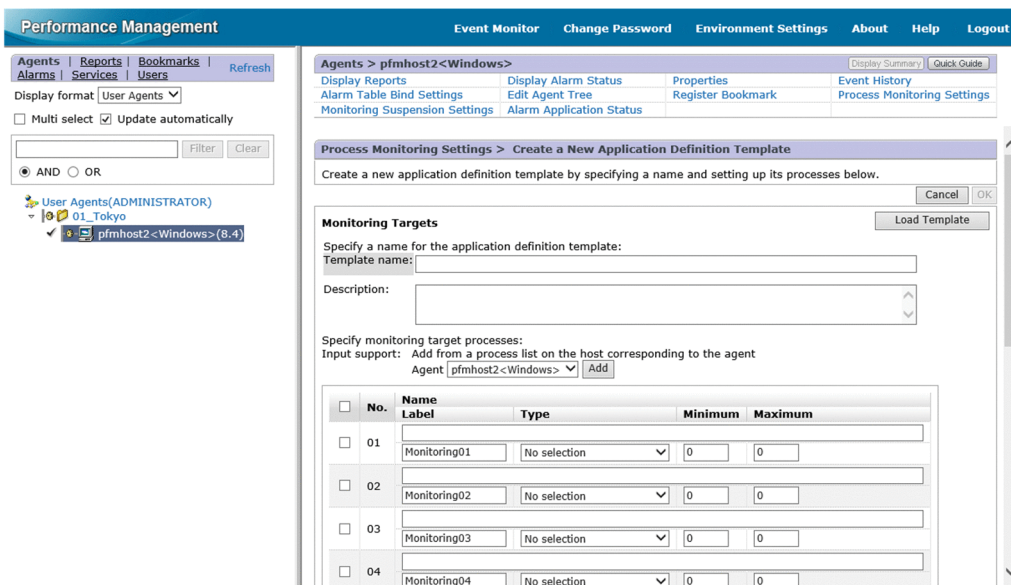
6. Select the **Edit Templates** menu.

The Process Monitoring Settings > Application Definition Templates window appears.



- To create a new template, click the **Create** button. To change settings, select the template you want to change from **Application Definition Templates**, and then click the **Edit** button.

The Process Monitoring Settings > Create a New Application Definition Template window or Process Monitoring Settings > Edit an Application Definition Template window appears.



- In **Template name**, enter a name for the template.

- In **Description**, enter a description of the template.

- Set the application details.

For details about the settings, see [Table 6-5 Application details that can be set](#) in 6.6.4(1) *Setting user-defined records (monitoring targets)*.

- Click the **OK** button.

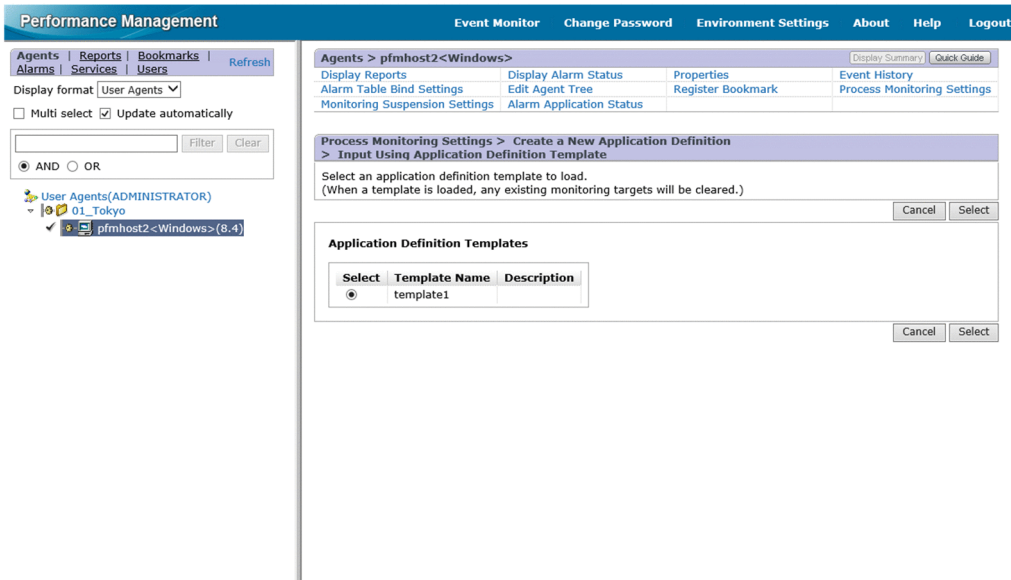
The application definition template is created.

## (b) Deleting an application definition template

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 **Agents** tab.  
The **Agents** tree appears.
3. In the navigation frame of the **Agents** tree, select *host-name*<**Windows**> (Agent Collector service).  
A check mark is displayed next to the Agent Collector service.
4. Select the **Process Monitoring Settings** method in the method frame.  
The Process Monitoring Settings window appears.
5. Select the **Show App Definition Templates** menu.  
The **Edit Templates** menu appears.
6. Select the **Edit Templates** menu.  
The Process Monitoring Settings > Application Definition Templates window appears.
7. From **Application Definition Templates**, select the template you want to delete, and then click the **Delete** button.  
The Process Monitoring Settings > Delete Application Definition Template window appears.
8. Click the **OK** button.  
The application definition template is deleted.

## (c) Loading an application definition template

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 **Agents** tab.  
The **Agents** tree appears.
3. In the navigation frame of the **Agents** tree, select *host-name*<**Windows**> (Agent Collector service).  
A check mark is displayed next to the Agent Collector service.
4. Select the **Process Monitoring Settings** method in the method frame.  
The Process Monitoring Settings window appears.
5. Click the **Create** button.  
The Process Monitoring Settings > Create a New Application Definition window appears.
6. Click the **Load Template** button.  
The Process Monitoring Settings > Create a New Application Definition > Input Using Application Definition Template window appears.



- From **Application Definition Templates**, select the template you want to load, and then click the **Select** button. The application definition template is loaded.

## 6.6.5 Settings in the Services tree for collecting information about the operating status of processes

This section describes the settings that are specified in the **Services** tree of PFM - Web Console for collecting information about the operating status of processes, as well as how to check, modify, and delete the settings.

### (1) Setting user-defined records (monitoring targets)

To set a monitoring target:

- Create an application.
- Set the application's properties (such as the application name and threshold values to be monitored).
- Bind an alarm table to the monitoring agent.<sup>#</sup>

#

Alarm binding is performed in the **Agents** tree of PFM - Web Console.

To collect information about operating status on a per-process or per-service basis, you set only one process or service for the application when you create the application. To collect information about operating status on a per-application basis, you can set more than one process or service for the application when you create the application.

The following subsections provide a more detailed description of how to set monitoring targets.

#### (a) Creating the application

- From the monitoring console browser, log in to PFM - Web Console. The Main window appears.
- In the navigation frame of the Main window, select the **Services** tab.

The **Services** tree 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 that host.

The name of each service is displayed by its service ID. For details about the service IDs, see *B. List of Identifiers* and the section that explains the service naming conventions in the appendix of the *JPI/Performance Management Planning and Configuration Guide*.

The format of the service ID depends on whether the product name display functionality is enabled. For details about the product name display functionality, see the chapter that explains the Performance Management functionality in the *JPI/Performance Management Planning and Configuration Guide*.

4. Expand the contents of the monitoring agent host folder, and 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 Service Properties window appears.

6. Select the **Advanced Application Monitoring > ADDITION OR DELETION A SETTING** tree.

7. At the bottom of the information frame, specify an application name for **ADD AN APPLICATION MONITORING SETTING**.

The application name, and the character string you specify for it, must conform to the following rules:

- You can choose any name for the application name. The specified application name is stored in the Application Name field of the PD\_APP2 and PD\_APPD records and will be used as an identifier for identifying the application. The application name you specify must be unique.
- The name must consist of 1 to 63 bytes of single-byte alphanumeric and special characters, except for the following characters:  
Tab (\t) \ : ; , \* ? " ' < > |
- A maximum of 64 applications can be set.

8. Click the **OK** button.

The application name is generated at the bottom of the **Advanced application monitoring > Application monitoring setting** tree in the Service Properties window.

## (b) Setting the application properties

1. After completing the steps in *Creating the application*, display the Service Properties window again and select the application name tree generated in the **Advanced application monitoring > Application monitoring setting** tree. The property information entry window appears at the bottom of the information frame.
2. Set the application properties.

Set the monitoring label, monitoring field, monitoring condition, and minimum and maximum thresholds for the number of processes. You can set information for multiple processes. The following table shows the settings you can specify for the application properties.



Table 6–7: Settings for application properties

Item	Property name	Description	Field name of the corresponding record
Virtualized environment identifier	Virtual Environment ID#1	<p>If necessary when you are operating PFM - Web Console by using a virtualized system (Docker container), enter an identifier to identify the virtualized environment. When an environment is specified, monitoring can be limited to processes of the specified environment.</p> <p>For details, see <i>2.3.17(4) Property settings and obtained information</i>.</p> <p>As an identifier of the virtualized environment, specify the Docker container ID by using a 64-character hexadecimal value (a single-byte character string consisting of numbers in the range from 0 to 9 and alphabet letters in the range from a to f). If you want to monitor only the processes running in the Docker host environment, specify 0.</p>	Virtual Env ID field in the PD_APP2 record
Monitoring label	MonitoringXX Label	<p>Specify a label for identifying the monitoring conditions.</p> <p>All single-byte alphanumeric and special characters can be used except for the tab character (\t). You can specify a maximum of 31 bytes.</p> <p>The default is MonitoringXX#2, which will be set if nothing is entered.</p> <p>Each monitoring label must be unique.</p>	Monitoring Label field in the PD_APPD record
Monitoring field	MonitoringXX Field	<p>Select one of <b>Program Name</b>, <b>Command Line</b>, <b>Service Name</b>, or <b>No selection</b>.</p> <ul style="list-style-type: none"> <li>• <b>Program Name</b> Evaluate using the value in the Program Name field of the PD_APS record.</li> <li>• <b>Command Line</b> Evaluate using the value in the Command Line field of the PD_APS record.</li> <li>• <b>Service Name</b> Evaluate using the value in the Service Name field of the PD_ASVC record.</li> <li>• <b>None</b> Do not evaluate.</li> </ul> <p>The default is <b>None</b>.</p>	Monitoring Field field in the PD_APPD record
Monitoring condition#3	MonitoringXX Condition	<p>Enter the conditions for identifying the monitoring target.</p> <p>All single-byte alphanumeric and special characters can be used except for the tab character (\t). You can specify a maximum of 4,096 bytes.</p> <p>The default is a space.</p>	Monitoring Condition field of the PD_APPD record
Minimum and maximum thresholds for the number of processes	MonitoringXX Range	<p>Enter minimum and maximum threshold values for the number of processes, separated by a hyphen (for example, 1-2).</p>	<ul style="list-style-type: none"> <li>• Minimum Monitoring Min field of the PD_APPD record</li> </ul>

Item	Property name	Description	Field name of the corresponding record
Minimum and maximum thresholds for the number of processes	MonitoringXX Range	You can specify values from 0 to 65535. The default is 0-0.	<ul style="list-style-type: none"> <li>Maximum Monitoring Max field of the PD_APPD record</li> </ul>

#1

This property is displayed only when the OS on which PFM - Agent for Platform is running is Windows Server 2016 or later.

#2

XX represents a two-digit numeric value in the range 01 through 15 that is set to the numeric value corresponding to the Monitoring Number field in the PD\_APPD record.

#3

- The wildcards \* and ? can be used in process monitoring. An asterisk (\*) represents zero or more instances of any character, and a question mark (?) represents any single character.
- If you enter more than 127 bytes for the monitoring conditions (MonitoringXX Condition) in the settings for collecting information about the operating status of processes, only the first 127 bytes set in the Monitoring Condition field of the PD\_APPD record will be displayed. However, monitoring will be performed using the entire monitoring conditions that were set.
- When the monitoring targets are identified from the monitoring conditions, uppercase and lowercase letters are not distinguished by default. For details about changing the setting to distinguish uppercase and lowercase letters when the monitoring targets are identified from the monitoring conditions, see [6.6.7 Distinguishing the letter case of monitoring targets](#).
- When you specify **Program Name** in the MonitoringXX Field property, specify the Windows extension (such as .exe) of the program in the MonitoringXX Condition property.
- Check to be sure that the character string you enter in the MonitoringXX Condition property matches what is set in Program Name field of the PD\_APS or PD\_APSI record, the Command Line field of the PD\_APS record, and the Service Name field of the PD\_ASVC record. Any character in the source information that is not in the ASCII character set range of 0x20 to 0x7E will be converted to a hash mark (#; 0x23) before it is stored in the Program Name field of the PD\_APS or PD\_APSI record, the Command Line field of the PD\_APS record, and the Service Name field of the PD\_ASVC record. Note that multi-byte characters are processed in single-byte units during conversion. For example, the multi-byte (full-width) letter A is converted as follows:

Source information		Post-conversion information	
Character encoding	Binary	Binary	Character string
Shift-JIS	8260	2360	# `
EUC	A3C1	2323	##
UTF-8	EFBCA1	232323	###

3. Click the **OK** button.

The settings are enabled.

### (c) Binding an alarm table to the monitoring agent

Finally, bind an alarm table to the monitoring agent in order to monitor information about operating status. The alarm for monitoring information about operating status is the Application Status alarm. Edit it as necessary. For details about the Application Status alarm, see [Application Status](#) in [7. Monitoring Templates](#).

To bind an alarm table:

- From the monitoring console browser, log in to PFM - Web Console. The Main window appears.
- In the navigation frame of the Main window, click the **Agents** tab. The **Agents** tree appears.

- In the navigation frame of the **Agents** tree, select *host-name*<**Windows**> (Agent Collector service).  
A check mark is displayed next to the Agent Collector service.
- Select the **Bind Alarm Table** method in the method frame.  
The Bind Alarm Table [Select Alarm Table] window appears.
- Select an alarm table displayed at the bottom of the **Windows** folder, and then click the **OK** button.  
The alarm table is bound to the monitoring agent.

To monitor the status of a particular process only, you can create an alarm for the following condition expressions.

Table 6–8: Condition expressions for monitoring the status of a particular process only

Item	Condition expressions
Record	Application Process Count (PD_APPD)
Field	Application Name Monitoring Label Monitoring Status
Abnormal condition and warning condition <sup>#1</sup>	Application Name = <i>Name</i> <sup>#2</sup> AND Monitoring Label = <i>Label</i> <sup>#2</sup> AND Monitoring Status = ABNORMAL

#1

The same conditions are specified for abnormal conditions and warning conditions.

#2

Specify the application name and monitoring label for the application you want to monitor.

## (2) Checking or changing the settings in a user-defined record (monitoring target)

To check or change the settings for a monitoring target for collecting information about the operating status of processes:

- From the monitoring console browser, log in to PFM - Web Console.  
The Main window appears.
- In the navigation frame of the Main window, select the **Services** tab.  
The **Services** tree appears.
- 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 that host.  
The name of each service is displayed by its service ID. For details about the service IDs, see *B. List of Identifiers* and the section that explains the service naming conventions in the appendix of the *JPI/Performance Management Planning and Configuration Guide*.  
The format of the service ID depends on whether the product name display functionality is enabled. For details about the product name display functionality, see the chapter that explains the Performance Management functionality in the *JPI/Performance Management Planning and Configuration Guide*.
- Expand the contents of the monitoring agent host folder, and then 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 Service Properties window appears.
6. Expand the **Advanced application monitoring > Application monitoring setting** tree, and then select the tree of the application name you want to check.
7. Check the settings.
8. To change a setting, perform step 2 under *Setting the application properties* in (1) *Setting user-defined records (monitoring targets)*.
9. Click the **OK** button.  
If you updated a setting in step 8, that change becomes effective.

### (3) Deleting a user-defined record (monitoring target)

To delete a monitoring target:

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, select the **Services** tab.  
The **Services** tree 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 that host.  
The name of each service is displayed by its service ID. For details about the service IDs, see *B. List of Identifiers*, and the section that explains the service naming conventions in the appendix of the *JPI/Performance Management Planning and Configuration Guide*.  
The format of the service ID depends on whether the product name display functionality is enabled. For details about the product name display functionality, see the chapter that explains the Performance Management functionality in the *JPI/Performance Management Planning and Configuration Guide*.
4. Expand the contents of the monitoring agent host folder, and 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 Service Properties window appears.
6. Select the **Advanced Application Monitoring > ADDITION OR DELETION A SETTING** tree.
7. At the bottom of the information frame, select the application name of the monitoring target to be deleted from **DELETE AN APPLICATION MONITORING SETTING**, and then click the **OK** button.  
The setting is deleted.

## 6.6.6 Command-based settings for collecting information about the operating status of processes

This section describes how to execute commands in order to specify settings for collecting information about the operating status of processes.

Settings for collecting information about the operating status of processes can also be specified through the **Agents** tree of PFM - Web Console, but using commands enables you to use batch processing to automate maintenance and configuration.

## (1) Setting user-defined records (monitoring targets)

To set a monitoring target:

1. Create an application definition file.
2. Create an application.
3. Bind an alarm table to the monitoring agent.

To collect information about operating status on a per-process or per-service basis, you set only one process or service for the application when you create the application definition file. To collect information about operating status on a per-application basis, you can set more than one process or service for the application when you create the application definition file.

The subsections below provide a more detailed description of how to set monitoring targets.

For details about the `jpcmkkey`, `jpcprocdef create`, `jpcprocdef output`, and `jpctool alarm bind` commands, see the chapter that describes commands in the manual *JP1/Performance Management Reference*.

The service ID is based on the PFM - Agent host name. For example, if the PFM - Agent host name is `pfmhost1`, the service ID will be `TALpfmhost1`. For details about the service IDs, see the chapter that explains the Performance Management functions in the *JP1/Performance Management Planning and Configuration Guide*.

### (a) Creating a key file for authentication

Create a key file for authentication by executing the `jpcmkkey` command on the host where PFM - Web Console is installed. This step is not necessary if you have already created a key file.

The following example executes the command to create a key file for authentication, using `ADMINISTRATOR` as the user name and `xxxxxx` as the password for login authentication:

```
jpcmkkey -user "ADMINISTRATOR" -password "xxxxxx"
```

### (b) Creating an application definition file

The application definition file describes (in XML format) the applicable conditions for collecting information about the operating status of processes. When you create an application, the application definition file is used for the parameters for the `jpcprocdef create` command.

Log in to the host where PFM - Web Console is installed to execute the `jpcprocdef create` command. Use one of the following sample files as a starting point for creating a new application definition file.

If PFM - Web Console on Windows

```
PFM-Web-Console-installation-folder\sample\processmonitoringcommand\jpcprocdef-parameters-windows.xml
```

If PFM - Web Console on UNIX

```
/opt/jp1pcwebcon/sample/processmonitoringcommand/jpcprocdef-parameters-unix.xml
```

To create a new application definition by editing an existing application definition, output it using the `jpcprocdef output` command.

Log into the host on which PFM - Web Console is installed to execute the `jpcprocdef output` command. The following are examples of specifying the `jpcprocdef output` command.

PFM - Web Console on Windows (output to `c:\sample.xml`)

```
jpcprocdef output -agent service-ID -name application1 -f c:\sample.xml
```

PFM - Web Console on UNIX (output to `/tmp/sample.xml`)

```
jpcprocdef output -agent service-ID -name application1 -f /tmp/sample.xml
```

## (c) Creating an application

Execute the `jpcprocdef create` command with the application definition file specified in the `-f` option to create the application.

Log in to the host where PFM - Web Console is installed to execute the `jpcprocdef create` command.

The `jpcprocdef create` command enables you to create an application for a single agent. To create applications for multiple agents, execute the command repeatedly in a batch process. The following are examples of specifying the `jpcprocdef create` command.

PFM - Web Console on Windows (application definition settings information file: `c:\sample.xml`)

```
jpcprocdef create -agent service-ID -f c:\sample.xml
```

PFM - Web Console on UNIX (application definition settings information file: `/tmp/sample.xml`)

```
jpcprocdef create -agent service-ID -f /tmp/sample.xml
```

## (d) Binding an alarm table to the monitoring agent

Execute the `jpctool alarm bind` command to bind an alarm table to the monitoring agent in order to monitor information about operating status.

Log in to the host where PFM - Manager is installed to execute the `jpctool alarm bind` command.

The alarm for monitoring information about operating status is the Application Status alarm. Edit it as necessary. For details about the Application Status alarm, see [Application Status](#) in *7. Monitoring Templates*.

If you have already bound the alarm table, you do not need to bind it every time you set a monitoring target.

Binding an alarm table can be done in the following ways:

- Bind the alarm table in PFM Windows Template Alarms [APP] 10.00
- Bind an alarm table created by the user

The following examples execute the `jpctool alarm bind` command to bind the alarm table in PFM Windows Template Alarms [APP] 10.00.

PFM - Manager on Windows

```
jpctool alarmbind -key Windows -table "PFMWindows Template Alarms [APP] 10.00" -id service-ID -add
```

## PFM - Manager on UNIX

```
jpctool alarmbind -key Windows -table "PFMWindows Template Alarms [APP] 10.00" -id  
service-ID -add
```

The following examples execute the `jpctool alarm bind` command to bind an alarm table created by the user.

## PFM - Manager on Windows

```
jpctool alarm bind -key Windows -table user-created-alarm-table-name# -id service-ID -add
```

## PFM - Manager on UNIX

```
jpctool alarm bind -key Windows -table user-created-alarm-table-name# -id service-ID -add
```

#

Specify for *user-created-alarm-table-name* the name of the user-created alarm table.

To monitor the status of a particular process only, you can create an alarm with the condition expressions listed in [Table 5-6 Condition expressions for monitoring the status of a particular process only](#).

## (2) Deleting a user-defined record (monitoring target)

To delete a monitoring target:

1. Check the name of the application definition you want to delete.
2. Unbind the alarm table.
3. Delete the application definition.

For details about the commands `jpccmkkey`, `jpccprocdef list`, `jpctool alarm unbind`, and `jpccprocdef delete`, see the chapter that describes commands in the manual *JPI/Performance Management Reference*.

The service ID is based on the PFM - Agent host name. For example, if the PFM - Agent host name is `pfmhost3`, the service ID will be `TA1pfmhost3`. For details about service IDs, see the chapter that explains the Performance Management functions in the *JPI/Performance Management Planning and Configuration Guide*.

### (a) Creating a key file for authentication

Create a key file for authentication by executing the `jpccmkkey` command on the host where PFM - Web Console is installed. This step is not necessary if you have already created a key file.

The following example executes the command to create a key file for authentication, using `ADMINISTRATOR` as the user name and `xxxxxx` as the password for login authentication:

```
jpccmkkey -user "ADMINISTRATOR" -password "xxxxxx"
```

### (b) Checking the name of the application definition you want to delete

Execute the `jpccprocdef list` command to check the name of the application definition you want to delete from the list of application definitions defined in the monitoring agent.

Log in to the host where PFM - Web Console is installed to execute the `jpccprocdef list` command. The following is an example of specifying the `jpccprocdef list` command:

```
jpccprocdef list -agent service-ID
```

## (c) Unbinding the alarm table

Execute the `jpctool alarm unbind` command to unbind the alarm table where the monitoring agent is bound and stop monitoring.

Log in to the host where PFM - Manager is installed to execute the `jpctool alarm unbind` command. For details about the `jpctool alarm unbind` command, see the chapter that describes commands in the manual *JPI/Performance Management Reference*.

If the alarm table is already unbound, you do not need to unbind it every time you delete a monitoring target.

The following is an example of specifying the `jpctool alarm unbind` command to unbind the alarm table in PFM Windows Template Alarms [APP] 10.00:

```
jpctool alarm unbind -key Windows -table "PFMWindows Template Alarms [APP] 10.00" -id  
service-ID
```

## (d) Deleting the application definition

Execute the `jpcprocdef delete` command to delete an application definition.

Log in to the host where PFM - Web Console is installed to execute the `jpcprocdef delete` command.

The `jpcprocdef delete` command enables you to delete the application definition for a single agent. To delete the application definition for multiple agents, execute the command repeatedly in a batch process.

The following example uses the `jpcprocdef delete` command to delete the application definition `application5`:

```
jpcprocdef delete -agent service-ID -name "application5"
```

## 6.6.7 Distinguishing the letter case of monitoring targets

You can set whether to distinguish between uppercase and lowercase letters in monitoring target process names and service names. By default, uppercase and lowercase letters are not distinguished.

To change whether uppercase and lowercase letters are distinguished in monitoring target names

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, select the **Services** tab.  
The **Services** tree appears.
3. From the **Services** tree, select *host-name*<**Windows**> (Agent Collector service).  
A check mark is displayed next to the Agent Collector service.
4. Select the **Properties** method in the method frame.  
The Service Properties window appears.
5. Select the **Advanced application monitoring** > **Application monitoring setting** tree.  
The property information entry window appears at the bottom of the information frame.



6. Change the value of the `Case Sensitive` property.

Select one of the following.

- **Yes:** Distinguish between uppercase and lowercase letters.
- **No:** Do not distinguish between uppercase and lowercase letters.

7. Click the **OK** button.

The setting takes effect.

The following table shows the effects of the `Case Sensitive` property values.

**Table 6–9: Effects of the `Case Sensitive` property values**

Names of the running processes	Value set in the <code>MonitoringXX Condition</code> property	Value set in the <code>Case Sensitive</code> property	Number of processes
ProcessA PROCESSA	ProcessA	Yes	1
		No	2
	PROCESSA	Yes	1
		No	2
	processa	Yes	0
		No	2

Legend:

Yes: Uppercase and lowercase letters are distinguished.

No: Uppercase and lowercase letters are not distinguished.

The table shows the difference in the number of processes that are determined to be running, depending on the values set in the `MonitoringXX Condition` property and the `Case Sensitive` property. In this example, the two processes `ProcessA` and `PROCESSA` are running on the PFM - Agent host.

*Note:*

The setting of the `Case Sensitive` property affects all application definitions. If you change the setting of the `Case Sensitive` property, check and, if necessary, revise existing application definitions.

## 6.6.8 Example of responding to an alarm while collecting information about the operating status of processes

The example in this section illustrates how to identify the process of concern in the event an alarm occurs while the operating status of processes is being monitored.

For details about alarms and reports, see [7. Monitoring Templates](#).

Screenshots from PFM - Web Console 10-00 are shown to illustrate the descriptions in this section.

1. From the menu bar in the Main window, select **Event Monitor**.

The Event Monitor window appears.

Date and Time	Agent	Host	Status	Report	Alarm name
04 10 2013 14:18:00	pfmhost1<Windows>	pfmhost1	Warning	n/a	n/a
04 10 2013 14:18:00	pfmhost1<Windows>	pfmhost1	Warning		Application Status
04 10 2013 14:16:01	pfmhost1<Windows>	pfmhost1	OK	n/a	n/a
04 10 2013 14:16:01	pfmhost1<Windows>	pfmhost1	OK		Application Status
04 10 2013 14:00:00	inst1[targethost1@pfmhost1]<RM Platform>	target1	Warning	n/a	n/a
04 10 2013 14:00:00	inst1[targethost1@pfmhost1]<RM Platform>	target1	Warning		Application Status
04 10 2013 13:45:00	inst1[targethost1@pfmhost1]<RM Platform>	target1	OK	n/a	n/a
04 10 2013 13:45:00	inst1[targethost1@pfmhost1]<RM Platform>	target1	OK		Application Status
04 10 2013 13:40:00	inst1[targethost1@pfmhost1]<RM Platform>	target1	Warning	n/a	n/a
04 10 2013 13:40:00	inst1[targethost1@pfmhost1]<RM Platform>	target1	Warning		Application Status
04 10 2013 13:25:00	inst1[targethost1@pfmhost1]<RM Platform>	target1	OK	n/a	n/a
04 10 2013 13:25:00	inst1[targethost1@pfmhost1]<RM Platform>	target1	OK		Application Status
04 10 2013 13:20:00	inst1[targethost1@pfmhost1]<RM Platform>	target1	Warning	n/a	n/a
04 10 2013 13:20:00	inst1[targethost1@pfmhost1]<RM Platform>	target1	Warning		Application Status
04 10 2013 11:36:00	pfmhost1<Windows>	pfmhost1	Warning	n/a	n/a
04 10 2013 11:36:00	pfmhost1<Windows>	pfmhost1	Warning		Application Status
04 10 2013 11:35:00	WIN-WT2AFYJYZEV<Windows>	WIN-WT2AFYJYZEV	Host Not Available	n/a	n/a
04 10 2013 11:35:00	WIN-WT2AFYJYZEV<HealthCheck>	WIN-WT2AFYJYZEV	Host Not Available	n/a	n/a
04 10 2013 11:35:00	pfmhost3<UNIX>	pfmhost3	Host Not Available	n/a	n/a
04 10 2013 11:34:49	inst1[All@pfmhost1]<RM Platform>	pfmhost1	OK	n/a	n/a
04 10 2013 11:34:49	inst1[targethost1@pfmhost1]<RM Platform>	target1	OK	n/a	n/a
04 10 2013 11:34:49	inst1[pfmhost1]<RM Platform>	pfmhost1	OK	n/a	n/a
04 10 2013 11:34:44	pfmhost1<Windows>	pfmhost1	OK	n/a	n/a
04 10 2013 11:34:38	pfmhost1<HealthCheck>	pfmhost1	OK	n/a	n/a

- Click the report icon for the alarm that occurred.  
The Application Status report appears.

Record Time	Application Name	Application Status	Application Exist	Record Time
04 10 2013 14:35:13	application1	ABNORMAL	NORMAL	04 10 2013 14:35:13
04 10 2013 14:35:13	application2	NORMAL	NORMAL	04 10 2013 14:35:13
04 10 2013 14:35:13	application3	NORMAL	NORMAL	04 10 2013 14:35:13
04 10 2013 14:35:13	application4	NORMAL	NORMAL	04 10 2013 14:35:13
04 10 2013 14:35:13	application5	NORMAL	NORMAL	04 10 2013 14:35:13

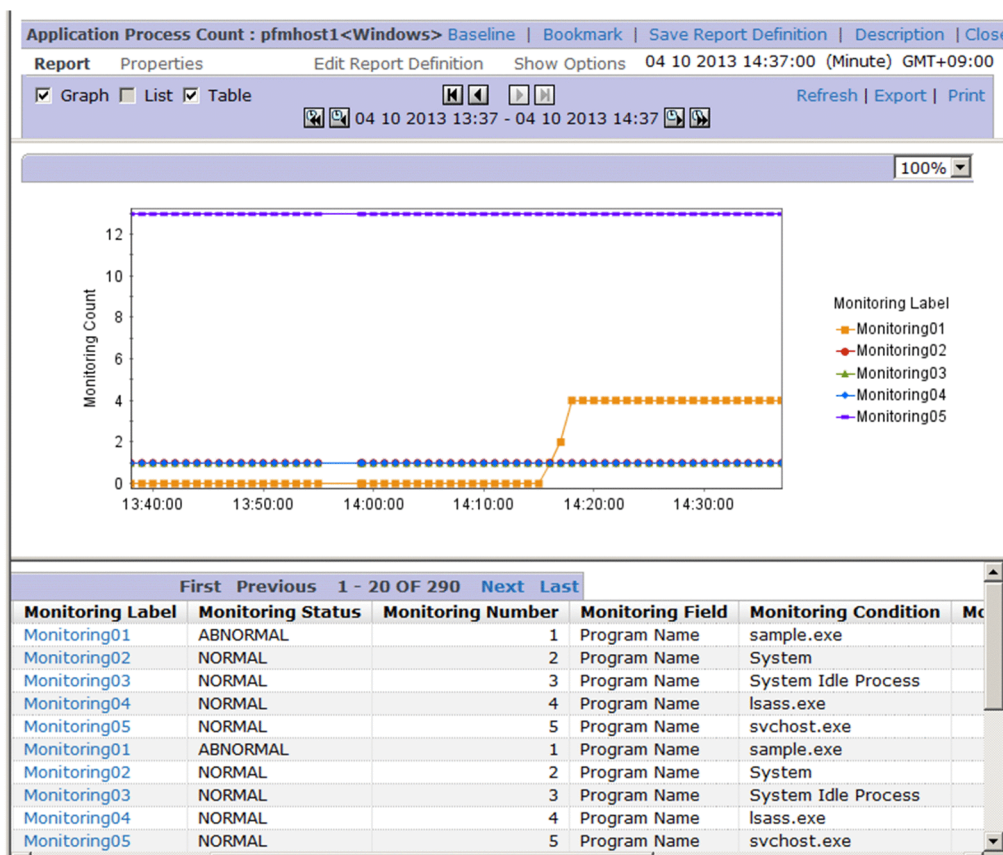
- Check for locations where the value of **Application Status** or **Application Exist** is **ABNORMAL** to identify the application for which a warning has occurred.
- Under **Application Name**, click the application for which the warning occurred.  
In this case, click **application1**.  
The Application Process Status report appears.

Monitoring Status	Monitoring Min	Monitoring Max	Monitoring Count	Monitoring Number	Monitoring Field	Monitoring Condition
ABNORMAL	1	2	4	1	Program Name	sample.exe
NORMAL	1	65,535	1	2	Program Name	System
NORMAL	1	65,535	1	3	Program Name	System Idle Process
NORMAL	1	65,535	1	4	Program Name	lsass.exe
NORMAL	13	65,535	13	5	Program Name	svchost.exe

- Check for locations where the value of **Monitoring Status** is **ABNORMAL** to identify the process for which a warning has occurred.  
In this case, the warning has occurred in **sample.exe**.

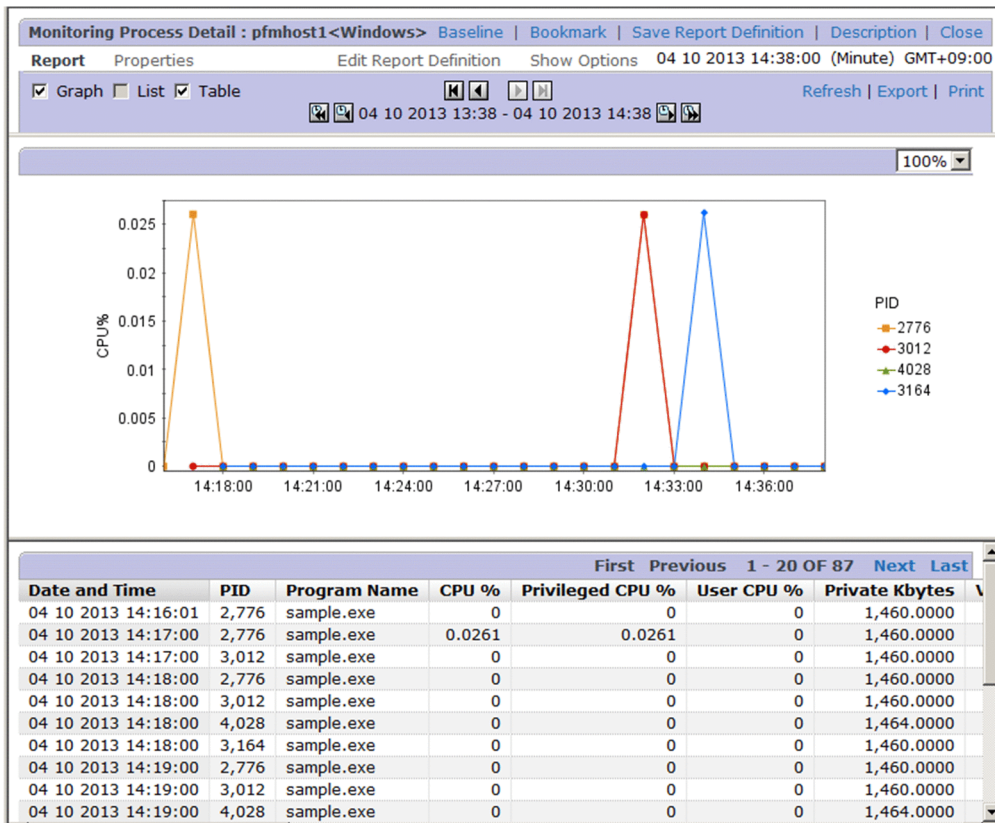
6. If historical data for the PD\_APPD record is being collected, you can click on the value under **Monitoring Count**, if desired.

The Application Process Count report is displayed. You use this report to check the history of changes in the number of processes and the status of each process.



7. If historical data for the PD\_APPI record is being collected, you can click on the value under **Monitoring Label**, if desired.

The Monitoring Process Detail report is displayed. You use this report to examine performance information for specific processes for which process monitoring has been set.



Note:

Depending on the timing of the display of the Application Status report (real-time report) from the Event Monitor, or the display of the Application Process Status report (real-time report) from the Application Status report, once the alarm status has returned to normal you may not be able to identify the process or service of concern in these real-time reports. In such a case, browse the Event Monitor or Application Process Count report (historical reports) to check for changes in status following the occurrence of the alarm.

## 6.6.9 Notes on collecting information about the operating status of processes

- If an asterisk (\*) is specified as a monitoring condition for the process operation and non-operation information collection functionality, the functionality sometimes improperly detects command lines in the system that contain an asterisk. This is because the asterisk in the monitoring condition acts like a wildcard.
- If a command line is specified for a monitoring condition of the process operation and non-operation information collection functionality, the number of spaces in the command line of a running process might differ from that used for executing a command.

In this case, set the monitoring condition to the number of spaces in the command line that is recognized by PFM - Agent.

Example: Execution program "ABC" and specified argument "DEF" Run command

```
ABC^DEF
```

Command line in the OS

```
ABC^^DEF
```

## Command line recognized by PFM - Agent

```
ABC^^DEF
```

Note: ^ indicates a single-byte space.

## 6.7 Settings for collecting information about the application operating status

---

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.

Note that the functionality for collecting information about the application operating status is associated with versions 09-00 and earlier. Collection of information about the operating status of processes is an extension in version 10-00 of this original functionality.

For details about the differences between the earlier functionality for collecting information about the application operating status and collection of information about the operating status of processes, see [6.6.2 Differences in functionality from previous versions](#).

### 6.7.1 User-defined record settings for collecting application operating status information 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).

#### (1) 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 *JPI/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 *JPI/Performance Management Planning and Configuration Guide*.
4. Expand the contents of the PFM - Agent host folder, and then 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 **Service 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 setting** tree of the **Service Properties** window.

### Important

- 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.

## (2) To set instance properties

1. After finishing the above step for setting the instance properties, display the **Service Properties** window again and select the instance name tree generated in the **Application monitoring setting** 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 6–10: 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

## Important

- The value specified for the `ProcessXXName` property is used to evaluate the application operating status. 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 [6.7.4\(4\) Monitoring whether a given process is running when there are multiple processes for which the first 31 bytes of the names are the same](#).
- All alphanumeric and special characters can be used to specify the `ProcessXXName` property, except for the following:  
Tab (\t) \ : ; , " ' < > |
- Wildcard characters \* and ? can also be specified in the `ProcessXXName` property. An asterisk (\*) represents zero or more instances of any character, and a question mark (?) represents any single 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.

## 6.7.2 Checking or changing user-defined records for collecting application operating status information

To check or change the user 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 *JPI/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 *JPI/Performance Management Planning and Configuration Guide*.

4. Expand the contents of the PFM - Agent host folder, and then 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 **Service Properties** page appears.

6. Expand the **Application monitoring setting** 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.

### 6.7.3 Deleting user-defined records for collecting application operating status information

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 *JPI/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 *JPI/Performance Management Planning and Configuration Guide*.

4. Expand the contents of the PFM - Agent host folder, and then 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 **Service Properties** page appears.

6. Select the **ADDITION OR DELETION A SETTING** tree.

7. 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.

## 6.7.4 Example of using an alarm when collecting information about the application operating status

This subsection provides an example of using an alarm with the function that collects information about the application operating status.

### (1) 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 6–11: Example of specific process start

Program name	Process name
GyoumuProcess.exe	GyoumuProcess

To monitor the startup status of a specific process:

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 setting** tree as follows:

```
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 6–12: 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. 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.

## (2) 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 6–13: 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 setting** 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 6–14: 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 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.

### (3) 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 6–15: 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 setting** tree as follows:

Process01 Kind: Select **Command Line**.  
 Process01 Name: Enter GyoumuProcess\*.  
 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 6–16: 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.

#### (4) 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 6–17: 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 setting** 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 6–18: 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.

## 6.8 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.

### 6.8.1 Overview of the functionality for collecting user-specific performance data

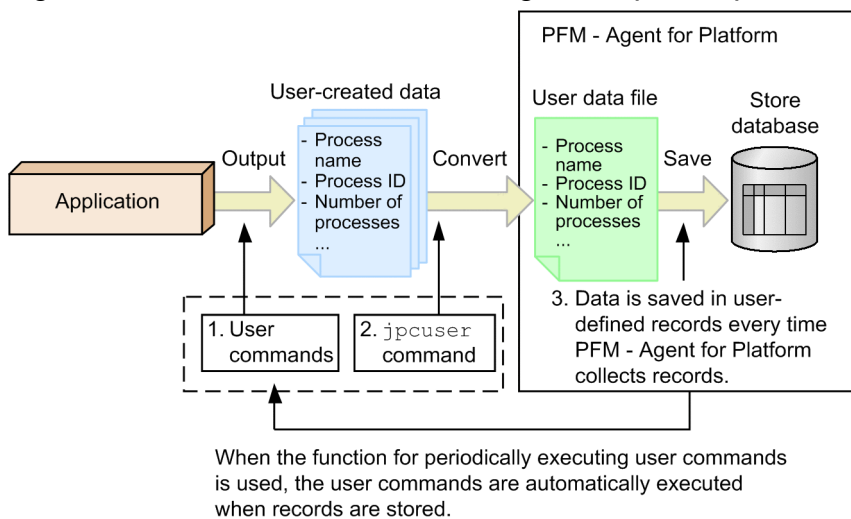
The following explains functionality for collecting user-specific performance data and functionality for periodically executing user commands.

#### (1) 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, PI\_UPIB, PI\_XUI1 to PI\_XUI5). 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 6–2: 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.

When no user data file has been created due to a failure to execute a user command or for other reasons, the KAVF11508-W message<sup>#</sup> is output, and collection of the applicable records is skipped.

#

- Suppose that PFM - Agent for Platform is configured to execute user commands prior to record collection by using the functionality for periodically executing user commands. In this case, if PFM - Agent for Platform fails to activate a user command or if a user command execution times out, this message is not output.
- When PFM - Agent for Platform repeatedly fails to execute a user command, this message is output only once an hour for the same record.

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.

### Important

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.

When the `jpcuser` command is executed directly from a user command, the user command must be executed by a user with Administrators permissions.

## (2) 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 *(1) Functionality for collecting user-specific performance data*.

The functionality for periodically executing user commands runs in accordance with the **Collection Interval** setting specified for user records. User commands are therefore executed during historical data collection and alarm monitoring data collection but not during real-time data collection.

As for the timing of executing user commands, you can select one of the following options: after record collection (after user data files are loaded) and before record collection (before user data files are loaded). By default, "before data collection" is set.

The following figure shows the flow of processing for functionality for periodically executing user commands.



Figure 6–3: Flow of processing for functionality for periodically executing user commands (when user commands are to be executed after record collection)

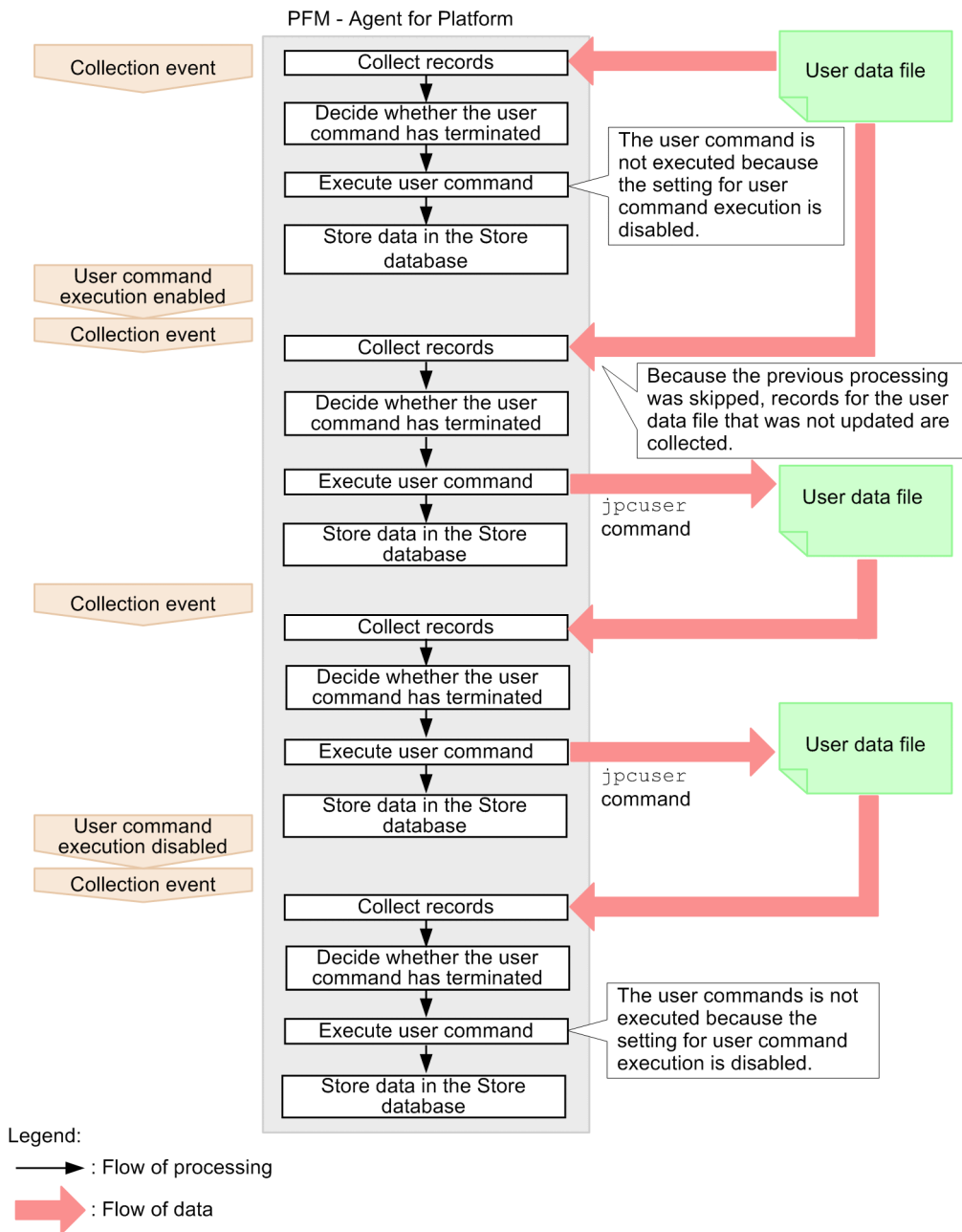
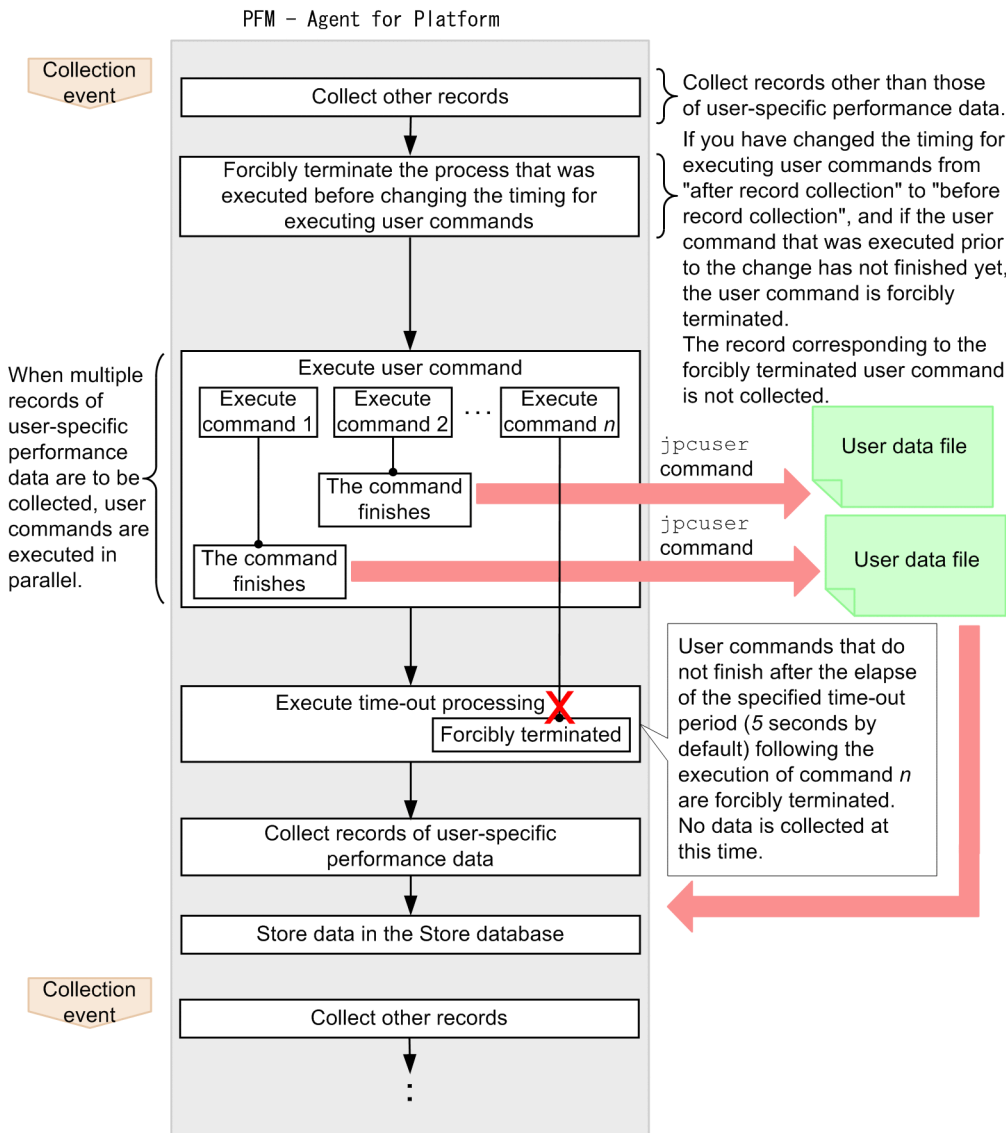


Figure 6–4: Flow of processing for functionality for periodically executing user commands (when user commands are to be executed before record collection)



Legend:  
 —▶ : Flow of processing  
 ▶ : Flow of data

Functionality for periodically executing user commands determines whether the previously started user command has terminated, and skips user command processing if it is executing.

**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.

**(3) Notes on 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 following PFM - Agent for Platform service folders are used as the current folder for executing functionality for periodically executing user commands:

- Physical host environment: *installation-folder*\agtt\agent
- Logical host environment: *environment-folder*\jp1pc\agtt\agent

#### Notes on executing user commands before record collection

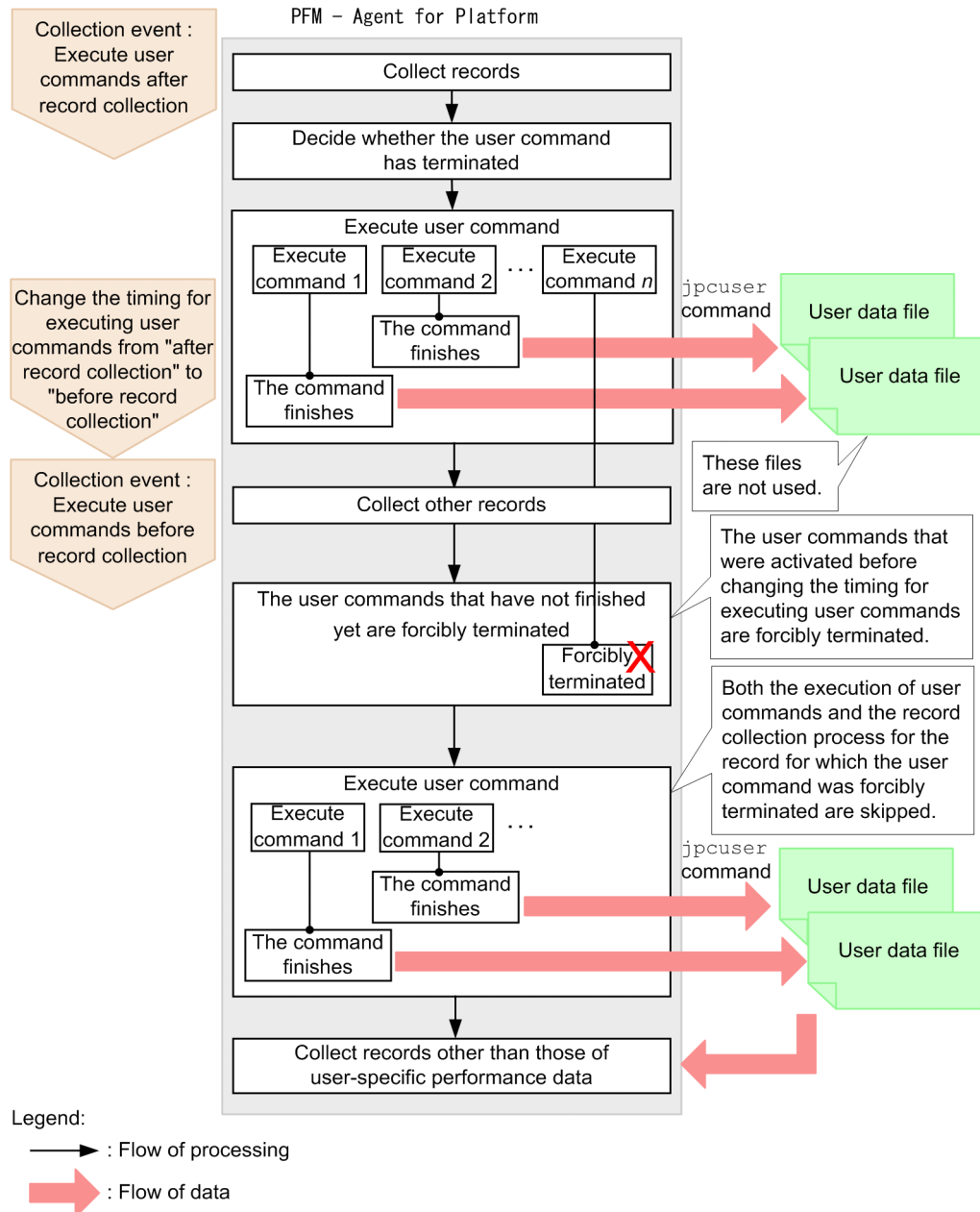
- When a user command times out, it is forcibly terminated. Processes activated from inside the user command, however, are not forcibly terminated. If necessary, add a new user command that allows you to end processes activated from the previously activated user command when the processes have timed out.
- When no user command is specified, when an attempt to activate a user command fails, or when a user command times out, the record collection process corresponding to the user command is skipped.
- User commands are executed after other records are collected. For this reason, there is a time lag between the timing of a collection event and the execution of user commands.
- Even when a user command is being executed, the Agent Collector service status is "Busy".

#### Notes on changing the timing of executing user commands

- If you change the timing of executing user commands from after record collection to before record collection, the results of the user commands executed prior to this change will not be collected. If the user commands that were executed prior to the change have not finished by the time the record collection process immediately after the change begins, these user commands are forcibly terminated.

Note that both the execution of user commands and the record collection process for the record for which the user command was forcibly terminated are skipped. (The execution of user commands and the record collection process are resumed the next time a record is collected.)

Figure 6–5: Notes on changing the timing of executing user commands from after record collection to before record collection



Other notes

- Windows 16-bit applications cannot be executed.
- When specifying a command in the Windows SysWOW64 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 (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 is used as the current folder.
- If the path of the user command to be executed contains a space, enclose the path in double quotation marks (").

Example:

```
"C:\Program Files (x86)\userperf\userperf.bat"
```

## 6.8.2 Settings for collecting user-specific performance data

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.

### (1) 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.

#### (a) 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 6–19: Types of key information

Type	Field name	Explanation
Transaction type	Trans Type	Identifies the instance type.
Transaction key	Trans Data Key (numeric type)	Identifies each of the instances that have the same transaction type.
	Trans String Key (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 instance of each record is used.

## (b) 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 6–20: 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 ( <code>PD_UPD</code> )	$2 \times 3 = 6$	$1 + 2 + 4 = 7$	1
	User Data Detail - Extended ( <code>PD_UPDB</code> )	$5 \times 3 = 15$	$5 + 5 + 5 = 15$	1
PI record type	User Data Interval ( <code>PI_UPI</code> )	$4 \times 3 = 12$	$1 + 2 + 4 = 7$	1
	User Data Interval - Extended ( <code>PI_UPIB</code> )	$10 \times 3 = 30$	$5 + 5 + 5 = 15$	1
	User Data Interval - Expanded $n^{\#1}$ ( <code>PI_XUI<math>n^{\#1}</math></code> )	$60 \times 1 = 60^{\#2}$	$1^{\#3} + 2^{\#4} = 3$	1

#1

$n$  denotes a number in the range from 1 to 5.

#2

These are all double type.

#3

This is the number of 128-byte character strings.

#4

This is the number of 64-byte character strings.

The following table lists the criteria for selecting the recommended user-defined record.

Table 6–21: 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	<code>PI_UPI</code>
Yes	Yes	<code>PI_UPIB</code> , <code>PI_XUI1</code> to <code>PI_XUI5</code>
No	No	<code>PD_UPD</code>
No	Yes	<code>PD_UPDB</code>

## (2) 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 [6.8.4 Format of user-created data files](#).

Store the user-created data at a path that can be specified by the `-file` option when the `jpcuser` command is executed. For details, see the description of the arguments in [6.8.3 Format of the jpcuser command](#).

To verify the user-created data output by the user commands, execute the `jpcuser` command in the following format:

- Physical host environment:

```
installation-folder\agtt\agent\jpcuser\jpcuser PI_UPI -file user-created-dat  
a -debug 1
```

- Logical host environment:

```
installation-folder\agtt\agent\jpcuser\jpcuser PI_UPI -file user-created-dat  
a -debug 1 -lhost logical-host-name
```

When the command is executed, the following debug log file is generated:

- Physical host environment:

```
installation-folder\agtt\agent\jpcuser\debug\jpcuser_dbg_01.log
```

- Logical host environment:

```
environment-folder\jp1pc\agtt\agent\jpcuser\debug\jpcuser_dbg_01.log
```

Use the debug log file to check for errors.

For details about the `jpcuser` command, see [6.8.3 Format of the jpcuser command](#).

## (3) 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<sup>#</sup>. The method for setting these properties is the same for PD\_UPD records, PD\_UPDB records, PI\_UPI records, PI\_UPIB records, and PI\_XUI1 to PI\_XUI5 records.

#

Note that when you use PFM - Web Console to specify the settings for periodically collecting user-specific performance data, the service to be selected differs depending on whether a physical host or a logical host is used:

- Physical host environment: `Windows $physical-host-name$`  or `TA1 $physical-host-name$`
- Logical host environment: `Windows $logical-host-name$`  or `TA1 $logical-host-name$`

Figure 6–6: Properties for functionality for periodically executing user commands

```
Service properties
host-name<Windows>
|- General
|- System
|- Network Services
:
|- User Command Setting
  |- PD_UPD
  |- PD_UPDB
  |- PI_UPI
  |- PI_UPIB
  |- PI_XUI1
  |- PI_XUI2
  |- PI_XUI3
  |- PI_XUI4
  |- PI_XUI5
```

Table 6–22: Setting properties for user records

Property	Value	Description	Default value
User Command Setting - User Command Execution Timing	After/Before	By using the functionality for periodically executing user commands, specify when to execute user commands. <ul style="list-style-type: none"> <li>• After: Execute user commands after record collection.</li> <li>• Before: Execute user commands before record collection.</li> </ul>	After
User Command Setting - User Command Timeout	Integer in the range from 1 to 86,400	If you select <b>Before</b> as the <b>User Command Execution Timing</b> property of the functionality for periodically executing user commands, specify the time (seconds) <sup>#</sup> after which the execution of user commands is discontinued. <p>#: The specified time when the execution of user commands is discontinued must not affect the timing of other record collection processing.</p>	5
User Command Setting - <i>record-name</i> - 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
User Command Setting - <i>record-name</i> - 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	Blank



Property	Value	Description	Default value
User Command Setting - <i>record-name</i> - UserCommand	Absolute path	alphanumeric characters and half-width symbols can be specified, except for the following characters:   < >	Blank

*Notes:*

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.
3. When a logical host is used, you can use the **UserCommand** property to specify the path to the user commands located on the shared disk. If user commands are not located on the shared disk, you need to locate them at the same path for both the executing node and standby node.
4. If you select **After** as the **User Command Execution Timing** property, and if the executed user commands do not finish by the time the next record collection processing begins, no user command is executed.

 **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.

## (4) 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 *JPI/Performance Management Planning and Configuration Guide*.

## (5) Example of collecting user-specific performance data (for a physical host environment)

This subsection provides an example of collecting process information into the `PI_UPI` record under the conditions shown in the following table.

Table 6–23: 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
sm	32-byte character string	User String (32)	Process name
u	Unsigned long type	User Unsigned Long 1	Number of threads

## (6) Examples of user commands (for a physical host environment)

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`:

```
' Output header.
WScript.Echo "Product Name=PFM-Agent for Platform (Windows)"
WScript.Echo "FormVer=0001"
' Output option header.
WScript.Echo "tt ki sm 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_OperatingSystem
")
    WScript.Echo "TotalPhysicalMemory", Memory.TotalVisibleMemorySize
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
```

## Note

- For an example of collecting information about used ports, see [3.1.8 Examples of collecting information about used ports](#).
- For an example of collecting performance data from multiple hosts on which PFM product is not installed, see [3.1.9 Examples of collecting performance data from multiple hosts on which PFM products are not installed](#).

## (7) Example of a batch file used to perform periodic collection (for a physical host environment)

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 (x86)\Hitachi\jplpc\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 (x86)\Hitachi\jplpc\agtt\agent\jpcuser
```

## Note

This batch file can be periodically executed using the Windows Task Scheduler.

## (8) Example of collecting user-specific performance data (for a logical host environment)

The table below describes an example of collecting process information into the `PI_UPI` record. In a logical host environment, if you include name information about the host on which user commands are executed, you can easily tell which node the command is executed on.

Table 6–24: 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
sm	32-byte character string	User String 5	Process name

Option	Explanation	Corresponding field	Value
u	Unsigned long type	User Unsigned Long 1	Number of threads
sm	32-byte character string	User String 6	Host name

## (9) Examples of user commands (for a logical host environment)

The following are examples of user commands (`userproc1.vbs`) that acquire process information from Windows and output user-created data.

`userproc1.vbs`:

```
' Declare variables.
Dim objNetwork
Dim hostName
' Generate a network object.
Set objNetwork = CreateObject("WScript.Network")
' Acquire the name of the host who is executing the user command.
hostName = objNetwork.ComputerName
' Output header.
WScript.Echo "Product Name=PFM-Agent for Platform (Windows)"
WScript.Echo "FormVer=0001"
' Output option header.
WScript.Echo "tt ki sm u sm"
' Get and output a list of processes. A string including a space is enclosed
in Chr(34) codes.
' Include the host name in the last field.
for each Process in GetObject("winmgmts:").InstancesOf("win32_process")
    WScript.Echo "Process", Process.ProcessId, Chr(34) & Process.Name & Chr(34)
, Process.ThreadCount, hostName
next
' Release the network object.
Set objNetwork = Nothing
```

Example of user-created data output by `userproc1.vbs`:

```
Product Name=PFM-Agent for Platform (Windows)
FormVer=0001
tt ki sm u sm
Process 0 "System Idle Process" 1 jpl-aop
Process 8 "System" 41 jpl-aop
Process 172 "SMSS.EXE" 6 jpl-aop
Process 200 "CSRSS.EXE" 12 jpl-aop
Process 196 "WINLOGON.EXE" 19 jpl-aop
Process 248 "SERVICES.EXE" 41 jpl-aop
```



### Note

- For an example of collecting information about used ports, see [3.1.8 Examples of collecting information about used ports](#).

- For an example of collecting performance data from multiple hosts on which PFM products are not installed, see [3.1.9 Examples of collecting performance data from multiple hosts on which PFM products are not installed](#).

## (10) Example of a batch file used to perform periodic collection (for a logical host environment)

The following gives an example of a batch file (`userperf.bat`) using functionality for periodically executing user commands to perform periodic execution.

```
REM Move the folder.
cd S:\jpl\userdata
REM Generate user-created data.
cscript //nologo userprocl.vbs > UPI1.txt
REM Use the jpcuser command to convert the user-created data into a record format.
"C:\Program Files (x86)\Hitachi\jplpc\agtt\agent\jpcuser\jpcuser" PI_UPI -file UPI1.txt -lhost jpl-halaop#
```

#

If `-debug 2` is specified, debug log information is output to the following folder:  
*environment-folder*\jplpc\agtt\agent\jpcuser\debug\  
 Store the batch file (`userperf.bat`) and VB script in the following location:  
 S:\jpl\userdata



### Note

This batch file can be periodically executed using the Windows Task Scheduler.

## 6.8.3 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]]
      [-lhost logical-host-name]
```

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 format of the debug log and how to read it, see [6.8.5 Checking the debug log to determine whether user-created data is correct](#).

To execute this command in a logical host environment, execute it on the executing node.

If an error occurs during execution of this command, an error message is output to the following folders:

- Physical host environment: *installation-folder*\agtt\agent\jpcuser\log\public\
- Logical host environment: *environment-folder*\jplpc\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 `-file` option, `-debug` option, and `-lhost` option can be specified in any order. The arguments that are always required on the command line are *record-name* and a `-file` option. The `-debug` option and `-lhost` 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
- PI\_XUI1
- PI\_XUI2
- PI\_XUI3
- PI\_XUI4
- PI\_XUI5

`-file` *user-created-data-file-name*

Specify the name of a user-created data file whose length is no more than 259 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 `jpcuser` 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 6–25: 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 `jpcuser_XXX`. The `XXX` part represents the record type (UPD, UPDB, UPI, UPIB, or XUIn (where *n* is a number in the range from 1 to 5)). The storage folders are as follows:

- Physical host environment: `installation-folder\agtt\agent\jpcuser\userdata`
- Logical host environment: `environment-folder\jp1pc\agtt\agent\jpcuser\userdata`

The debug log file is `jpcuser_dbg_XX.log`. The `XX` part is a two-digit number that indicates how new the log file is. The storage folders are as follows:

- Physical host environment: `installation-folder\agtt\agent\jpcuser\debug`
- Logical host environment: `environment-folder\jp1pc\agtt\agent\jpcuser\debug`

The following table explains the naming rule for debug log files.

**Table 6–26: Example of debug log output**

Debug log file name	Explanation
<code>jpcuser_dbg_01.log</code>	The latest debug log file
<code>jpcuser_dbg_02.log</code>	The second latest debug log file
<code>jpcuser_dbg_03.log</code>	The third latest debug log file
...	...

**-lhost**

Specify the logical host name of the host on which this command is executed. If you omit specifying this option, a physical host is assumed. For details about the format of a logical host name, see the description of the `-lhost` option of the `jpccconf ha setup` command in the manual *JPI/Performance Management Reference*.

Note that you can set this option only once.

**Return value:**

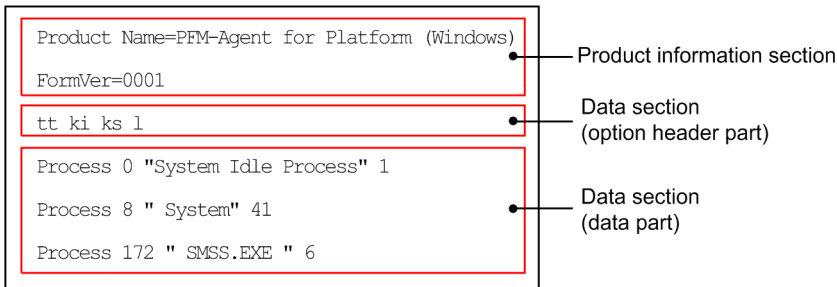
0	Normal termination
1 to 100	Normal termination with a warning

## 6.8.4 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 6–7: Example configuration of user-created data



### (1) 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.

### (2) 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.

#### (a) 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 6–27: 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_UP D (17)	PD_UP DB (34)	PI_UPI (23)	PI_UPIB (49)	PI_XUI1 to PI_XUI5 ( 67)
1	tt	Trans Type	Transaction type. This option is a required item. <sup>#1</sup> Size: 1 to 19 bytes	1	1	1	1	1
2	ki	Trans Data Key	Numeric-type transaction key. Either <i>ki</i> or <i>ks</i> , or both, must be specified. Type: <i>ulong</i> Specifiable characters: Numeric values and a plus sign (+)	1	1	1	1	1
3	ks	Trans String Key	String-type transaction key. Either <i>ki</i> or <i>ks</i> , or both, must be specified. <sup>#1</sup> Size: 1 to 19 bytes	1	1	1	1	1
4	f	User Float	Floating point number. <sup>#2</sup> Type: <i>double</i>	2	5	2	5	30
5	fr <sup>#3</sup>	User Float Roll	Floating point number for a cumulative value <sup>#2</sup> Type: <i>double</i>	--	--	2	5	30
6	l	User Long	Signed long data. Type: <i>long</i> Specifiable characters: Numeric values and signs (+, -)	2	5	2	5	--
7	lr <sup>#3</sup>	User Long Roll	Signed long data for a cumulative value. Type: <i>long</i> Specifiable characters: Numeric values and signs (+, -)	--	--	2	5	--
8	sl	User String (64)	64-byte character string <sup>#1</sup> Size: 1 to 63 bytes + NULL	1	5	1	5	2
9	sm	User String (32)	32-byte character string <sup>#1</sup> Size: 1 to 31 bytes + NULL	2	5	2	5	--
10	ss	User String (16)	16-byte character string <sup>#1</sup> Size: 1 to 15 bytes + NULL	4	5	4	5	--
11	sv	User String (128)	128-byte character string <sup>#1</sup> Size: 1 to 127 bytes + NULL	--	--	--	--	1
12	t	User Time	Time data ( <i>time_t</i> type) in the following format:	1	1	1	1	1

No.	Option name	Field name	Explanation of value	Number of fields (total)				
				PD_UP D (17)	PD_UP DB (34)	PI_UPI (23)	PI_UPIB (49)	PI_XUI1 to PI_XUI5 ( 67)
12	t	User Time	<i>YYYY/MM/DD, hh:mm:ss</i> The time must be the local time of the machine on which the <code>jpcuser</code> command is executed.	1	1	1	1	1
13	u	User Unsigned Long	Unsigned long data. Type: <code>ulong</code> Specifiable characters: Numeric values and a plus sign (+)	2	5	2	5	--
14	ur#3	User Unsigned Long Roll	Unsigned long data for a cumulative value. Type: <code>ulong</code> Specifiable characters: Numeric values and a plus sign (+)	--	--	2	5	--

#### Legend:

--: Not specifiable.

#### #1

The characters that can be specified are uppercase and lowercase 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

## (b) 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.

## (3) Notes

- 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.
- Create user-created data files while making sure their contents are not prepended with a BOM<sup>#</sup>. If the contents of a user-created data file are prepended with a BOM, running the `jpcuser` command results in an error.

#

Abbreviation of "Byte Order Mark", an identifier added to the first line of the file to indicate the type of Unicode encoding (UTF-16 Little Endian, UTF-16 Big Endian, UTF-8, and so on). A 2-byte identifier is added for UTF-16, and a 3-byte identifier is added for UTF-8.

## 6.8.5 Checking the debug log to determine whether user-created data is correct

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 [6.8.4 Format of user-created data files](#).

The following shows the location and name of a debug log file:

- Physical host environment:

```
installation-folder\agtt\agent\jpcuser\debug\jpcuser_dbg_{01|02|03|04|05}.log
```

- Logical host environment:

```
environment-folder\jplpc\agtt\agent\jpcuser\debug\jpcuser_dbg_{01|02|03|04|05}.log
```

The following describes the debug log file format.

### (1) 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 6–28: 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	Execution time and process ID of the <code>jpcuser</code> command	Execution time	YYYY/MM/DD hh:mm:ss	YYYY: Year MM: Month DD: Day hh: Hour mm: Minute ss: Second

No.	Section	Item	Value	Explanation
4	Execution time and process ID of the jpcuser command	Process ID	PID=xxxx	The process ID of the jpcuser command.
5	Header line	Header	Example (for the PD_UPD record): LineNumber, Result, APITime, Recordtype, Transactiontype, t, ks, ki, L1, L2, UL1, UL2, F1, F2, SS1, SS2, SS3, SS4, SM1, SM2, SL1	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 <a href="#">Table 5-28 Header line items in a debug log file and their corresponding field options and field names</a> . 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: File=D:\Program Files (x86)\HITACHI\jplpc\agtt\agent \jpcuser\UPIB_sample01.txt	The user-specified path name of a user-created data file that is read is output.
7		Error or warning message	KAVFxxxx-x	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	OK	Success. The line in the user-created data was free of problems and was converted successfully.
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.	

No.	Section	Item	Value	Explanation
13	Check result	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 6–29: 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
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

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
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
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	F01 to F30	f	User Float 01 to User Float 30	Floating point number value
35	F1R	fr	User Float Roll 1	Cumulative floating point number value
36	F2R	fr	User Float Roll 2	Cumulative floating point number value
37	F3R	fr	User Float Roll 3	Cumulative floating point number value
38	F4R	fr	User Float Roll 4	Cumulative floating point number value
39	F5R	fr	User Float Roll 5	Cumulative floating point number value
40	F01A to F30A	fr	User Float Add 01 to User Float Add 30	Cumulative floating point number value
41	SS1	ss	User String 1	16-byte character string
42	SS2	ss	User String 2	16-byte character string
43	SS3	ss	User String 3	16-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
44	SS4	ss	User String 4	16-byte character string
45	SS5	ss	User String 5	16-byte character string
46	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
47	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
48	SM3	sm	User String 8	32-byte character string
49	SM4	sm	User String 9	32-byte character string
50	SM5	sm	User String 10	32-byte character string
51	SL1	sl	User String 7 (for the PD_UPD or PI_UPI record) User String 11 (for the PD_UPDB or PI_UPIB record) User String 1 (PI_XUI1 to PI_XUI5 records)	64-byte character string
52	SL2	sl	User String 12 (for the PD_UPDB or PI_UPIB record) User String 2 (PI_XUI1 to PI_XUI5 records)	64-byte character string
53	SL3	sl	User String 13	64-byte character string
54	SL4	sl	User String 14	64-byte character string
55	SL5	sl	User String 15	64-byte character string
56	SV1	sv	User String 3	128-byte character string

Legend:

--: Not applicable

## (2) Example of information output to a debug log file

The following figure shows an example of information output to a debug log file.





and a truncated value (abcdefghijklmno) 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.

# 7

## Monitoring Templates

This chapter explains the monitoring templates for PFM - Agent for Platform.

## 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 [APP] 10.00
- PFM Windows Template Alarms [CPU] 09.00
- PFM Windows Template Alarms [DSK] 09.00
- PFM Windows Template Alarms [LOG] 09.00
- PFM Windows Template Alarms [MEM] 09.00
- PFM Windows Template Alarms [NET] 09.00
- PFM Windows Template Alarms [PS] 10.00

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.

Number at the end of an 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 7–1: Alarm list

Alarm table name	Alarm name	Monitoring target
PFM Windows Template Alarms 09.00	<a href="#">Available Memory</a>	Unused size in the physical memory area (MB)
	<a href="#">CPU Usage</a>	CPU usage (%)
	<a href="#">Disk Space</a>	Percentage of free space in the entire usable logical disk
PFM Windows Template Alarms [CPU] 09.00	<a href="#">CPU Usage</a>	CPU usage (%)
	<a href="#">Processor Queue</a>	Number of requests in the processor queue
	<a href="#">SVR Processor Queue</a>	
PFM Windows Template Alarms [MEM] 09.00	<a href="#">Available Memory</a>	Unused space in the physical memory area (MB)
	<a href="#">Committed Mbytes</a>	Amount of used virtual memory area (MB)
	<a href="#">Pages/sec</a>	Rate of paging for the pages when page faults occurred (per second)
	<a href="#">Page Faults/sec</a>	Number of page faults that occurred (per second)
PFM Windows Template Alarms [DSK] 09.00	<a href="#">Disk Space</a>	Percentage of free space in the entire usable disk

Alarm table name	Alarm name	Monitoring target
PFM Windows Template Alarms [DSK] 09.00	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] 10.00	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
	Service (Display Nm)	Name used by the user interface program to identify the service, and the service status during data collection
	Process Existence	Program name
PFM Windows Template Alarms [LOG] 09.00	Event Log (all)	All errors and warnings output to the event log
	Event Log (System)	All WSFC errors and warnings output to the event log
PFM Windows Template Alarms [APP] 10.00	Application Status	Status of the application for which information about process operating status is being collected

# 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	
<b>Main Information</b>	<b>Product</b>	Windows
	<b>Alarm message</b>	Available memory is below %CVS megabytes
	<b>Enable alarm</b>	Selected
	<b>Alarm notification</b>	<b>Notify when the state changed</b>
	<b>Notification target</b>	<b>State changes for the alarm</b>
	<b>Evaluate all data</b>	Do not specify.
	<b>Monitoring time range</b>	<b>Always monitor</b>
	<b>Report alarm when the following damping condition is reached.</b>	Selected
	<b>occurrence(s) during</b>	2
	<b>interval(s)</b>	3
<b>Alarm Conditions</b>	<b>Record</b>	System Overview (PI)
	<b>Field</b>	Available MB
	<b>Abnormal condition</b>	Available MB < 3
	<b>Warning condition</b>	Available MB < 4
<b>Actions</b>	<b>Email</b>	--
	<b>Command</b>	--
	<b>SNMP</b>	<b>Abnormal, Warning, Normal</b>

Legend:

--: Setting is always invalid.

## 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	
<b>Main Information</b>	<b>Product</b>	Windows
	<b>Alarm message</b>	CPU is at %CVS% utilization
	<b>Enable alarm</b>	Selected
	<b>Alarm notification</b>	<b>Notify when the state changed</b>
	<b>Notification target</b>	<b>State changes for the alarm</b>
	<b>Evaluate all data</b>	Do not specify.
	<b>Monitoring time range</b>	<b>Always monitor</b>
	<b>Report alarm when the following damping condition is reached.</b>	Selected
	<b>occurrence(s) during</b>	2
	<b>interval(s)</b>	3
<b>Alarm Conditions</b>	<b>Record</b>	System Overview (PI)
	<b>Field</b>	CPU %
	<b>Abnormal condition</b>	CPU % >= 90
	<b>Warning condition</b>	CPU % > 80
<b>Actions</b>	<b>Email</b>	--
	<b>Command</b>	--
	<b>SNMP</b>	<b>Abnormal, Warning, Normal</b>

Legend:

--: Setting is always invalid.

## 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	
<b>Main Information</b>	<b>Product</b>	Windows
	<b>Alarm message</b>	Available disk space is %CVS%
	<b>Enable alarm</b>	Selected
	<b>Alarm notification</b>	<b>Notify when the state changed</b>
	<b>Notification target</b>	<b>State changes for the alarm</b>
	<b>Evaluate all data</b>	Do not specify.
	<b>Monitoring time range</b>	<b>Always monitor</b>
	<b>Report alarm when the following damping condition is reached.</b>	Selected
	<b>occurrence(s) during</b>	2
	<b>interval(s)</b>	3
<b>Alarm Conditions</b>	<b>Record</b>	Logical Disk Overview (PI_LOGD)
	<b>Field</b>	% Free Space
	<b>Abnormal condition</b>	% Free Space < 5
	<b>Warning condition</b>	% Free Space < 15
<b>Actions</b>	<b>Email</b>	--
	<b>Command</b>	--
	<b>SNMP</b>	<b>Abnormal, Warning, Normal</b>

Legend:

--: Setting is always invalid.

## 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	
<b>Main Information</b>	<b>Product</b>	Windows
	<b>Alarm message</b>	Queue Length = %CVS
	<b>Enable alarm</b>	Selected
	<b>Alarm notification</b>	<b>Notify when the state changed</b>
	<b>Notification target</b>	<b>State changes for the alarm</b>
	<b>Evaluate all data</b>	Do not specify.
	<b>Monitoring time range</b>	<b>Always monitor</b>
	<b>Report alarm when the following damping condition is reached.</b>	Selected
	<b>occurrence(s) during</b>	2
	<b>interval(s)</b>	3
<b>Alarm Conditions</b>	<b>Record</b>	System Overview (PI)
	<b>Field</b>	Processor Queue Length
	<b>Abnormal condition</b>	Processor Queue Length >= 10
	<b>Warning condition</b>	Processor Queue Length >= 2
<b>Actions</b>	<b>Email</b>	--
	<b>Command</b>	--
	<b>SNMP</b>	<b>Abnormal, Warning, Normal</b>

Legend:

--: Setting is always invalid.

## 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	
<b>Main Information</b>	<b>Product</b>	Windows
	<b>Alarm message</b>	Queue Length = %CVS
	<b>Enable alarm</b>	Selected
	<b>Alarm notification</b>	<b>Notify when the state changed</b>
	<b>Notification target</b>	<b>State changes for the alarm</b>
	<b>Evaluate all data</b>	Do not specify.
	<b>Monitoring time range</b>	<b>Always monitor</b>
	<b>Report alarm when the following damping condition is reached.</b>	Selected
	<b>occurrence(s) during</b>	2
	<b>interval(s)</b>	3
<b>Alarm Conditions</b>	<b>Record</b>	Server Work Queues Overview (PI_SVRQ)
	<b>Field</b>	Queue Length
	<b>Abnormal condition</b>	Queue Length >= 3
	<b>Warning condition</b>	Queue Length >= 2
<b>Actions</b>	<b>Email</b>	--
	<b>Command</b>	--
	<b>SNMP</b>	<b>Abnormal, Warning, Normal</b>

Legend:

--: Setting is always invalid.

## 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	
<b>Main Information</b>	<b>Product</b>	Windows
	<b>Alarm message</b>	Committed Mbytes = %CVS1
	<b>Enable alarm</b>	Selected
	<b>Alarm notification</b>	<b>Notify when the state changed</b>
	<b>Notification target</b>	<b>State changes for the alarm</b>
	<b>Evaluate all data</b>	Do not specify.
	<b>Monitoring time range</b>	<b>Always monitor</b>
	<b>Report alarm when the following damping condition is reached.</b>	Selected
	<b>occurrence(s) during</b>	2
	<b>interval(s)</b>	3
<b>Alarm Conditions</b>	<b>Record</b>	System Overview (PI)
	<b>Field</b>	Committed Mbytes
	<b>Abnormal condition</b>	Committed Mbytes >= 2046 <sup>#1</sup>
	<b>Warning condition</b>	Committed Mbytes >= 1024 <sup>#2</sup>
<b>Actions</b>	<b>Email</b>	--
	<b>Command</b>	--
	<b>SNMP</b>	<b>Abnormal, Warning, Normal</b>

Legend:

--: Setting is always invalid.

#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 Mbytes` 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	
<b>Main Information</b>	<b>Product</b>	Windows
	<b>Alarm message</b>	Page Faults = %CVS1
	<b>Enable alarm</b>	Selected
	<b>Alarm notification</b>	<b>Notify when the state changed</b>
	<b>Notification target</b>	<b>State changes for the alarm</b>
	<b>Evaluate all data</b>	Do not specify.
	<b>Monitoring time range</b>	<b>Always monitor</b>
	<b>Report alarm when the following damping condition is reached.</b>	Selected
	<b>occurrence(s) during</b>	2
	<b>interval(s)</b>	3
<b>Alarm Conditions</b>	<b>Record</b>	System Overview (PI)
	<b>Field</b>	Pages/sec
	<b>Abnormal condition</b>	Pages/sec >= 5 <sup>#</sup>
	<b>Warning condition</b>	Pages/sec >= 4 <sup>#</sup>
<b>Actions</b>	<b>Email</b>	--
	<b>Command</b>	--
	<b>SNMP</b>	<b>Abnormal, Warning, Normal</b>

Legend:

--: Setting is always invalid.

#

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	
<b>Main Information</b>	<b>Product</b>	Windows
	<b>Alarm message</b>	Page Faults = %CVS1
	<b>Enable alarm</b>	Selected
	<b>Alarm notification</b>	<b>Notify when the state changed</b>
	<b>Notification target</b>	<b>State changes for the alarm</b>
	<b>Evaluate all data</b>	Do not specify.
	<b>Monitoring time range</b>	<b>Always monitor</b>
	<b>Report alarm when the following damping condition is reached.</b>	Selected
	<b>occurrence(s) during</b>	2
	<b>interval(s)</b>	3
<b>Alarm Conditions</b>	<b>Record</b>	System Overview (PI)
	<b>Field</b>	Page Faults/sec
	<b>Abnormal condition</b>	Page Faults/sec >= 5 <sup>#</sup>
	<b>Warning condition</b>	Page Faults/sec >= 4 <sup>#</sup>
<b>Actions</b>	<b>Email</b>	--
	<b>Command</b>	--
	<b>SNMP</b>	<b>Abnormal, Warning, Normal</b>

Legend:

--: Setting is always invalid.

#

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.

### 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	
<b>Main Information</b>	<b>Product</b>	Windows
	<b>Alarm message</b>	Disk Space (%CVS1) = %CVS2 MB
	<b>Enable alarm</b>	Selected
	<b>Alarm notification</b>	<b>Notify when the state changed</b>
	<b>Notification target</b>	<b>State changes for the alarm</b>
	<b>Evaluate all data</b>	Do not specify.
	<b>Monitoring time range</b>	<b>Always monitor</b>
	<b>Report alarm when the following damping condition is reached.</b>	Do not specify.
	<b>occurrence(s) during</b>	0
	<b>interval(s)</b>	0
<b>Alarm Conditions 1</b>	<b>Record</b>	Logical Disk Overview (PI_LOGD)
	<b>Field</b>	ID
	<b>Abnormal condition</b>	ID <> _Total#1
	<b>Warning condition</b>	ID <> _Total#1
<b>Alarm Conditions 2</b>	<b>Record</b>	Logical Disk Overview (PI_LOGD)
	<b>Field</b>	Free Mbytes
	<b>Abnormal condition</b>	Free Mbytes < 5120#2
	<b>Warning condition</b>	Free Mbytes < 10240#2
<b>Actions</b>	<b>Email</b>	--
	<b>Command</b>	--
	<b>SNMP</b>	<b>Abnormal, Warning, Normal</b>

Legend:

--: Setting is always invalid.



#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.

#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.

### 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	
<b>Main Information</b>	<b>Product</b>	Windows
	<b>Alarm message</b>	Disk Busy % (%CVS1) = %CVS2
	<b>Enable alarm</b>	Selected
	<b>Alarm notification</b>	<b>Notify when the state changed</b>
	<b>Notification target</b>	<b>State changes for the alarm</b>
	<b>Evaluate all data</b>	Do not specify.
	<b>Monitoring time range</b>	<b>Always monitor</b>
	<b>Report alarm when the following damping condition is reached.</b>	Selected
	<b>occurrence(s) during</b>	4
	<b>interval(s)</b>	5
<b>Alarm Conditions 1</b>	<b>Record</b>	Logical Disk Overview (PI_LOGD)
	<b>Field</b>	ID
	<b>Abnormal condition</b>	ID <> _Total#
	<b>Warning condition</b>	ID <> _Total#
<b>Alarm Conditions 2</b>	<b>Record</b>	Logical Disk Overview (PI_LOGD)
	<b>Field</b>	% Disk Time
	<b>Abnormal condition</b>	% Disk Time >= 90
	<b>Warning condition</b>	% Disk Time >= 50
<b>Actions</b>	<b>Email</b>	--
	<b>Command</b>	--
	<b>SNMP</b>	<b>Abnormal, Warning, Normal</b>

Legend:

--: Setting is always invalid.

#

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/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.

### 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	
<b>Main Information</b>	<b>Product</b>	Windows
	<b>Alarm message</b>	Disk Queue (%CVS1) = %CVS2 MB
	<b>Enable alarm</b>	Selected
	<b>Alarm notification</b>	<b>Notify when the state changed</b>
	<b>Notification target</b>	<b>State changes for the alarm</b>
	<b>Evaluate all data</b>	Do not specify.
	<b>Monitoring time range</b>	<b>Always monitor</b>
	<b>Report alarm when the following damping condition is reached.</b>	Selected
	<b>occurrence(s) during</b>	4
	<b>interval(s)</b>	5
<b>Alarm Conditions 1</b>	<b>Record</b>	Logical Disk Overview (PI_LOGD)
	<b>Field</b>	ID
	<b>Abnormal condition</b>	ID <> _Total#
	<b>Warning condition</b>	ID <> _Total#
<b>Alarm Conditions 2</b>	<b>Record</b>	Logical Disk Overview (PI_LOGD)
	<b>Field</b>	Current Disk Queue Length
	<b>Abnormal condition</b>	Current Disk Queue Length >= 5
	<b>Warning condition</b>	Current Disk Queue Length >= 3
<b>Actions</b>	<b>Email</b>	--
	<b>Command</b>	--
	<b>SNMP</b>	<b>Abnormal, Warning, Normal</b>

**Legend:**

--: Setting is always invalid.

#

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.

### 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	
<b>Main Information</b>	<b>Product</b>	Windows
	<b>Alarm message</b>	Disk Queue (%CVS1) = %CVS2 MB
	<b>Enable alarm</b>	Selected
	<b>Alarm notification</b>	<b>Notify when the state changed</b>
	<b>Notification target</b>	<b>State changes for the alarm</b>
	<b>Evaluate all data</b>	Do not specify.
	<b>Monitoring time range</b>	<b>Always monitor</b>
	<b>Report alarm when the following damping condition is reached.</b>	Selected
	<b>occurrence(s) during</b>	4
	<b>interval(s)</b>	5
<b>Alarm Conditions 1</b>	<b>Record</b>	Physical Disk Overview (PI_PHYD)
	<b>Field</b>	ID
	<b>Abnormal condition</b>	ID <> _Total#
	<b>Warning condition</b>	ID <> _Total#
<b>Alarm Conditions 2</b>	<b>Record</b>	Physical Disk Overview (PI_PHYD)
	<b>Field</b>	Current Disk Queue Length
	<b>Abnormal condition</b>	Current Disk Queue Length >= 5
	<b>Warning condition</b>	Current Disk Queue Length >= 3
<b>Actions</b>	<b>Email</b>	--
	<b>Command</b>	--
	<b>SNMP</b>	<b>Abnormal, Warning, Normal</b>

**Legend:**

--: Setting is always invalid.

#

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	
<b>Main Information</b>	<b>Product</b>	Windows
	<b>Alarm message</b>	Received = %CVS1 byte/sec
	<b>Enable alarm</b>	Selected
	<b>Alarm notification</b>	<b>Notify when the state changed</b>
	<b>Notification target</b>	<b>State changes for the alarm</b>
	<b>Evaluate all data</b>	Do not specify.
	<b>Monitoring time range</b>	<b>Always monitor</b>
	<b>Report alarm when the following damping condition is reached.</b>	Selected
	<b>occurrence(s) during</b>	3
	<b>interval(s)</b>	5
<b>Alarm Conditions</b>	<b>Record</b>	Network Interface Overview (PI_NETI)
	<b>Field</b>	Bytes Rcvd/sec
	<b>Abnormal condition</b>	Bytes Rcvd/sec >= 3000 <sup>#1</sup>
	<b>Warning condition</b>	Bytes Rcvd/sec >= 2048 <sup>#2</sup>
<b>Actions</b>	<b>Email</b>	--
	<b>Command</b>	--
	<b>SNMP</b>	<b>Abnormal, Warning, Normal</b>

Legend:

--: Setting is always invalid.

#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



## 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	
<b>Main Information</b>	<b>Product</b>	Windows
	<b>Alarm message</b>	Process status has changed
	<b>Enable alarm</b>	Selected
	<b>Alarm notification</b>	<b>Notify when the state changed</b>
	<b>Notification target</b>	<b>State changes for the alarm</b>
	<b>Evaluate all data</b>	Do not specify.
	<b>Monitoring time range</b>	<b>Always monitor</b>
	<b>Report alarm when the following damping condition is reached.</b>	Do not specify.
	<b>occurrence(s) during</b>	0
	<b>interval(s)</b>	0
<b>Alarm Conditions</b>	<b>Record</b>	Process Detail Interval (PD_PDI)
	<b>Field</b>	Program
	<b>Abnormal condition</b>	Program = jpcstop <sup>#</sup>
	<b>Warning condition</b>	Program = jpcsto <sup>#</sup>
<b>Actions</b>	<b>Email</b>	--
	<b>Command</b>	--
	<b>SNMP</b>	<b>Abnormal, Normal</b>

Legend:

--: Setting is always invalid.

#

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] 10.00

## 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 7–2: Settings in the collection data addition utility

Items in the collection data addition utility <sup>#1</sup>	Description <sup>#3</sup>
<b>Match all program name, user name, and group name conditions (AND)</b>	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 workgroup information, see [6.4 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	
<b>Main Information</b>	<b>Product</b>	Windows
	<b>Alarm message</b>	Workgroup Application Process Count = %CVS1
	<b>Enable alarm</b>	Selected
	<b>Alarm notification</b>	<b>Notify when the state changed</b>
	<b>Notification target</b>	<b>State changes for the alarm</b>
	<b>Evaluate all data</b>	Do not specify.
	<b>Monitoring time range</b>	<b>Always monitor</b>
	<b>Report alarm when the following damping condition is reached.</b>	Do not specify.

PFM - Web Console alarm property		Settings
Item	Detailed item	
<b>Main Information</b>	<b>occurrence(s) during</b>	0
	<b>interval(s)</b>	0
<b>Alarm Conditions 1</b>	<b>Record</b>	Workgroup Summary (PI_WGRP)
	<b>Field</b>	Process Count
	<b>Abnormal condition</b>	Process Count > 0
	<b>Warning condition</b>	Process Count > 0
<b>Alarm Conditions 2</b>	<b>Record</b>	Workgroup Summary (PI_WGRP)
	<b>Field</b>	Workgroup
	<b>Abnormal condition</b>	Workgroup = workgroup <sup>#</sup>
	<b>Warning condition</b>	Workgroup = workgroup <sup>#</sup>
<b>Actions</b>	<b>Email</b>	--
	<b>Command</b>	--
	<b>SNMP</b>	<b>Abnormal, Warning, Normal</b>

Legend:

--: Setting is always invalid.

#

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] 10.00

## 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	
<b>Main Information</b>	<b>Product</b>	Windows
	<b>Alarm message</b>	State of service (%CVS1) has changed
	<b>Enable alarm</b>	Selected
	<b>Alarm notification</b>	<b>Notify when the state changed</b>
	<b>Notification target</b>	<b>State changes for the alarm</b>
	<b>Evaluate all data</b>	Do not specify.
	<b>Monitoring time range</b>	<b>Always monitor</b>
	<b>Report alarm when the following damping condition is reached.</b>	Do not specify.
	<b>occurrence(s) during</b>	0
	<b>interval(s)</b>	0
<b>Alarm Conditions 1</b>	<b>Record</b>	Service Process Detail (PD_SVC)
	<b>Field</b>	Service Name
	<b>Abnormal condition</b>	Service Name = JP1PCAGT_TS#
	<b>Warning condition</b>	Service Name = JP1PCAGT_TS#
<b>Alarm Conditions 2</b>	<b>Record</b>	Service Process Detail (PD_SVC)
	<b>Field</b>	State
	<b>Abnormal condition</b>	State <> RUNNING
	<b>Warning condition</b>	State <> RUNNING
<b>Actions</b>	<b>Email</b>	--
	<b>Command</b>	--
	<b>SNMP</b>	<b>Abnormal, Warning, Normal</b>

Legend:

--: Setting is always invalid.

#

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] 10.00

## 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	
<b>Main Information</b>	<b>Product</b>	Windows
	<b>Alarm message</b>	State of service (%CVS1) has changed
	<b>Enable alarm</b>	Selected
	<b>Alarm notification</b>	<b>Notify when the state changed</b>
	<b>Notification target</b>	<b>State changes for the alarm</b>
	<b>Evaluate all data</b>	Do not specify.
	<b>Monitoring time range</b>	<b>Always monitor</b>
	<b>Report alarm when the following damping condition is reached.</b>	Do not specify.
	<b>occurrence(s) during</b>	0
	<b>interval(s)</b>	0
<b>Alarm Conditions 1</b>	<b>Record</b>	Service Process Detail (PD_SVC)
	<b>Field</b>	Display Name
	<b>Abnormal condition</b>	Display Name = PFM - Agent Store for Windows <sup>#</sup>
	<b>Warning condition</b>	Display Name = PFM - Agent Store for Windows <sup>#</sup>
<b>Alarm Conditions 2</b>	<b>Record</b>	Service Process Detail (PD_SVC)
	<b>Field</b>	State
	<b>Abnormal condition</b>	State <> RUNNING
	<b>Warning condition</b>	State <> RUNNING
<b>Actions</b>	<b>Email</b>	--
	<b>Command</b>	--
	<b>SNMP</b>	<b>Abnormal, Warning, Normal</b>

Legend:

--: Setting is always invalid.

#

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] 10.00

## 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 [6.3 Settings for collecting event log information](#).

### 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	
<b>Main Information</b>	<b>Product</b>	Windows
	<b>Alarm message</b>	%CVS1 %CVS2, %CVS3 (%CVS4), %CVS5
	<b>Enable alarm</b>	Selected
	<b>Alarm notification</b>	<b>Notify when the state changed</b>
	<b>Notification target</b>	<b>State changes for the alarm</b>
	<b>Evaluate all data</b>	Do not specify.
	<b>Monitoring time range</b>	<b>Always monitor</b>
	<b>Report alarm when the following damping condition is reached.</b>	Selected
	<b>occurrence(s) during</b>	1
	<b>interval(s)</b>	1
<b>Alarm Conditions 1</b>	<b>Record</b>	Event Log (PD_ELOG)
	<b>Field</b>	Log Name
	<b>Abnormal condition</b>	Log Name <> dummy#1
	<b>Warning condition</b>	Log Name <> dummy#1
<b>Alarm Conditions 2</b>	<b>Record</b>	Event Log (PD_ELOG)
	<b>Field</b>	Event Type Name
	<b>Abnormal condition</b>	Event Type Name = Error
	<b>Warning condition</b>	Event Type Name = Warning
<b>Alarm Conditions 3</b>	<b>Record</b>	Event Log (PD_ELOG)
	<b>Field</b>	Source Name

PFM - Web Console alarm property		Settings
Item	Detailed item	
<b>Alarm Conditions 3</b>	<b>Abnormal condition</b>	Source Name <> dummy <sup>#2</sup>
	<b>Warning condition</b>	Source Name <> dummy <sup>#2</sup>
<b>Alarm Conditions 4</b>	<b>Record</b>	Event Log (PD_ELOG)
	<b>Field</b>	Event ID
	<b>Abnormal condition</b>	Event ID <> 0
	<b>Warning condition</b>	Event ID <> 0
<b>Alarm Conditions 5</b>	<b>Record</b>	Event Log (PD_ELOG)
	<b>Field</b>	Description
	<b>Abnormal condition</b>	Description <> dummy <sup>#3</sup>
	<b>Warning condition</b>	Description <> dummy <sup>#3</sup>
<b>Actions</b>	<b>Email</b>	--
	<b>Command</b>	--
	<b>SNMP</b>	<b>Abnormal, Warning, Normal</b>

**Legend:**

--: Setting is always invalid.

#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

**Related reports**

None

# Process Existence

## Overview

The Process Existence alarm monitors for the disappearance of a process. If a process's existence cannot be confirmed, the process has stopped.

## Primary settings

PFM - Web Console alarm property		Settings
Item	Detailed item	
<b>Main Information</b>	<b>Product</b>	Windows
	<b>Alarm message</b>	Process status has changed
	<b>Enable alarm</b>	Selected
	<b>Alarm notification</b>	<b>Notify when the state changed</b>
	<b>Notification target</b>	<b>State changes for the alarm</b>
	<b>Evaluate all data</b>	Do not specify.
	<b>Monitoring time range</b>	<b>Always monitor</b>
	<b>Report alarm when the following damping condition is reached.</b>	Do not specify.
	<b>occurrence(s) during</b>	0
	<b>interval(s)</b>	0
<b>Alarm Conditions</b>	<b>Record</b>	Application Process Overview (PD_APS)
	<b>Field</b>	Program Name
	<b>Abnormal condition</b>	Program Name = jpcsto.exe#
	<b>Warning condition</b>	Program Name = jpcsto.exe#
<b>Actions</b>	<b>Email</b>	--
	<b>Command</b>	--
	<b>SNMP</b>	<b>Abnormal, Normal</b>

### Legend:

--: Setting is always invalid.

#

Set the name of the program to be monitored. Make sure that the character string you enter here matches what is entered in the Program Name field of the PD\_APS record.

Any character in the source information that is not in the ASCII character set range of 0x20 to 0x7E will be converted to a hash mark (#: 0x23) before it is stored in the Program Name field of the PD\_APS record. Note that multi-byte characters are processed in single-byte units during conversion. For example, the multi-byte (full-width) letter A is converted as follows:

Source information		Post-conversion information	
Character encoding	Binary	Binary	Character string
Shift-JIS	8260	2360	#`
EUC	A3C1	2323	##
UTF-8	EFBCA1	232323	###

## Alarm table

PFM Windows Template Alarms [PS] 10.00

## Related reports

None

# Event Log (System)

## Overview

The Event Log (System) alarm monitors WSFC 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 [6.3 Settings for collecting event log information](#).

### 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	
<b>Main Information</b>	<b>Product</b>	Windows
	<b>Alarm message</b>	%CVS1 %CVS2, %CVS3 (%CVS4) , %CVS5
	<b>Enable alarm</b>	Selected
	<b>Alarm notification</b>	<b>Notify when the state changed</b>
	<b>Notification target</b>	<b>State changes for the alarm</b>
	<b>Evaluate all data</b>	Do not specify.
	<b>Monitoring time range</b>	<b>Always monitor</b>
	<b>Report alarm when the following damping condition is reached.</b>	Selected
	<b>occurrence(s) during</b>	1
	<b>interval(s)</b>	1
<b>Alarm Conditions 1</b>	<b>Record</b>	Event Log (PD_ELOG)
	<b>Field</b>	Log Name
	<b>Abnormal condition</b>	Log Name = System
	<b>Warning condition</b>	Log Name = System
<b>Alarm Conditions 2</b>	<b>Record</b>	Event Log (PD_ELOG)
	<b>Field</b>	Event Type Name
	<b>Abnormal condition</b>	Event Type Name = Abnormal
	<b>Warning condition</b>	Event Type Name = Warning
<b>Alarm Conditions 3</b>	<b>Record</b>	Event Log (PD_ELOG)

PFM - Web Console alarm property		Settings
Item	Detailed item	
<b>Alarm Conditions 3</b>	<b>Field</b>	Source Name
	<b>Abnormal condition</b>	Source Name = ClusSvc
	<b>Warning condition</b>	Source Name = ClusSvc
<b>Alarm Conditions 4</b>	<b>Record</b>	Event Log (PD_ELOG)
	<b>Field</b>	Event ID
	<b>Abnormal condition</b>	Event ID <> 0
	<b>Warning condition</b>	Event ID <> 0
<b>Alarm Conditions 5</b>	<b>Record</b>	Event Log (PD_ELOG)
	<b>Field</b>	Description
	<b>Abnormal condition</b>	Description <> dummy <sup>#</sup>
	<b>Warning condition</b>	Description <> dummy <sup>#</sup>
<b>Actions</b>	<b>Email</b>	--
	<b>Command</b>	--
	<b>SNMP</b>	<b>Abnormal, Warning, Normal</b>

Legend:

--: Setting is always invalid.

#

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

# Application Status

## Overview

The Application Status alarm monitors the status of an application that is being monitored by the Application Summary Extension (PD\_APP2) record.

## Primary settings

PFM - Web Console alarm property		Settings
Item	Detailed item	
<b>Main Information</b>	<b>Product</b>	Windows
	<b>Alarm message</b>	Status of application (%CVS1) has changed
	<b>Enable alarm</b>	Selected
	<b>Alarm notification</b>	<b>Notify when the state changed</b>
	<b>Notification target</b>	<b>State changes for the alarm</b>
	<b>Evaluate all data</b>	Do not specify.
	<b>Monitoring time range</b>	<b>Always monitor</b>
	<b>Report alarm when the following damping condition is reached.</b>	Do not specify.
	<b>occurrence(s) during</b>	0
	<b>interval(s)</b>	0
<b>Alarm Conditions 1</b>	<b>Record</b>	Application Summary Extension (PD_APP2)
	<b>Field</b>	Application Name
	<b>Abnormal condition</b>	Application Name = *
	<b>Warning condition</b>	Application Name = *
<b>Alarm Conditions 2</b>	<b>Record</b>	Application Summary Extension (PD_APP2)
	<b>Field</b>	Application Exist
	<b>Abnormal condition</b>	Application Exist = ABNORMAL
	<b>Warning condition</b>	Application Exist = NORMAL
<b>Alarm Conditions 3</b>	<b>Record</b>	Application Summary Extension (PD_APP2)
	<b>Field</b>	Application Status
	<b>Abnormal condition</b>	Application Status = ABNORMAL
	<b>Warning condition</b>	Application Status = ABNORMAL
<b>Actions</b>	<b>Email</b>	--
	<b>Command</b>	--
	<b>SNMP</b>	<b>Abnormal, Warning, Normal</b>

Legend:

--: Setting is always invalid.

## **Alarm table**

PFM Windows Template Alarms [APP] 10.00

## **Related reports**

Reports/Windows/Operating System/Troubleshooting/Real-Time/Application Status (8.4)



# 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 [8. 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 [8. 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 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 *JPI/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
        |   +-- Application Status
        |   +-- Application Status (8.4)
        |   +-- <Drilldown Only>
        |   |   +-- Logical Drive Detail
        |   |   +-- Network Segment Detail#
        |   |   +-- Process Detail
        |   |   +-- Server Activity Detail
        |   |   +-- Application Process Status
        |   |   +-- Application Process Status (8.4)
      +-- <Recent Past>
        +-- CPU Usage Summary
        +-- File System I/O Summary
        +-- Memory Paging
        +-- Server Activity Summary
        +-- System Memory Detail
        +-- System Overview
        +-- <Drilldown Only>
          +-- Application Process Count
          +-- Application Process Count (8.4)
```

#

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 7–3: List of reports

Category	Report name	Information displayed
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)
	<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>Application Status</i>	Operating status of the applications
	<i>Application Status (8.4)</i>	

Category	Report name	Information displayed
Process	<i>Application Process Count</i>	Operating status of each process and service of an application over the last hour (on a minute-by-minute basis)
	<i>Application Process Count (8.4)</i>	
	<i>Application Process Status</i>	Operating status of each process and service of an application
	<i>Application Process Status (8.4)</i>	
	<i>CPU Usage - Top 10 Processes</i>	Top 10 processes with the highest CPU usage
	<i>Monitoring Process Detail</i>	Performance information for a particular process over the last hour (on a minute-by-minute basis)
	<i>Monitoring Process Detail (8.4)</i>	
	<i>Page Faults - Top 10 Processes</i>	Top 10 processes with the highest page fault frequency
	<i>Process Detail</i>	Details of a specific process's usage of system resources
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)
	<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)

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### 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)

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## 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>



# Application Status

## Overview

The Application Status report shows the operating status of the application on a real-time basis. It is displayed as a table.

*Note:*

Use this report when the version of the PFM - Agent for Platform is earlier than 11-50. For PFM - Agent for Platform versions 11-50 and later, use the Application Status (8.4) report.

## Storage destination

Reports/Windows/Operating System/Troubleshooting/Real-Time/

## Record

Application Summary Extension (PD\_APP2)

## Fields

Field name	Explanation
Application Exist	<p>The application status specified in the process monitoring settings. <b>NORMAL</b> or <b>ABNORMAL</b> is displayed.</p> <p>The application status is the result obtained based on the status specified in the monitoring targets.</p> <p>To check the status of the monitoring targets, refer to <i>Monitoring Status</i>, which is displayed in the Application Process Detail (PD_APPD) record.</p> <p><b>NORMAL:</b> The status of least one of the monitoring targets is normal.</p> <p><b>ABNORMAL:</b> The status of all of the monitoring targets is abnormal.</p>
Application Name	<p>The name specified in the process monitoring settings.</p>
Application Status	<p>The application status specified in the process monitoring settings. <b>NORMAL</b> or <b>ABNORMAL</b> is displayed.</p> <p>The application status is the result obtained based on the status specified in the monitoring targets.</p> <p>To check the status of the monitoring targets, refer to <i>Monitoring Status</i>, which is displayed in the Application Process Detail (PD_APPD) record.</p> <p><b>NORMAL:</b> The status of all of the monitoring targets is normal.</p> <p><b>ABNORMAL:</b> The status of least one of the monitoring targets is abnormal.</p>

## Drilldown report (field level)

Report name	Explanation
Application Process Status	<p>Shows the operating status of each process and service of the application on a real-time basis. To display this report, click the <b>Application Name</b> field.</p>

## Application Status (8.4)

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### Overview

The Application Status (8.4) report shows the operating status of the application on a real-time basis. It is displayed as a table.

### Storage destination

Reports/Windows/Operating System/Troubleshooting/Real-Time/

### Record

Application Summary Extension (PD\_APP2)

### Fields

Field name	Explanation
Application Exist	<p>The application status specified in the process monitoring settings. <b>NORMAL</b> or <b>ABNORMAL</b> is displayed.</p> <p>The application status is the result obtained based on the status specified in the monitoring targets.</p> <p>To check the status of the monitoring targets, refer to <i>Monitoring Status</i>, which is displayed in the Application Process Detail (PD_APPD) record.</p> <p><b>NORMAL</b>: The status of least one of the monitoring targets is normal.</p> <p><b>ABNORMAL</b>: The status of all of the monitoring targets is abnormal.</p>
Application Name	<p>The name specified in the process monitoring settings.</p>
Application Status	<p>The application status specified in the process monitoring settings. <b>NORMAL</b> or <b>ABNORMAL</b> is displayed.</p> <p>The application status is the result obtained based on the status specified in the monitoring targets.</p> <p>To check the status of the monitoring targets, refer to <i>Monitoring Status</i>, which is displayed in the Application Process Detail (PD_APPD) record.</p> <p><b>NORMAL</b>: The status of all of the monitoring targets is normal.</p> <p><b>ABNORMAL</b>: The status of least one of the monitoring targets is abnormal.</p>

### Drilldown report (field level)

Report name	Explanation
Application Process Status (8.4)	<p>Shows the operating status of each process and service of the application on a real-time basis. To display this report, click the <b>Application Name</b> field.</p>

# Application Process Count

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## Overview

The Application Process Count report shows the operating status of each process and service of an application over the last hour (on a minute-by-minute basis). It is displayed as a table and a line graph. This is a drilldown report.

### Note:

Use this report when the version of the PFM - Agent for Platform is earlier than 11-50. For PFM - Agent for Platform versions 11-50 and later, use the Application Process Count (8.4) report.

## Storage destination

Reports/Windows/Operating System/Troubleshooting/Recent Past/Drilldown Only/

## Record

Application Process Detail (PD\_APPD)

## Fields

Field name	Explanation
Application Name	The name specified in the process monitoring settings
Monitoring Condition	Condition expression for identifying the processes or services being monitored
Monitoring Count	Number of running processes or services that match the monitoring condition
Monitoring Field	The field being monitored
Monitoring Label	The name used to identify the monitoring condition
Monitoring Max	Upper limit on the monitoring count
Monitoring Min	Lower limit on the monitoring count
Monitoring Number	Monitoring condition number
Monitoring Status	Result of the monitoring count condition

## Drilldown report (field level)

Report name	Explanation
Monitoring Process Detail	Shows performance information about a specific process. To display this report, click the <b>Monitoring Label</b> field.

## Application Process Count (8.4)

---

### Overview

The Application Process Count (8.4) report shows the operating status of each process and service of an application over the last hour (on a minute-by-minute basis). It is displayed as a table and a line graph. This is a drilldown report.

### Storage destination

Reports/Windows/Operating System/Troubleshooting/Recent Past/Drilldown Only/

### Record

Application Process Detail (PD\_APPD)

### Fields

Field name	Explanation
Application Name	The name specified in the process monitoring settings
Monitoring Condition	Condition expression for identifying the processes or services being monitored
Monitoring Count	Number of running processes or services that match the monitoring condition
Monitoring Field	The field being monitored
Monitoring Label	The name used to identify the monitoring condition
Monitoring Max	Upper limit on the monitoring count
Monitoring Min	Lower limit on the monitoring count
Monitoring Number	Monitoring condition number
Monitoring Status	Result of the monitoring count condition

### Drilldown report (field level)

Report name	Explanation
Monitoring Process Detail (8.4)	Shows performance information about a specific process. To display this report, click the <b>Monitoring Label</b> field.

# Application Process Status

---

## Overview

The Application Process Status report shows the operating status of each process and service of an application on a real-time basis. It is displayed as a table. This is a drilldown report.

### Note:

Use this report when the version of the PFM - Agent for Platform is earlier than 11-50. For PFM - Agent for Platform versions 11-50 and later, use the Application Process Status (8.4) report.

## Storage destination

Reports/Windows/Operating System/Troubleshooting/Real-Time/Drilldown Only/

## Record

Application Process Detail (PD\_APPD)

## Fields

Field name	Explanation
Application Name	The name specified in the process monitoring settings
Monitoring Condition	Condition expression for identifying the processes or services being monitored
Monitoring Count	Number of running processes or services that match the monitoring condition
Monitoring Field	The field being monitored
Monitoring Label	The name used to identify the monitoring condition
Monitoring Min	Lower limit on the monitoring count
Monitoring Max	Upper limit on the monitoring count
Monitoring Number	Monitoring condition number
Monitoring Status	Result of the monitoring count condition

## Drilldown report (field level)

Report name	Explanation
Application Process Count	Shows the operating status of each process and service of the application. To display this report, click the <b>Monitoring Count</b> field.

## Application Process Status (8.4)

---

### Overview

The Application Process Status (8.4) report shows the operating status of each process and service of an application on a real-time basis. It is displayed as a table. This is a drilldown report.

### Storage destination

Reports/Windows/Operating System/Troubleshooting/Real-Time/Drilldown Only/

### Record

Application Process Detail (PD\_APPD)

### Fields

Field name	Explanation
Application Name	The name specified in the process monitoring settings
Monitoring Condition	Condition expression for identifying the processes or services being monitored
Monitoring Count	Number of running processes or services that match the monitoring condition
Monitoring Field	The field being monitored
Monitoring Label	The name used to identify the monitoring condition
Monitoring Min	Lower limit on the monitoring count
Monitoring Max	Upper limit on the monitoring count
Monitoring Number	Monitoring condition number
Monitoring Status	Result of the monitoring count condition

### Drilldown report (field level)

Report name	Explanation
Application Process Count (8.4)	Shows the operating status of each process and service of the application. To display this report, click the <b>Monitoring Count</b> field.

# 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).
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

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## 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> × 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).
Total Interrupts/sec	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). 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.
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. This field is a configuration element of the CPU % field.

# 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

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## 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).
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)

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## 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).

# Monitoring Process Detail

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## Overview

The Monitoring Process Detail report shows performance information about a specific process over the last hour (on a minute-by-minute basis). It is displayed as a line graph. This is a drilldown report.

### Note:

Use this report when the version of the PFM - Agent for Platform is earlier than 11-50. For PFM - Agent for Platform versions 11-50 and later, use the Monitoring Process Detail (8.4) report.

## Storage destination

Reports/Windows/Operating System/Troubleshooting/Recent Past/Drilldown Only/

## Record

Application Process Interval (PD\_APSI)

## Fields

Field name	Explanation
Application Name	The name specified in the process monitoring settings
CPU %	Percentage of the processor time used by the process (%). In a multi-processor environment, usage is displayed with <i>number of processors</i> × 100% as the maximum value.
Handle Count	Number of handles being kept open by the process
Monitoring Field	The field being monitored
Monitoring Label	The name used to identify the monitoring condition
Monitoring Number	Monitoring condition number
Page Faults/sec	Number of page faults that occurred in the process (faults/second)
Page File Kbytes	Size of the virtual memory area being used as paging files by the process (KB)
PID	Process ID. Unique ID of the process being executed
Pool Paged Kbytes	Size of pageable memory being used by the process (KB)
Pool Nonpaged Kbytes	Size of non-pageable memory being used by the process (KB)
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: Higher than normal</li><li>• 8: Normal</li><li>• 6: Lower than normal</li><li>• 4: Low</li></ul>
Private Kbytes	Size of the memory that was allocated to the process and that cannot be shared with other processes (KB)

Field name	Explanation
Privileged CPU %	Percentage of the processor time used by the process in the privileged mode (%). In a multi-processor environment, usage is displayed with <i>number of processors</i> × 100% as the maximum value.
Program Name	The name of the program
Thread Count	Number of threads (unit for executing an instruction) in the process. When a process is executed, at least one thread is started.
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 the process in the user mode (%). In a multi-processor environment, usage is displayed with <i>number of processors</i> × 100% as the maximum value.
Virtual Kbytes	Size of the virtual address space being used by the process (KB)
Working Set Kbytes	Size of the memory being used by the process (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).

## Monitoring Process Detail (8.4)

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### Overview

The Monitoring Process Detail (8.4) report shows performance information about a specific process over the last hour (on a minute-by-minute basis). It is displayed as a line graph. This is a drilldown report.

### Storage destination

Reports/Windows/Operating System/Troubleshooting/Recent Past/Drilldown Only/

### Record

Application Process Interval (PD\_APSI)

### Fields

Field name	Explanation
Application Name	The name specified in the process monitoring settings
CPU %	Percentage of the processor time used by the process (%). In a multi-processor environment, usage is displayed with <i>number of processors</i> × 100% as the maximum value.
Handle Count	Number of handles being kept open by the process
Monitoring Field	The field being monitored
Monitoring Label	The name used to identify the monitoring condition
Monitoring Number	Monitoring condition number
Page Faults/sec	Number of page faults that occurred in the process (faults/second)
Page File Kbytes	Size of the virtual memory area being used as paging files by the process (KB)
PID	Process ID. Unique ID of the process being executed
Pool Paged Kbytes	Size of pageable memory being used by the process (KB)
Pool Nonpaged Kbytes	Size of non-pageable memory being used by the process (KB)
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: Higher than normal</li><li>• 8: Normal</li><li>• 6: Lower than normal</li><li>• 4: Low</li></ul>
Private Kbytes	Size of the memory that was allocated to the process and that cannot be shared with other processes (KB)
Privileged CPU %	Percentage of the processor time used by the process in the privileged mode (%). In a multi-processor environment, usage is displayed with <i>number of processors</i> × 100% as the maximum value.
Program Name	The name of the program

Field name	Explanation
Thread Count	Number of threads (unit for executing an instruction) in the process. When a process is executed, at least one thread is started.
User	Executing user name for the process. If a user name that corresponds to the process security ID is not found, <code>NONE_MAPPED</code> is stored for this field. If the executing user name cannot be acquired from the process ID, <code>Unknown</code> is stored for this field.
User CPU %	Amount of processor time used by the process in the user mode (%). In a multi-processor environment, usage is displayed with <i>number of processors</i> × 100% as the maximum value.
Virtual Kbytes	Size of the virtual address space being used by the process (KB)
Working Set Kbytes	Size of the memory being used by the process (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).



## OS Memory Usage Status (real-time report on memory usage)

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### 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)

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## 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

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## 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> × 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: Higher than normal</li><li>• 8: Normal</li><li>• 6: Lower than normal</li><li>• 4: Low</li></ul>
Private Kbytes	Size of memory that is allocated to processes for their exclusive use (KB). <sup>#1</sup>
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> × 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.

Field name	Explanation
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> × 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

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## 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).
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)

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## 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)

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## 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)

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## 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)

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## 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)

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### 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.#1

# 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 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 Ntoskrnl.exe, Hal.dll, boot driver, and Ntldr/osloader) (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.
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.



Report name	Explanation
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.

# 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>

# 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).

# 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).

# 8

## Records

This chapter explains PFM - Agent for Platform records. For details about how to collect performance data for each record, see the chapter that explains the functions of Performance Management in the *JP1/Performance Management Planning and Configuration Guide*, or the chapter that explains the management of operation monitoring data in the *JP1/Performance Management User's Guide*.

## Data model

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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 *JPI/Performance Management Planning and Configuration Guide*.

## Format of record explanations

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 *JPI/Performance Management User's Guide*.

Table 8–1: Default values and changeable values

Item	Meaning	Modifiable
Collection Interval	Performance data collection interval (seconds).	Yes: Can be modified No: Cannot 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 <i>JPI/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 <i>JPI/Performance Management Planning and Configuration Guide</i> .	
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.	
Over 10 Sec Collection Time <sup>#2</sup>	Indicates whether collecting records takes 10 seconds or more, depending on the system configuration.  Yes: It sometimes takes 10 seconds or more.  No: It takes less than 10 seconds.	
Sync Collection With <sup>#3</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 <i>JPI/Performance Management User's Guide</i> .	
Realtime Report Data Collection Mode <sup>#2</sup>	Specifies the real-time report display mode. <code>Reschedule</code> : Reschedule mode <code>Temporary Log</code> : Temporary log mode  Note that you must specify the temporary log mode ( <code>Temporary Log</code> ) for records for which <code>Over 10 Sec Collection Time</code> is set to <code>Yes</code> .	

#1

A value between 0 and 32,767 seconds can be specified (a 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 concentration

of the processing workload. 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

This item is displayed when the history collection priority function is enabled.

#3

If Sync Collection With is displayed, neither Collection Interval nor Collection Offset is displayed.

## ODBC key fields

Indicates the primary key required for PFM - Manager or PFM - Base to use 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*.

## 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 *JPI/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*.
- **Format**  
Indicates the data type of the values in each field, such as `char` and `float` types. For details about data types, see *List of data types*.
- **Delta**  
Data that is expressed as a changed amount relative to data collected as an accumulated value is called a *delta*. For details about delta, see *Field values*.
- **Not supported on**  
Indicates a version of Windows on which the field is not supported:
  - 2012: The field is not supported on Windows Server 2012.
  - 2016: The field is not supported on Windows Server 2016.
  - 2019: The field is not supported on Windows Server 2019.
  - --: The field is available to all platforms supported by PFM - Agent for Platform.
- **Data source**  
Indicates the calculation method or collection source for the values in the applicable field. For details about field values, see *Field values*.

## List of ODBC key fields

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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. For PFM - Manager to use the record data stored in the Store database, ODBC key fields are required.

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 8–2: 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> _PRODID	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 8–3: List of suffixes for added fields**

PFM - Manager name	PFM - View name	Stored data
<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
<code>_LO</code>	(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 8–4: List of summarization rules**

Summarization rule name	Summarization rule
<code>COPY</code>	Stores the field value of the latest record within the summarization period without any modification.
<code>AVG</code>	Stores the average field value within the summarization period. The computation formula follows: $(total-field-value) / (number-of-collected-records)$ Added fields (Store database)

Summarization rule name	Summarization rule
AVG	<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> Added field (PFM - Web Console) <sup>#1, #2</sup> <ul style="list-style-type: none"> <li>• <code>(Total)</code></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.
HILO	Stores the maximum, minimum, and average of the data within the summarization period. An average value is stored in the fixed field. The computation formula follows: <i>(total-field-value) / (number-of-collected-records)</i> Added fields (Store database) <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> Added fields (PFM - Web Console) <sup>#1, #2</sup> <ul style="list-style-type: none"> <li>• <code>(Max)</code></li> <li>• <code>(Min)</code></li> <li>• <code>(Total)</code></li> </ul>
%	Stores the average field value within the summarization period. Applied primarily to percentage fields. The computation formula follows: <i>(total-field-value) / (number-of-collected-records)</i> Added fields (Store database) <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

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 8–5: List of data types

Data type		Size (bytes)	Explanation
Field	C and C++		
<code>char (n)</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 (n)</code>	<code>char []</code>	Number inside ( )	Character string having <i>n</i> -byte length. The last character is null.
<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 8–6: Performance data collected by PFM - Agent for Platform

Record type	Delta	Data type	Indicate delta value selected <sup>#</sup>	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.

Record type	Delta	Data type	Indicate delta value selected <sup>#</sup>	Record value
PD record type	No	<ul style="list-style-type: none"> <li>Historical data</li> <li>Alarm monitoring data</li> </ul>	--	Shows the real-time value.

**Legend:**

--: Not applicable

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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 8–7: 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).

Record type	Instance type	Report type	Explanation	
			Interval (INTERVAL)	Interval2 (INTERVAL2)
PI record type	Multi-instance record	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.	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.	--
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

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The refresh interval is computed using the following formula:

$$interval-field-value = record-time-field-value - record-time-field-value-collected-during-previous-interval$$



## Fields that are added only when a record is recorded in the Store database

The table below shows the fields that are added only when a record is recorded in the Store database.

Table 8–8: Fields that are added only when a record is recorded in the Store database

PFM - View name (PFM - Manager name)	Explanation	Format	Delta	Supported version	Data source
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 (PRODID)	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, #2</sup>	char (3)	No	All	--
Date and Time (DATETIME)	Combination of the Date (DATE) field and the Time (TIME) field <sup>#2</sup>	char (6)	No	All	--
Drawer Type (DRAWER_TYPE)	For records of the PI record type, the data summarization category is indicated.	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, #2</sup>	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 8–9: 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

When data is displayed in a report, 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

When data stored in the Store database is exported by using the `jpctool db 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

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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 8–10: 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_PAGEF)	Instance (INSTANCE)
Physical Disk Overview (PI_PHYD)	ID (INSTANCE)
Process End Detail (PD_PEND)	Program (PROCESS_NAME)
Generic Data Detail64 (PD_GD64)	Instance (INSTANCE)
Generic Data Interval64 (PI_GI64)	Instance (INSTANCE)

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.

2. For the PD\_UPD, PD\_UPDB, PI\_UPI, PI\_UPIB, and PI\_XUI1 to PI\_XUI5 records, the first instance of each record is used.

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.

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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 8–11: 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		
	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	Tcpip	perfctrs.dll
	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, for example)	System Overview (PI)	Cache	PerfOS	PerfOS.dll
		Memory		
		Objects		
		System		
		Processor and Processor Information		

Category	Record name (Record ID)	Object name	Source (service) output to event log	Performance extension DLL
OS in general (processor, memory, for example)	Processor Overview (PI_PCSR)	Processor	PerfOS	PerfOS.dll
	Page File Detail (PD_PAGE)	Paging File		
Process-related	Process Detail (PD)	Process	PerfProc	PerfProc.dll
	Process Detail Interval (PD_PDI)			
	Application Process Interval (PD_APSI)			
	Application Process Overview (PD_APS)			
	Application Summary (PD_APP)			
	Application Summary Extension (PD_APP2)			
	Application Process Detail (PD_APPD)			
	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)			
	User Data Detail (PD_UPD)			
	User Data Detail - Extended (PD_UPDB)			
	User Data Interval (PI_UPI)			
	User Data Interval - Extended (PI_UPIB)			
	Service Process Detail (PD_SVC)			
	Application Service Overview (PD_ASVC)			

Category	Record name (Record ID)	Object name	Source (service) output to event log	Performance extension DLL
Other	User Data Interval - Expanded 1 (PI_XUI1)	Not applicable	(Not applicable)	
	User Data Interval - Expanded 2 (PI_XUI2)			
	User Data Interval - Expanded 3 (PI_XUI3)			
	User Data Interval - Expanded 4 (PI_XUI4)			
	User Data Interval - Expanded 5 (PI_XUI5)			

### 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 8–12: Examples of application event logs when records cannot be collected normally

Event ID	Source (service) name	Event log details
1008	<code>Perflib#</code>	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	<code>Perflib#</code>	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	<code>Perflib#</code>	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	<code>Perflib#</code>	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	<code>Perflib#</code>	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	<code>Perflib#</code>	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	<code>PerfDisk</code>	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

- Performance information for the following records cannot be collected in an Internet Protocol version 6 (IPv6) environment:
  - 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.
- When a value is not specified in the User Time 1 field of PD\_UPD, PD\_UPDB, PI\_UPI, PI\_UPIB, PI\_XUI1, PI\_XUI2, PI\_XUI3, PI\_XUI4, and PI\_XUI5 record, it is displayed as "1970 01 01 09:00:00." in PFM - Web Console.
- Although PFM - Web Console displays values after the decimal point for the User Long  $N^{\#}$  field and User Long Roll  $N^{\#}$  fields of PD\_UPD, PD\_UPDB, PI\_UPI, and PI\_UPIB records, only integer values can be specified.  
#  
 $N$  is a user-chosen numerical value.
- The maximum number of CPU information items that can be collected differs depending on whether "Yes" or "No" is specified for the Use Processor Information Object property (displayed by selecting Agent Configuration in PFM - Agent for Platform).
  - "Yes": 160
  - "No": 64

## 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 *JPI/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

Under **Record** in the New Report > Field window of the PFM - Web Console report wizard, reserved records are displayed, and you can create a report of these records. You cannot, however, display a report of reserved records.

In addition, if PFM - Agent for Platform 07-00 or earlier is upgraded to 08-00 or later, records reserved in 08-00 or later appear 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)
```

### Note

When you perform a new installation of PFM - Agent for Platform 08-00 or later, the properties of 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.

## Other notes

- Language environments other than Japanese, English, and Chinese support only the ASCII character set. In such environments, non-ASCII characters in performance data are not displayed correctly.
- Interface information specified by using the NIC teaming function in Windows cannot be collected.
- If a Windows Management Instrumentation service temporarily stops while PFM - Agent for Platform is running, even after the Windows Management Instrumentation service restarts, alarm or history collection is not performed correctly for records or fields that use that service. If this happens, restart PFM - Agent for Platform.

## 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 8–13: PFM - Agent for Platform record list (by category)

Category	Record name	Record ID	Information stored
Active Directory	<a href="#">Active Directory Overview</a>	PI_AD	Performance data per unit time on Active Directory, which is a directory service
Service function	<a href="#">WINS Server Overview</a>	PI_WINS	Performance data per unit time on the communication of the WINS server service.
System Memory Processor Network	<a href="#">System Overview</a>	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 and Processor Information objects</li> <li>• Redirector objects</li> <li>• Server objects</li> <li>• System objects</li> </ul>
Disk	<a href="#">Logical Disk Overview</a>	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
	<a href="#">Physical Disk Overview</a>	PI_PHYD	Performance data per unit time on read, write, and transfer operations involving a hard disk drive or fixed disk drive
Network	<a href="#">Browser Overview</a>	PI_BRSR	Performance data per unit time on the Windows Browser service
	<a href="#">NBT Overview</a>	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
	<a href="#">Network Interface Overview</a>	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	<a href="#">Server Work Queues Overview</a>	PI_SVRQ	Performance data per unit time on the queue size of the server and the processing in the queue
Process	<a href="#">Process Detail</a>	PD	Performance data at a given point in time showing the state of a single process, such as paging, memory, or time usage
	<a href="#">Process Detail Interval</a>	PD_PDI	Performance data at a given point in time showing the state of a single process, such as paging, memory, or time usage
	<a href="#">Process End Detail</a>	PD_PEND	Performance data showing the state existing after process termination
	<a href="#">Workgroup Summary</a>	PI_WGRP	Performance data that summarizes, by workgroup, records stored in the Process Detail (PD) record at a given point in time

Category	Record name	Record ID	Information stored
Process	Application Process Interval	PD_APSI	Performance data that shows the state at a given point in time of a process that has been set for process monitoring
	Application Process Overview	PD_APS	Performance data that shows the state of a process 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)
	Application Service Overview	PD_ASVC	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
	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

Category	Record name	Record ID	Information stored
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>
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	
	User Data Interval - Expanded 1	PI_XUI1	
	User Data Interval - Expanded 2	PI_XUI2	
	User Data Interval - Expanded 3	PI_XUI3	
	User Data Interval - Expanded 4	PI_XUI4	
	User Data Interval - Expanded 5	PI_XUI5	
	Application Summary Extension	PD_APP2	Performance data that summarizes by application the records stored in the Application Process Overview (PD_APS) and Application Service Overview (PD_ASVC) records at a given point in time
	Application Process Detail	PD_APPD	Performance data that summarizes by process and service being monitored on a per-application basis the records stored in the Application Process Overview (PD_APS) and Application Service Overview (PD_ASVC) records at a given point in time
	Generic Data Detail64	PD_GD64	User-defined, 64-bit performance data that shows the state at a given point in time
Generic Data Interval64	PI_GI64	User-defined, 64-bit performance data per unit of time	
Reserved record	Active Server Pages	PI_ASP2	Reserved records, which cannot be used
	Active Server Pages Overview	PI_ASP	
	AppleTalk Overview	PI_APLE	
	Broker Service - MSNLogon	PI_BRKS	
	Chat Service Overview	PI_CHAT	
	Content Index Detail	PD_CIND	

Category	Record name	Record ID	Information stored
Reserved record	Content Index Filter Detail	PD_CINF	Reserved records, which cannot be used
	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	
	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_EMCS	
	Exchange MTA Connections	PI_EMTC	
	Exchange MTA Performance	PI_EMTP	
	Exchange Web Component Overview	PI_EWEB	
	FTP Server Overview	PI_FTSP	
	FTP Server Service Overview	PI_FTSPM	
	Gateway Service for NetWare	PI_GTWY	
	Gopher Service Overview	PI_GOPH	
	HTTP Content Index Overview	PI_HTCSI	
	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	
	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		

Category	Record name	Record ID	Information stored
Reserved record	NNTP Commands	PI_NWSC	Reserved records, which cannot be used
	NNTP Server	PI_NWSS	
	NNTP Server Client Overview	PI_NTPC	
	NNTP Server Service Overview	PI_NTSP	
	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	
	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		

# Active Directory Overview (PI\_AD)

## 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 [3.1.7 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](#).

## 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
Over 10 Sec Collection Time	No	No
Realtime Report Data Collection Mode	Reschedule	Yes

### #

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

## ODBC key fields

None

## Lifetime

From the time the Active Directory service is started until it terminates.

## Record size

- Fixed portion: 1,533 bytes
- Variable portion: 0 bytes

## Fields

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
AB Client Sessions (AB_CLIENT_SESSIONS)	The number of connected Address Book client sessions	HIL0	ulong	No	--	--

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
ATQ Threads LDAP (ATQ_THREADS_LDAP)	The number of threads the current ATQ has allocated for LDAP request processing	COPY	ulong	No	--	--
ATQ Threads Other (ATQ_THREADS_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	2016, 2019	--
Cache Page Fault Stalls/sec (CACHE_PAGE_FAULT_STALLS_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	2016, 2019	--
Cache Page Faults/sec (CACHE_PAGE_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	2016, 2019	--
Cache Size (CACHE_SIZE)	The amount of system memory used by the database cache manager to store frequently used information from the database files	COPY	ulong	No	2016, 2019	--
DRA In After Compress (DRA_IN_AFTER_COMPRESS)	The compressed size (in bytes) of inbound compressed replication data. Size after compression, from DSAs in other sites.	COPY	ulong	No	--	--
DRA In After Compress/sec (DRA_IN_AFTER_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_IN_BEFORE_COMPRESS)	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_BEFORE_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_IN_NOT_COMPRESS)	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_PER_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_TOTAL)	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	--	--



PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
DRA In Total/sec (DRA_IN_TOTAL_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_OBJECT_UPDATES_IN_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_OBJECTS_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_PROPERTY_APPLY_PER_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_PROPERTY_FILTER_PER_SEC)	The number of changes to object properties received (per second) during the replication that have already been made (properties/second)	AVG	double	No	--	--
DRA In Values/sec (DRA_IN_VALUES_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_OUT_AFTER_COMPRESS)	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_AFTER_COMPRESS_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_OUT_BEFORE_COMPRESS)	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_BEFORE_COMPRESS_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_OUT_NOT_COMPRESS)	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_NOT_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	--	--

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
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_TOTAL_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_OBJECTS_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_OBJECTS_PER_SEC)	The number of objects replicated out (objects/second)	AVG	double	No	--	--
DRA Out Property/sec (DRA_OUT_PROPERTY_PER_SEC)	The number of properties replicated out. (properties/second).	AVG	double	No	--	--
DRA Out Values/sec (DRA_OUT_VALUES_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_PENDING_REPLICATION_SYNC)	The number of directory synchronizations that are queued for this server but not yet processed	COPY	ulong	No	--	--
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	--	--

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
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	--	--
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)	Remaining number of objects to be checked while processing the current DS security descriptor propagation event	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 ( $T_1$ ) - RECORD_TIME ( $T_0$ )
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 ( $T_1$ ) - RECORD_TIME ( $T_0$ )
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	--	--
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	--	--

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
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	2016, 2019	--
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	2016, 2019	--
Log Writes/sec (LOG_WTITES_SEC)	The number of times per second that data in the log buffers was written to a log file	AVG	double	No	2016, 2019	--
NTLM Authentications (NTLM_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	2016, 2019	--
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	2016, 2019	--
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	2016, 2019	--
Table Opens/sec (TABLE_OPEN_SEC)	The number of database tables opened per second	AVG	double	No	2016, 2019	--
Zone Transfer Failure (ZONE_TRANSFER_FAILURE)	The total number of zone transfers that the master DNS server failed to perform	COPY	ulong	No	--	--
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	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

# Application Process Detail (PD\_APPD)

## Function

The Application Process Detail (PD\_APPD) record stores performance data that summarizes by process and service being monitored on a per-application basis the state at a given point in time of the records stored in the Application Process Overview (PD\_APS) and Application Service Overview (PD\_ASVC) records. One record is stored for each monitoring condition in the application. This record is a multi-instance record.

*Note:*

- To change the application definition, you must change the settings from PFM - Web Console.
- If the startup type of the Windows Management Instrumentation service (service name: Winmgmt) that provides system management information for the OS is set to Disabled, the Monitoring Count and Monitoring Status fields cannot be collected correctly. If the startup type of the Windows Management Instrumentation service is set to Disabled while PFM - Agent for Platform is running, change the startup type to a value other than Disabled, and then restart PFM - Agent for Platform.

## Default values and values that can be specified

Item	Default value	Modifiable
Log	No	Yes
LOGIF	Blank	Yes
Over 10 Sec Collection Time	No	No
Sync Collection With	Detail Records, APP2	No
Realtime Report Data Collection Mode	Reschedule	Yes

## ODBC key fields

- PD\_APPD\_APPLICATION\_NAME
- PD\_APPD\_MONITORING\_NUMBER

## Lifetime

From the time the application definition is added in PFM - Web Console until it is deleted.

## Record size

- Fixed portion: 681 bytes
- Variable portion: 263 bytes

## Fields

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Application Name (APPLICATION_NAME)	The name specified in the process monitoring settings	--	string (64)	No	--	--

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Interval (INTERVAL)	Number of seconds in the interval during which Application Process Detail (PD_APPD) records were stored. Always 0.	--	ulong	No	--	--
Monitoring Condition (MONITORING_CONDITION)	Condition expression for identifying the processes or services to be monitored	--	string (128)	No	--	--
Monitoring Count (MONITORING_COUNT)	Number of running processes or services that match the monitoring condition	--	ulong	No	--	--
Monitoring Field (MONITORING_FIELD)	Field to be monitored	--	string (16)	No	--	--
Monitoring Label (MONITORING_LABEL)	Name used to identify the monitoring condition	--	string (32)	No	--	--
Monitoring Max (MONITORING_MAX)	Upper limit on the monitoring count	--	ulong	No	--	--
Monitoring Min (MONITORING_MIN)	Lower limit on the monitoring count	--	ulong	No	--	--
Monitoring Number (MONITORING_NUMBER)	The monitoring condition number	--	word	No	--	--
Monitoring Status (STATUS)	Result of the monitoring count condition NORMAL: No error exists. ABNORMAL: An error exists.	--	string (9)	No	--	--
Record Time (RECORD_TIME)	Time at which the record was created	--	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record name. Always APPD.	--	char (8)	No	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

# Application Process Interval (PD\_APSI)

## Function

The Application Process Interval (PD\_APSI) record stores performance data that shows the state at a given point in time of a process that has been set for process monitoring. This record 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 Name (PROGRAM\_NAME) 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 preceding 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)
  - Privileged CPU % (PCT\_PRIVILEGED\_TIME)
  - User CPU % (PCT\_USER\_TIME)
  - Page Faults/sec (PAGE\_FAULTS\_PER\_SEC)
- If the value in the Program Name (PROGRAM\_NAME) field of this record is System or System Idle Process, the data for the Elapsed Time (ELAPSED\_TIME) field may not be collected correctly. In such a 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.
- Any character in the source information that is not in the ASCII character set range of 0x20 to 0x7E will be converted to a hash mark (#; 0x23) before it is stored in the Program Name (PROGRAM\_NAME) field. Note that multi-byte characters are processed in single-byte units during conversion. For example, the multi-byte (full-width) letter A is converted as follows:

Source information		Post-conversion information	
Character encoding	Binary	Binary	Character string
Shift-JIS	8260	2360	# `
EUC	A3C1	2323	##
UTF-8	EFBCA1	232323	###

- The value of the Program Name (PROGRAM\_NAME) field corresponds to the value shown in the **Image Name** column when you open the **Processes** tab in Windows Task Manager.
- If the startup type of the Windows Management Instrumentation service (service name: Winmgmt) that provides system management information for the OS is set to Disabled, this record cannot be collected correctly. If the startup type of the Windows Management Instrumentation service is set to Disabled while PFM - Agent for Platform is running, change the startup type to a value other than Disabled, and then restart PFM - Agent for Platform.



## Default values and values that can be specified

Item	Default value	Modifiable
Log	No	Yes
LOGIF	Blank	Yes
Over 10 Sec Collection Time	No	No
Sync Collection With	Detail Records, APP2	No
Realtime Report Data Collection Mode	Reschedule	Yes

## ODBC key fields

- PD\_APSI\_ID\_PROCESS
- PD\_APSI\_START\_TIME
- PD\_APSI\_APPLICATION\_NAME
- PD\_APSI\_MONITORING\_NUMBER

## Lifetime

From the time of execution of the process for which the application definition was set until the process terminates or the application definition is deleted.

## Record size

- Fixed portion: 681 bytes
- Variable portion: 712 bytes

## Fields

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Application Name (APPLICATION_NAME)	The name specified in the process monitoring settings	--	string (64)	No	--	--
CPU % (PCT_PROCESSOR_TIME)	Percentage of the elapsed processor time used by the process (%). In a multi-processor environment, usage is displayed with <i>number of processors</i> × 100% as the maximum value. However, the maximum value might be exceeded, depending on the collection timing.	--	double	No	--	--
Creating Process ID (PROCESS_ID)	Process ID of the process that activated this process <sup>#</sup>	--	ulong	No	--	--
Elapsed Time (ELAPSED_TIME)	Total elapsed time for process execution (seconds) <sup>#</sup>	--	utime	No	--	--
Group (GROUP_NAME)	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, <i>computer-name</i> , for	--	string (36)	No	--	--

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Group (GROUP_NAME)	example). 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 (36)	No	--	--
Handle Count (HANDLE_COUNT)	Number of handles kept open by the process <sup>#</sup>	--	ulong	No	--	--
IO Data Bytes/sec (IO_DATA_BYTES_PER_SEC)	Rate at which data was read or written in all I/O operations generated by the process (bytes/second)	--	double	No	--	--
IO Data Operations/sec (IO_DATA_OPERATIONS_PER_SEC)	Number of read and write operations in all I/O operations generated by the process (operations/second)	--	double	No	--	--
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, for example) in all I/O operations generated by the process (bytes/second)	--	double	No	--	--
IO Other Operations/sec (IO_OTHER_OPERATIONS_PER_SEC)	Number of operations other than read or write operations (control functions, for example) in all I/O operations generated by the process (operations/second)	--	double	No	--	--
IO Read Bytes/sec (IO_READ_BYTES_PER_SEC)	Rate at which data was read in all I/O operations generated by the process (bytes/second)	--	double	No	--	--
IO Read Operations/sec (IO_READ_OPERATIONS_PER_SEC)	Number of read operations in all I/O operations generated by the process (operations/second)	--	double	No	--	--
IO Write Bytes/sec (IO_WRITE_BYTES_PER_SEC)	Rate at which data was written in all I/O operations generated by the process (bytes/second)	--	double	No	--	--
IO Write Operations/sec (IO_WRITE_OPERATIONS_PER_SEC)	Number of write operations in all I/O operations generated by the process (operations/second)	--	double	No	--	--
Interval (INTERVAL)	Always 0	--	ulong	No	--	--
Monitoring Field (MONITORING_FIELD)	Field to be monitored	--	string (16)	No	--	--
Monitoring Label (MONITORING_LABEL)	Name used to identify the monitoring condition	--	string (32)	No	--	--
Monitoring Number (MONITORING_NUMBER)	The monitoring condition number	--	word	No	--	--
PID (ID_PROCESS)	Process ID. Unique identifier of the executing process	--	ulong	No	--	--
Page Faults/sec (PAGE_FAULTS_PER_SEC)	Rate at which page faults occurred in the process (faults/second)	--	double	No	--	--

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Page File Kbytes (PAGE_FILE_BYTES)	Size of the virtual memory area used by the process as paging files (KB)#	--	double	No	--	--
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: <ul style="list-style-type: none"> <li>• 24: Real-time</li> <li>• 13: High</li> <li>• 10: Higher than normal</li> <li>• 8: Normal</li> <li>• 6: Lower than normal</li> <li>• 4: Low</li> </ul>	--	ulong	No	--	--
Private Kbytes (PRIVATE_BYTES)	Size of the memory that was allocated to the process and that cannot be shared with other processes (KB)#	--	double	No	--	--
Privileged CPU % (PCT_PRIVILEGED_TIME)	Percentage of the elapsed time the process used the processor in the privileged mode (%). In a multi-processor environment, usage is displayed with <i>number of processors</i> × 100% as the maximum value. However, the maximum value might be exceeded, depending on the collection timing.	--	double	No	--	--
Program Name (INSTANCE)	Executing program name	--	string (257)	No	--	--
Record Time (RECORD_TIME)	Time at which the record was created	--	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record name. Always APSI.	--	char (8)	No	--	--
Start time (START_TIME)	Start time of the process	--	time_t	No	--	--
Thread Count (THREAD_COUNT)	Number of threads (unit for executing an instruction) in the 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 (36)	No	--	--

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
User CPU % (PCT_USER_TIME)	Amount of processor time used by the process in the user mode (%). In a multi-processor environment, usage is displayed with <i>number of processors</i> × 100% as the maximum value. However, the maximum value might be exceeded, depending on the collection timing.	--	double	No	--	--
Virtual Env ID (VIRTUAL_ENV_ID)	ID of the virtualized environment created by the virtualized system provided by the OS	--	string (65)	No	2012	--
Virtual Kbytes (VIRTUAL_BYTES)	Size of the virtual address space used by the process (KB) <sup>#</sup>	--	double	No	--	--
Virtual Kbytes Peak (VIRTUAL_BYTES_PEAK)	Maximum size of the virtual address space used by the process (KB) <sup>#</sup>	--	double	No	--	--
Working Set Kbytes (WORKING_SET)	Size of the memory used by the process (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) <sup>#</sup>	--	double	No	--	--
Working Set Kbytes Peak (WORKING_SET_PEAK)	Maximum size of the memory used by the process (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) <sup>#</sup>	--	double	No	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

# Application Process Overview (PD\_APS)

## Function

The Application Process Overview (PD\_APS) record stores performance data that shows the state of a process at a given point in time. One record is created per existing process ID in the system. This record is a multi-instance record.

### Notes:

- This record can be used for real-time reports only.
- Each process represents a program that is being executed during data collection.
- If a new record corresponding to the Program Name (PROGRAM\_NAME) 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 preceding 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)
  - Privileged CPU % (PCT\_PRIVILEGED\_TIME)
  - User CPU % (PCT\_USER\_TIME)
  - Page Faults/sec (PAGE\_FAULTS\_PER\_SEC)
- If the value in the Program Name (PROGRAM\_NAME) field of this record is System or System Idle Process, the data for the Elapsed Time (ELAPSED\_TIME) field may not be collected correctly. In such a 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.
- An error (KAVJS5001-I) results if you attempt to display a historical report of this record.
- Any character in the source information that is not in the ASCII character set range of 0x20 to 0x7E will be converted to a hash mark (#; 0x23) before it is stored in the Program Name (PROGRAM\_NAME) field or Command Line (COMMAND\_LINE) field. Note that multi-byte characters are processed in single-byte units during conversion. For example, the multi-byte (full-width) letter A is converted as follows:

Source information		Post-conversion information	
Character encoding	Binary	Binary	Character string
Shift-JIS	8260	2360	#`
EUC	A3C1	2323	##
UTF-8	EFBCA1	232323	###

- The value of the Program Name (PROGRAM\_NAME) field corresponds to the value shown in the **Image Name** column when you open the Processes tab in Windows Task Manager.
- If the startup type of the Windows Management Instrumentation service (service name: Winmgmt) that provides system management information for the OS is set to Disabled, this record cannot be collected correctly.

## Default values and values that can be specified

Item	Default value	Modifiable
Log	No	No
LOGIF	Blank	Yes
Over 10 Sec Collection Time	No	No
Sync Collection With	Detail Records, APP2	No
Realtime Report Data Collection Mode	Reschedule	Yes

## ODBC key fields

- PD\_APS\_ID\_PROCESS
- PD\_APS\_START\_TIME

## Lifetime

From the time the process executes until it terminates.

## Record size

- Fixed portion: 681 bytes
- Variable portion: 4,695 bytes

## Fields

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
CPU % (PCT_PROCESSOR_TIME)	Percentage of the elapsed processor time used by the process (%). In a multi-processor environment, usage is displayed with <i>number of processors</i> × 100% as the maximum value. However, the maximum value might be exceeded, depending on the collection timing.	--	double	No	--	--
Command Line (COMMAND_LINE)	Command line	--	string (4,097)	No	--	--
Creating Process ID (PROCESS_ID)	Process ID of the process that activated this process <sup>#</sup>	--	ulong	No	--	--
Elapsed Time (ELAPSED_TIME)	Total elapsed time for process execution (seconds) <sup>#</sup>	--	utime	No	--	--
Group (GROUP_NAME)	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, <i>computer-name</i> , for example). 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 (36)	No	--	--

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Handle Count (HANDLE_COUNT)	Number of handles kept open by the process <sup>#</sup>	--	ulong	No	--	--
IO Data Bytes/sec (IO_DATA_BYTES_PER_SEC)	Rate at which data was read or written in all I/O operations generated by the process (bytes/second)	--	double	No	--	--
IO Data Operations/sec (IO_DATA_OPERATIONS_PER_SEC)	Number of read and write operations in all I/O operations generated by the process (operations/second)	--	double	No	--	--
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, for example) in all I/O operations generated by the process (bytes/second)	--	double	No	--	--
IO Other Operations/sec (IO_OTHER_OPERATIONS_PER_SEC)	Number of operations other than read or write operations (control functions, for example) in all I/O operations generated by the process (operations/second)	--	double	No	--	--
IO Read Bytes/sec (IO_READ_BYTES_PER_SEC)	Rate at which data was read in all I/O operations generated by the process (bytes/second)	--	double	No	--	--
IO Read Operations/sec (IO_READ_OPERATIONS_PER_SEC)	Number of read operations in all I/O operations generated by the process (operations/second)	--	double	No	--	--
IO Write Bytes/sec (IO_WRITE_BYTES_PER_SEC)	Rate at which data was written in all I/O operations generated by the process (bytes/second)	--	double	No	--	--
IO Write Operations/sec (IO_WRITE_OPERATIONS_PER_SEC)	Number of write operations in all I/O operations generated by the process (operations/second)	--	double	No	--	--
Interval (INTERVAL)	Always 0	--	ulong	No	--	--
PID (ID_PROCESS)	Process ID. Unique identifier of the executing process	--	ulong	No	--	--
Page Faults/sec (PAGE_FAULTS_PER_SEC)	Rate at which page faults occurred in the process (faults/second)	--	double	No	--	--
Page File Kbytes (PAGE_FILE_BYTES)	Size of the virtual memory area used by the process as paging files (KB) <sup>#</sup>	--	double	No	--	--
Page File Kbytes Peak (PAGE_FILE_BYTES_PEAK)	Maximum size of the virtual memory area used by the process as paging files (KB) <sup>#</sup>	--	double	No	--	--
Pool Nonpaged Kbytes (POOL_NONPAGED_BYTES)	Size of the memory that was used by the process and that cannot be paged (KB) <sup>#</sup>	--	double	No	--	--
Pool Paged Kbytes (POOL_PAGED_BYTES)	Size of the memory that was used by the process and that can be paged (KB) <sup>#</sup>	--	double	No	--	--
Priority Base (PRIORITY_BASE)	Process base priority. The greater the value, the higher the priority. The following values are available:	--	ulong	No	--	--

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Priority Base (PRIORITY_BASE)	<ul style="list-style-type: none"> <li>• 24: Real-time</li> <li>• 13: High</li> <li>• 10: Higher than normal</li> <li>• 8: Normal</li> <li>• 6: Lower than normal</li> <li>• 4: Low</li> </ul>	--	ulong	No	--	--
Private Kbytes (PRIVATE_BYTES)	Size of the memory that was allocated to the process and that cannot be shared with other processes (KB) <sup>#</sup>	--	double	No	--	--
Privileged CPU % (PCT_PRIVILEGED_TIME)	Percentage of the elapsed time the process used the processor in the privileged mode (%). In a multi-processor environment, usage is displayed with <i>number of processors</i> × 100 (%) as the maximum value. However, the maximum value might be exceeded, depending on the collection timing.	--	double	No	--	--
Program Name (INSTANCE)	Executing program name	--	string (257)	No	--	--
Record Time (RECORD_TIME)	Time at which the record was created	--	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record name. Always APS.	--	char (8)	No	--	--
Start time (START_TIME)	Start time of the process	--	time_t	No	--	--
Thread Count (THREAD_COUNT)	Number of threads (unit for executing an instruction) in the process. When a process is executed, at least one thread is started. <sup>#</sup>	--	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 (36)	No	--	--
User CPU % (PCT_USER_TIME)	Amount of processor time used by the process in the user mode (%). In a multi-processor environment, usage is displayed with <i>number of processors</i> × 100% as the maximum value. However, the maximum value might be exceeded, depending on the collection timing.	--	double	No	--	--
Virtual Env ID (VIRTUAL_ENV_ID)	ID of the virtualized environment created by the virtualized system provided by the OS	--	string (65)	No	2012	--
Virtual Kbytes (VIRTUAL_BYTES)	Size of the virtual address space used by processes (KB) <sup>#</sup>	--	double	No	--	--
Virtual Kbytes Peak (VIRTUAL_BYTES_PEAK)	Maximum size of the virtual address space used by processes (KB) <sup>#</sup>	--	double	No	--	--



PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Working Set Kbytes (WORKING_SET)	Size of the memory used by the process (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) <sup>#</sup>	--	double	No	--	--
Working Set Kbytes Peak (WORKING_SET_PEAK)	Maximum size of the memory used by the process (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) <sup>#</sup>	--	double	No	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

# Application Service Overview (PD\_ASVC)

## Function

The Application Service Overview (PD\_ASVC) record stores performance data that shows for a given point in time the state of an application service, such as Win32 processes, that is registered in the Service Control Manager (SCM). This record is a multi-instance record.

### Notes:

- This record can be used for real-time reports only.
- An error (KAVJS5001-I) results if you attempt to display a historical report of this record.
- Any character in the source information that is not in the ASCII character set range of 0x20 to 0x7E will be converted to a hash mark (#: 0x23) before it is stored in the Service Name (SERVICE\_NAME) field or Display Name (DISPLAY\_NAME) field. Note that multi-byte characters are processed in single-byte units during conversion. For example, the multi-byte (full-width) letter A is converted as follows:

Source information		Post-conversion information	
Character encoding	Binary	Binary	Character string
Shift-JIS	8260	2360	# `
EUC	A3C1	2323	##
UTF-8	EFBCA1	232323	###

- The value of the Service Name (SERVICE\_NAME) field corresponds to the value shown in **Service Name** when you open the *Services* property in the Service Control Manager (SCM).
- The value of the Display Name (DISPLAY\_NAME) field corresponds to the value shown in **Display Name** when you open the *Services* property in the Service Control Manager (SCM).
- If the value of the State (STATE) field is not RUNNING, the value of the PID (ID\_PROCESS) field will be 0.
- If the startup type of the Windows Management Instrumentation service (service name: Winmgmt) that provides system management information for the OS is set to Disabled, the PID field cannot be collected correctly.

## Default values and values that can be specified

Item	Default value	Modifiable
Log	No	No
LOGIF	Blank	Yes
Over 10 Sec Collection Time	No	No
Sync Collection With	Detail Records, APP2	No
Realtime Report Data Collection Mode	Reschedule	Yes

## ODBC key fields

- PD\_ASVC\_SERVICE\_NAME
- PD\_ASVC\_TYPE

## Lifetime

From the time the service is installed until it is uninstalled.

## Record size

- Fixed portion: 681 bytes
- Variable portion: 4,854 bytes

## Fields

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Accepted Controls (ACCEPTED_CONTROLS)	Control codes received by the service. The values in this field are all or some of the following: PAUSE_CONTINUE: The stop is temporary, and a restart is possible. SHUTDOWN: An OS shutdown is reported to the service. STOP: Stopping is possible. The following values are listed in data model version 4.1 or later: PARAMCHANGE: The beginning parameter can be reread without a restart. NETBINDCHANGE: The bind change can be accepted without restarting from the network. HARDWAREPROFILECHANGE: The service is notified when the hardware profile is changed. POWEREVENT: The service is notified when the state of the OS power supply is changed. SESSIONCHANGE: The service is notified when the state of the OS session is changed.	--	string (128)	No	--	--
Checkpoint (CHECKPOINT)	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 the service	--	string (257)	No	--	--
Image Path (IMAGE_PATH)	Fully qualified path to the service's binary file	--	string (4,097)	No	--	--
Interval (INTERVAL)	Always 0	--	ulong	No	--	--
PID (ID_PROCESS)	Process ID	--	ulong	No	--	--
Record Time (RECORD_TIME)	Time at which the record was created	--	time_t	No	--	--

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Record Type (INPUT_RECORD_TYPE)	Record name. Always ASVC.	--	char (8)	No	--	--
Service Exit Code (SERVICE_EXIT_CODE)	Exit code unique to the service	--	long	No	--	--
Service Name (SERVICE_NAME)	Service name used by the service control manager database	--	string (257)	No	--	--
Service Type (TYPE)	One of the following service types: WIN32_OWN_PROCESS: The service application runs in a process that is exclusively for the application. 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: INTERACTIVE_PROCESS	--	string (64)	No	--	--
State (STATE)	Service state during data collection. One of the following values is used for this field: CONTINUE_PENDING: Starting state with the <b>Resume</b> button after pausing PAUSE_PENDING: Pausing state PAUSED: Paused state RUNNING: Running state START_PENDING: Starting state STOP_PENDING: Stopping state STOPPED: Stopped state	--	string (31)	No	--	--
Wait Hint (WAIT_HINT)	Time expected to be used 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_EXIT_CODE)	Win32 exit code	--	long	No	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

# 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
Log	No	Yes
LOGIF	Blank	Yes
Over 10 Sec Collection Time	No	No
Sync Collection With	Detail Records, PD	No
Realtime Report Data Collection Mode	Reschedule	Yes

## 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 name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Application Name (APPLICATION_NAME)	The name specified by Application monitoring setting	--	string (64)	No	--	--
Application Status (APPLICATION_STATUS)	The results of all Process Range conditions. NORMAL or ABNORMAL is displayed. When a blank is displayed for Process01 Status -Process15 Status, the blank is ignored. NORMAL: All the results of Process01 Status -Process15 Status are NORMAL.	--	string (10)	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Application Status (APPLICATION_STATUS)	ABNORMAL: At least one of the results of Process01 Status -Process15 Status is ABNORMAL Blank: The settings are not set.	--	string (10)	No	--	--
Application Exist (APPLICATION_EXIST)	The results of all Process Range conditions. NORMAL or ABNORMAL is displayed. When a blank is displayed for Process01 Status -Process15 Status, the blank is ignored. NORMAL: At least one of the results of Process01 Status -Process15 Status is NORMAL. ABNORMAL: All the results of Process01 Status -Process15 Status are ABNORMAL. Blank: The settings are not set.	--	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	--	--
Process01 Count (PROCESS01_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 (PROCESS01_NAME)	Process name	--	string (32)	No	--	--
Process01 Range (PROCESS01_RANGE)	The range conditions for each process. The conditions are displayed as <i>Minimum value-Maximum value.</i>	--	string (12)	No	--	--
Process01 Status (PROCESS01_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	--	--
Process02 Count (PROCESS02_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 (PROCESS02_NAME)	Process name	--	string (32)	No	--	--
Process02 Range (PROCESS02_RANGE)	The range conditions for each process. The conditions are displayed as <i>Minimum value-Maximum value.</i>	--	string (12)	No	--	--
Process02 Status (PROCESS02_STATUS)	The Process Range condition result for each process. NORMAL, ABNORMAL, or a blank is displayed. NORMAL: No error exists. ABNORMAL: An error exists.	--	string (10)	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Process02 Status (PROCESS02_STATUS)	Blank: The settings are not set.	--	string (10)	No	--	--
Process03 Count (PROCESS03_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 (PROCESS03_NAME)	Process name	--	string (32)	No	--	--
Process03 Range (PROCESS03_RANGE)	The range conditions for each process. The conditions are displayed as <i>Minimum value–Maximum value.</i>	--	string (12)	No	--	--
Process03 Status (PROCESS03_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	--	--
Process04 Count (PROCESS04_COUNT)	The number of processes currently operating	--	word	No	--	--
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 <i>Minimum value–Maximum value.</i>	--	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 <i>Minimum value–Maximum value.</i>	--	string (12)	No	--	--
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.	--	string (10)	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Process05 Status (PROCESS05_STATUS)	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 <i>Minimum value–Maximum value.</i>	--	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	--	--
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 <i>Minimum value–Maximum value.</i>	--	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 <i>Minimum value–Maximum value.</i>	--	string (12)	No	--	--
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.	--	string (10)	No	--	--



PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Process08 Status (PROCESS08_STATUS)	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 <i>Minimum value–Maximum value.</i>	--	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	--	--
Process10 Kind (PROCESS10_KIND)	The specified type of the condition is displayed	--	string (4)	No	--	--
Process10 Name (PROCESS10_NAME)	Process name	--	string (32)	No	--	--
Process10 Range (PROCESS10_RANGE)	The range conditions for each process. The conditions are displayed as <i>Minimum value–Maximum value.</i>	--	string (12)	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 (10)	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 (32)	No	--	--
Process11 Range (PROCESS11_RANGE)	The range conditions for each process. The conditions are displayed as <i>Minimum value–Maximum value.</i>	--	string (12)	No	--	--
Process11 Status (PROCESS11_STATUS)	The Process Range condition result for each process. NORMAL, ABNORMAL, or a blank is displayed. NORMAL: No error exists. ABNORMAL: An error exists.	--	string (10)	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Process11 Status (PROCESS11_STATUS)	Blank: The settings are not set.	--	string (10)	No	--	--
Process12 Count (PROCESS12_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 (PROCESS12_NAME)	Process name	--	string (32)	No	--	--
Process12 Range (PROCESS12_RANGE)	The range conditions for each process. The conditions are displayed as <i>Minimum value–Maximum value.</i>	--	string (12)	No	--	--
Process12 Status (PROCESS12_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	--	--
Process13 Count (PROCESS13_COUNT)	The number of processes currently operating	--	word	No	--	--
Process13 Kind (PROCESS13_KIND)	The specified type of the condition is displayed	--	string (4)	No	--	--
Process13 Name (PROCESS13_NAME)	Process name	--	string (32)	No	--	--
Process13 Range (PROCESS13_RANGE)	The range conditions for each process. The conditions are displayed as <i>Minimum value–Maximum value.</i>	--	string (12)	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 (10)	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 (32)	No	--	--
Process14 Range (PROCESS14_RANGE)	The range conditions for each process. The conditions are displayed as <i>Minimum value–Maximum value.</i>	--	string (12)	No	--	--
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.	--	string (10)	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Process14 Status (PROCESS14_STATUS)	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 <i>Minimum value–Maximum value.</i>	--	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	--	--
Record Type (INPUT_RECORD_TYPE)	Record name. Always APP.	--	char (8)	No	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

# Application Summary Extension (PD\_APP2)

---

## Function

The Application Summary Extension (PD\_APP2) record stores performance data that summarizes by application the records stored in the Application Process Overview (PD\_APS) and Application Service Overview (PD\_ASVC) records at a given point in time. One record is stored for each application. This record is a multi-instance record.

### Note:

To change an application definition, you must change the settings from PFM - Web Console.

- If the startup type of the Windows Management Instrumentation service (service name: Winmgmt) that provides system management information for the OS is set to Disabled, the Application Exist and Application Status fields cannot be collected correctly. If the startup type of the Windows Management Instrumentation service is set to Disabled while PFM - Agent for Platform is running, change the startup type to a value other than Disabled, and then restart PFM - Agent for Platform.

## Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset <sup>#</sup>	0	Yes
Log	No	Yes
LOGIF	Blank	Yes
Over 10 Sec Collection Time	No	No
Realtime Report Data Collection Mode	Reschedule	Yes

### #

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

## ODBC key fields

PD\_APP2\_APPLICATION\_NAME

## Lifetime

From the time the application definition is added in PFM - Web Console until it is deleted.

## Record size

- Fixed portion: 681 bytes
- Variable portion: 169 bytes

## Fields

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Application Exist (EXIST)	<p>The application status set from the process monitoring settings. NORMAL or ABNORMAL is displayed.</p> <p>The application status is the result obtained based on the status set for the monitoring targets.</p> <p>To check the status of the monitoring targets, refer to Monitoring Status, which is displayed in the Application Process Detail (PD_APPD) record.</p> <p>NORMAL: The status of least one of the monitoring targets is NORMAL.</p> <p>ABNORMAL: The status of all of the monitoring targets is ABNORMAL.</p>	--	string (10)	No	--	--
Application Name (APPLICATION_NAME)	The name set in the process monitoring settings	--	string (64)	No	--	--
Application Status (STATUS)	<p>The application status set from the process monitoring settings. NORMAL or ABNORMAL is displayed.</p> <p>The application status is the result obtained based on the status set for the monitoring targets.</p> <p>To check the status of the monitoring targets, refer to Monitoring Status, which is displayed in the Application Process Detail (PD_APPD) record.</p> <p>NORMAL: The status of all of the monitoring targets is NORMAL.</p> <p>ABNORMAL: The status of least one of the monitoring targets is ABNORMAL.</p>	--	string (10)	No	--	--
Case Sensitive (CASE_SENSITIVE)	<p>Distinguishes between upper- and lower-case letters:</p> <p>Yes: Case sensitive</p> <p>No: Not case sensitive</p>	--	string (4)	No	--	--
Interval (INTERVAL)	Number of seconds in the interval during which the Application Process Detail (PD_APP2) records were stored. Always 0.	--	ulong	No	--	--
Record Time (RECORD_TIME)	Time at which the record was created	--	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record name. Always APP2.	--	char (8)	No	--	--
Virtual Env ID (VIRTUAL_ENV_ID)	ID of the virtualized environment created by the virtualized system provided by the OS	--	string (65)	No	2012	--

### Legend:

Smry: Summary

Not sprtd on: Not supported on

# Browser Overview (PI\_BRSR)

---

## 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
Over 10 Sec Collection Time	No	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

## ODBC key fields

None

## Lifetime

None

## Record size

- Fixed portion: 1,001 bytes
- Variable portion: 0 bytes

## Fields

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Announcements Domain/sec (ANNOUNCEMENTS_DOM AIN_PER_SEC)	Rate at which a domain announced itself to the network (announcements/second).	AVG	float	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Announcements Server/sec (ANNOUNCEMENTS_SERV ER_PER_SEC)	Rate at which the domain server announced itself to the server (announcements/second).	AVG	float	No	--	--
Announcements Total/sec (ANNOUNCEMENTS_TOTA L_PER_SEC)	Total value of the Announcements Server/sec field and the Announcements Domain/sec field (announcements/ second).	AVG	float	No	--	--
Duplicate Master Announcements (DUPLICATE_MASTER_AN NOUNCEMENTS)	Number of times the master browser detected other master browsers within the same domain.#	AVG	ulong	No	--	--
Election Pkts/sec (ELECTION_PACKETS_PER _SEC)	Rate at which the workstation received browser election packets (packets/ second).	AVG	float	No	--	--
Enumerations Domain/sec (ENUMERATIONS_DOMAI N_PER_SEC)	Rate at which the workstation processed domain reference requests (requests/ second).	AVG	float	No	--	--
Enumerations Other/sec (ENUMERATIONS_OTHER _PER_SEC)	Rate at which the workstation processed reference requests other than domain or server reference requests (requests/ second).	AVG	float	No	--	--
Enumerations Server/sec (ENUMERATIONS_SERVER _PER_SEC)	Rate at which the workstation processed server reference requests (requests/ second).	AVG	float	No	--	--
Enumerations Total/sec (ENUMERATIONS_TOTAL _PER_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_DATAGRAMS_P ER_SEC)	Rate at which the workstation received Datagrams having an invalid format (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 ( $T_1$ ) - RECORD_ TIME ( $T_0$ )
Mailslot Allocations Failed (MAILSLOT_ALLOCATION S_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_OPENS_FAILE D_PER_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_FA ILED)	Number of mail slot messages that could not be received due to transport errors.#	AVG	ulong	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
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_SEC)	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_ANNOUNCE_ALLOC_FAIL_PER_SEC)	Rate at which server announcements or domain announcements failed due to memory shortage (failures/second).	AVG	float	No	--	--
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	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on



## Device Detail (PD\_DEV)

---

### 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
Over 10 Sec Collection Time	No	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

### 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 name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Active (ACTIVE)	Indicates whether the device was active during data collection. The following values are valid: - YES - NO	--	string (8)	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Depend Group Name (DEPEND_GROUP_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_SERVICE_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_NAME)	Device name. Name used by the user interface program to identify a device.	--	string (256)	No	--	--
Device Type (DEVICE_TYPE)	One of the following two device driver service types: - FILE_SYSTEM_DRIVER: File system's device driver service - KERNEL_DRIVER: Kernel's device driver service	--	string (36)	No	--	--
Error Control (ERROR_CONTROL)	Severity of the error that occurred during device service startup. The following values are valid. - 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. - IGNORE: The starting program records the error in an error log and continues the startup operation. - NORMAL: The starting program records the error in an error log, displays a message in a pop-up box, and continues the startup operation. - 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.	--	string (16)	No	--	--
Group Name (GROUP_NAME)	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_PATH)	Device image path name. If the device is not active, this field is left blank.	--	string (1,024)	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Image Path (IMAGE_PATH)	If the image path name cannot be acquired because no information exists in the registry, this field is left blank.	--	string (1,024)	No	--	--
Interval (INTERVAL)	Always 0.	--	ulong	No	--	--
Object Name (OBJECT_NAME)	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_TIME)	Time at which the record was created.	--	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record name. Always DEV.	--	char (8)	No	--	--
Start Constant (START_CONSTANT)	The device's start value. The following values are available: - AUTO: The device automatically starts when the system starts. - BOOT: The device is started by the system loader. - DISABLED: Device service that cannot be started. - DEMAND: The device is started by SCM when a process calls the StartService facility (API). - SYSTEM: The device is started by the IoInitSystem facility (API).	--	string (24)	No	--	--
Tag (TAG)	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.	--	long	No	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

# Event Log (PD\_ELOG)

---

## 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.
- 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.
- This record does not support collection in a logical host environment. Collect this record in a physical host environment.
- Only the following registry event logs can be collected by using the PD\_ELOG record.  
HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\Eventlog

## 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

Item	Default value	Modifiable
Over 10 Sec Collection Time	No	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

## 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

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Computer Name (COMPUTER_NAME)	Name of the computer that generated the event.	--	string (36)	No	--	--
Description (DESCRIPTION)	Event log explanation.	--	string (512)	No	--	--
Event Category (EVENT_CATEGORY)	Sub-category unique to the event source.	--	string (36)	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. 0: Success Audit 0: Failure Audit 1: Critical 2: Error 3: Warning 4: Information 5: Verbose	--	ulong	No	--	--
Event Type Name (EVENT_TYPE_NAME)	Event type. One of the following values is used for this field: - Error	--	string (26)	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Event Type Name (EVENT_TYPE_NAME)	- Warning - Information - Success Audit - Failure Audit - Critical - Verbose	--	string (26)	No	--	--
Log Name (LOG_NAME)	Event log type. The value of this field is one of the following: - Application - Security - System	--	string (26)	No	--	--
Record Time (RECORD_TIME)	Time at which the record was created.	--	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record name. Always ELOG.	--	char (8)	No	--	--
Source Name (SOURCE_NAME)	Name of the source (application, service, driver, or subsystem) that generated the entry.	--	string (256)	No	--	--
Time Generated (TIME_GENERATED)	Time at which the event entry was submitted.	--	time_t	No	--	--
User Name (USER_NAME)	User name that was active when the event was recorded.	--	string (36)	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	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

## Generic Data Detail (PD\_GEND)

---

### 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 performance data of an instance when instances with the same name are created and disappear frequently.

Of the instances specified as collection targets by the collection data addition utility, if ones with the same name are created and disappear frequently within the same data collection interval, these separate instances are treated as the same instance. As a result, correct performance data cannot be collected.

- Do not specify instances with the same name that can exist concurrently as collection targets by the collection data addition utility.

When multiple instances specified as collection targets 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), and one or more of these instances disappear, the performance data on the remaining active instances with the same name may become corrupted.

Also, when instances with the same name are newly generated, the performance data for the remaining active instances with the same name may become corrupted.

- 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, 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.
- If you want to collect 64-bit performance data, use the Generic Data Detail64 (PD\_GD64) record.
- This record does not support collection in a logical host environment. Collect this record in a physical host environment.

### 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

Item	Default value	Modifiable
Over 10 Sec Collection Time	Yes	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

## 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 name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Counter Name (COUNTER_NAME)	Counter name.	--	string (256)	No	--	Counter name of Performan ce Console
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 Performan ce 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 ( $T_1$ ) -



PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
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 ( $T_0$ )
Object Name (OBJECT_NAME)	Object name.	--	string (256)	No	--	Object name of Performan ce 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	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

## Generic Data Detail64 (PD\_GD64)

### Function

The Generic Data Detail64 (PD\_GD64) record is a user record that stores user-defined 64-bit performance data that shows the state at a given point in time. Because this record can store only specified performance data rather than all performance data for the collection target object, its use 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 record 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 performance data for an instance when instances with the same name are created and disappear frequently.  
If instances that are specified as collection targets by the collection data addition utility and that have the same name are created and disappear frequently 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.
- Do not specify instances with the same name that can exist concurrently as collection targets for the collection data addition utility.  
When multiple instances specified as collection targets by the collection data addition utility have the same name (#n is added to the Instance (INSTANCE) field of the PD\_GD64 record), and one or more of these instances disappears, the performance data for the remaining active instances with the same name may become corrupted. Also, when an instance with a duplicative name is newly generated, the performance data for the existing active instances with the same name may become corrupted.
- 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 information collected during the preceding collection interval.
- When you set user-defined records, objects that are not supported for 64-bit operation are not displayed in the PI\_GI64-PD\_GD64 Record Settings dialog box of the collection data addition utility.
- This record does not support collection in a logical host environment. Collect this record in a physical host environment.

### 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
Over 10 Sec Collection Time	Yes	No

Item	Default value	Modifiable
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

## ODBC key fields

- PD\_GD64\_INSTANCE
- PD\_GD64\_COUNTER\_NAME
- PD\_GD64\_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: 1,084 bytes

## Fields

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Counter Name (COUNTER_NAME)	Counter name	--	string (256)	No	--	Counter name of Performance Console
Data Type (DATA_TYPE)	Type of data accumulated in the record. The following normal values are available: <ul style="list-style-type: none"> <li>• DOUBLE</li> <li>• STRING</li> </ul>	--	string (12)	No	--	--
Double (DOUBLE_DATA)	Value displayed as a real or integer type	--	double	No	--	--
Instance (INSTANCE)	Instance name. Left blank for a single-instance object.	--	string (256)	No	--	Instance name of Performance Console
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 (T <sub>1</sub> ) - RECORD_TIME (T <sub>0</sub> )
Object Name (OBJECT_NAME)	Object name	--	string (256)	No	--	Object name of

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Object Name (OBJECT_NAME)	Object name	--	string (256)	No	--	Performan ce 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 GD64.	--	char (8)	No	--	--
String Data (STRING_DATA)	Integer-type value displayed as a character string in hexadecimal (0x)	--	string (256)	No	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

# Generic Data Interval (PI\_GENI)

## 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 specified performance data rather than all performance data for the collection target object, its use 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 performance data for an instance when instances with the same name are created and disappear frequently. If instances that are specified as collection targets by the collection data addition utility and that have the same name are created and disappear frequently 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.
- Do not specify instances with the same name that can exist concurrently as collection targets for the collection data addition utility.

When multiple instances specified as collection targets 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), and one or more of these instances disappears, the performance data for the remaining active instances with the same name may become corrupted.

Also, when an instance with a duplicative name is newly generated, the performance data for the existing active instances with the same name may become corrupted.

- 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, 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.
- To collect 64-bit performance data, use the Generic Data Interval64 (PI\_GI64) record.
- This record does not support collection in a logical host environment. Collect this record in a physical host environment.

## 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

Item	Default value	Modifiable
Over 10 Sec Collection Time	Yes	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

## 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 name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Counter Name (COUNTER_NAME)	Counter name.	COPY	string (256)	No	--	Counter name of Performan ce Console
Data Type (DATA_TYPE)	Type of data accumulated in the record. The following normal values are available: - DOUBLE - STRING	COPY	string (12)	No	--	--
Double (DOUBLE_DATA)	Value displayed as a real or integer type.	AVG	double	No	--	--
Float (FLOAT_DATA)	Always 0.	AVG	float	No	--	--
Instance (INSTANCE)	Instance name. Left blank for a single-instance object.	COPY	string (256)	No	--	Instance name of Performan ce Console
Integer (INTEGER_DATA)	Always 0.	AVG	ulong	No	--	--
Interval (INTERVAL)	Collection interval during which the record was stored (seconds).	COPY	ulong	No	--	RECORD_ TIME (T <sub>1</sub> ) -

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Interval (INTERVAL)	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 ( $T_0$ )
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 ( $T_1$ ) - RECORD_ TIME ( $T_0$ )
Object Name (OBJECT_NAME)	Object name.	COPY	string (256)	No	--	Object name of Performan ce Console
Record Time (RECORD_TIME)	Time at which the record was created.	COPY	time_t	No	--	--
Record Type (INPUT_RECORD_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 (256)	No	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

## Generic Data Interval64 (PI\_GI64)

### Function

The Generic Data Interval64 (PI\_GI64) record is a user record that stores user-defined 64-bit performance data per unit of time. Because this record can store only specified performance data rather than all performance data for the collection target object, its use 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 record 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 performance data for an instance when instances with the same name are created and disappear frequently. If instances that are specified as collection targets by the collection data addition utility and that have the same name are created and disappear frequently 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.
- Do not specify instances with the same name that can exist concurrently as collection targets for the collection data addition utility. When multiple instances specified as collection targets by the collection data addition utility have the same name (#*n* is added to the Instance (INSTANCE) field of the PI\_GI64 record), and one or more of these instances disappears, the performance data for the remaining active instances with the same name may become corrupted. Also, when an instance with a duplicative name is newly generated, the performance data for the existing active instances with the same name may become corrupted.
- 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 information collected during the preceding collection interval.
- When you set user-defined records, objects that are not supported for 64-bit operation are not displayed in the PI\_GI64-PD\_GD64 Record Settings dialog box in the collection data addition utility.
- This record does not support collection in a logical host environment. Collect this record in a physical host environment.

### 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
Over 10 Sec Collection Time	Yes	No
Realtime Report Data Collection Mode	Reschedule	Yes



#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

## ODBC key fields

- PI\_GI64\_INSTANCE
- PI\_GI64\_COUNTER\_NAME
- PI\_GI64\_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: 1,084 bytes

## Fields

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Counter Name (COUNTER_NAME)	Counter name	COPY	string (256)	No	--	Counter name of Performan ce Console
Data Type (DATA_TYPE)	Type of data accumulated in the record. The following normal values are available: <ul style="list-style-type: none"><li>• DOUBLE</li><li>• STRING</li></ul>	COPY	string (12)	No	--	--
Double (DOUBLE_DATA)	Value displayed as a real or integer type	AVG	double	No	--	--
Instance (INSTANCE)	Instance name. Left blank for a single-instance object.	COPY	string (256)	No	--	Instance name of Performan ce Console
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 value stored is displayed.	COPY	ulong	No	--	RECORD_ TIME ( $T_1$ ) - RECORD_ TIME ( $T_0$ )
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 ( $T_1$ ) - RECORD_ TIME ( $T_0$ )

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Object Name (OBJECT_NAME)	Object name	COPY	string (256)	No	--	Object name of Performance Console
Record Time (RECORD_TIME)	Time at which the record was created	COPY	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record name. The default record name is GI64.	COPY	char (8)	No	--	--
String Data (STRING_DATA)	Integer-type value displayed as a character string in hexadecimal (0x)	COPY	string (256)	No	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

# ICMP Overview (PI\_ICMP)

## 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 <sup>#</sup>	0	Yes
Log	No	Yes
LOGIF	Blank	Yes
Over 10 Sec Collection Time	No	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

## ODBC key fields

None

## Lifetime

None

## Record size

- Fixed portion: 1,113 bytes
- Variable portion: 0 bytes

## Fields

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	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 (T <sub>1</sub> ) - RECORD_ TIME (T <sub>0</sub> )

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Messages Outbound Errors (MESSAGES_OUTBOUND_ ERRORS)	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 (MESSAGES_RECEIVED_E RRORS)	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_P ER_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_SENT_PER_S EC)	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_PER_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_M ASK)	Number of ICMP address mask request messages received following the OS startup.#	AVG	ulong	No	--	--
Rcvd Address Mask Reply (RECEIVED_ADDRESS_M ASK_REPLY)	Number of ICMP address mask reply messages received following the OS startup.#	AVG	ulong	No	--	--
Rcvd Destination Unreachable (RECEIVED_DEST_UNREA CHABLE)	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_S EC)	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_PE R_SEC)	Rate at which ICMP redirect messages were received (messages/second).	AVG	float	No	--	--
Rcvd Source Quench (RECEIVED_SOURCE_QUE NCH)	Number of ICMP source quench messages received following the OS startup.#	AVG	ulong	No	--	--
Rcvd Time Exceeded (RECEIVED_TIME_EXCEE DED)	Number of ICMP time exceeded messages received following the OS startup.#	AVG	ulong	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
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	--	--
Record Type (INPUT_RECORD_TYPE)	Record name. Always ICMP.	COPY	char (8)	No	--	--
Sent Address Mask (SENT_ADDRESS_MASK)	Number of ICMP address mask request messages sent following the OS startup.#	AVG	ulong	No	--	--
Sent Address Mask Reply (SENT_ADDRESS_MASK_ REPLY)	Number of ICMP address mask reply messages sent following the OS startup.#	AVG	ulong	No	--	--
Sent Destination Unreachable (SENT_DESTINATION_UN REACHABLE)	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_PARAMETER_PROB LEM)	Number of ICMP parameter error messages sent following the OS startup.#	AVG	ulong	No	--	--
Sent Redirect/sec (SENT_REDIRECT_PER_SE C)	Rate at which ICMP redirect messages were sent (messages/second).	AVG	float	No	--	--
Sent Source Quench (SENT_SOURCE_QUENCH)	Number of ICMP source quench messages sent following the OS startup.#	AVG	ulong	No	--	--
Sent Time Exceeded (SENT_TIME_EXCEEDED)	Number of ICMP time exceeded messages sent following the OS startup.#	AVG	ulong	No	--	--
Sent Timestamp Reply/sec (SENT_TIMESTAMP_REPL Y_PER_SEC)	Rate at which ICMP time stamp reply messages were sent (messages/second).	AVG	float	No	--	--
Sent Timestamp/sec (SENT_TIMESTAMP_PER_S EC)	Rate at which ICMP time stamp request messages were sent (messages/second).	AVG	float	No	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

# ICMP Version 6 Overview (PI\_ICM6)

## 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 <sup>#</sup>	0	Yes
Log	No	Yes
LOGIF	Blank	Yes
Over 10 Sec Collection Time	No	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

## ODBC key fields

None

## Lifetime

None

## Record size

- Fixed portion: 1,209 bytes
- Variable portion: 0 bytes

## Fields

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	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 (T <sub>1</sub> ) - RECORD_ TIME (T <sub>0</sub> )

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Messages Outbound Errors (MESSAGES_OUTBOUND_ ERRORS)	Number of ICMP messages that could not be sent due to problems detected inside ICMP, such as a buffer shortage, following the OS startup <sup>#</sup>	AVG	ulong	No	--	--
Messages Rcvd Errors (MESSAGES_RECEIVED_E RRORS)	Number of ICMP messages that were received but were judged to contain an error following the OS startup <sup>#</sup>	AVG	ulong	No	--	--
Messages Rcvd/sec (MESSAGES_RECEIVED_P ER_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_SENT_PER_S EC)	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_PER_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 (RECEIVED_DEST_UNREA CHABLE)	Number of ICMP destination unreachable messages received following the OS startup <sup>#</sup>	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_S EC)	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 (RECEIVED_MEMBERSHIP _REDUCTION)	The number of received Group Membership Reduction packets	AVG	ulong	No	--	--
Rcvd Membership Report (RECEIVED_MEMBERSHIP _REPORT)	The number of received Group Membership Report packets	AVG	ulong	No	--	--
Rcvd Neighbor Advert (RECEIVED_NEIGHBOR_A DVERT)	The number of received Neighbor Advertisement packets	AVG	ulong	No	--	--
Rcvd Neighbor Solicit (RECEIVED_NEIGHBOR_S OLICIT)	The number of received Neighbor Solicitation packets	AVG	ulong	No	--	--
Rcvd Packet Too Big (RECEIVED_PACKET_TOO _BIG)	The number of received packets that are larger than anticipated	AVG	ulong	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Rcvd Parameter Problem (RECEIVED_PARAMETER_ PROBLEM)	Number of ICMP parameter error messages received <sup>#</sup>	AVG	ulong	No	--	--
Rcvd Redirect/sec (RECEIVED_REDIRECT_PE R_SEC)	Rate at which ICMP redirect messages were received (messages/second)	AVG	float	No	--	--
Rcvd Router Advert (RECEIVED_ROUTER_AD VERT)	The number of received Router Advertisement packets	AVG	ulong	No	--	--
Rcvd Router Solicit (RECEIVED_ROUTER_SOL ICIT)	The number of received Router Solicitation packets	AVG	ulong	No	--	--
Rcvd Time Exceeded (RECEIVED_TIME_EXCEE DED)	Number of ICMP time exceeded messages received following the OS startup <sup>#</sup>	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_UN REACHABLE)	Number of ICMP destination unreachable messages sent following the OS startup <sup>#</sup>	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_QUE RY)	The number of sent Group Membership Query packets	AVG	ulong	No	--	--
Sent Membership Reduction (SENT_MEMBERSHIP_RED UCTION)	The number of sent Group Membership Reduction packets	AVG	ulong	No	--	--
Sent Membership Report (SENT_MEMBERSHIP_REP ORT)	The number of sent Group Membership Report packets	AVG	ulong	No	--	--
Sent Neighbor Advert (SENT_NEIGHBOR_ADVE RT)	The number of sent Neighbor Advertisement packets	AVG	ulong	No	--	--
Sent Neighbor Solicit (SENT_NEIGHBOR_SOLICI T)	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_PROB LEM)	Number of ICMP parameter error messages sent following the OS startup <sup>#</sup>	AVG	ulong	No	--	--



PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
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 <sup>#</sup>	AVG	ulong	No	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

# IP Overview (PI\_IP)

## 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
Over 10 Sec Collection Time	No	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

## ODBC key fields

None

## Lifetime

None

## Record size

- Fixed portion: 953 bytes
- Variable portion: 0 bytes

## Fields

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Datagrams Forwarded/sec (DATAGRAMS_FORWARDED_PER_SEC)	Rate at which forwarding routes for Datagrams were searched for because the destinations were not final (Datagrams/second).	AVG	float	No	--	--
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	AVG	ulong	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Datagrams Outbound Discarded (DATAGRAMS_OUTBOUND_DISCARDED)	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	--	--
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	--	--
Fragmented Datagrams/sec (FRAGMENTED_DATAGRAMS_PER_SEC)	Rate at which Datagrams were fragmented normally (Datagrams/second).	AVG	float	No	--	--

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
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_ASSEMBLED_PER_SEC)	Rate at which IP fragments were correctly reassembled (fragments/second).	AVG	float	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 total of the summarized records is displayed.	ADD	ulong	No	--	RECORD_TIME ( $T_1$ ) - RECORD_TIME ( $T_0$ )
Record Time (RECORD_TIME)	Time at which the record was created.	COPY	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record name. Always IP.	COPY	char (8)	No	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

# IP Version 6 Overview (PI\_IP6)

## 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
Over 10 Sec Collection Time	No	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

## ODBC key fields

None

## Lifetime

None

## Record size

- Fixed portion: 953 bytes
- Variable portion: 0 bytes

## Fields

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Datagrams Forwarded/sec (DATAGRAMS_FORWARDED_PER_SEC)	Rate at which forwarding routes for Datagrams were searched for because the destinations were not final (Datagrams/second)	AVG	float	No	--	--
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	AVG	ulong	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Datagrams Outbound Discarded (DATAGRAMS_OUTBOUND_DISCARDED)	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	--	--
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	--	--
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	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Fragment Reassembly Failures (FRAGMENT_RE_ASSEMBLY_FAILURES)	Number of failures, such as time-outs and errors, detected by the IP reassembly algorithm following the OS startup <sup>#</sup>	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 <sup>#</sup>	AVG	ulong	No	--	--
Fragmented Datagrams/sec (FRAGMENTED_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_ASSEMBLED_PER_SEC)	Rate at which IP fragments were correctly reassembled (fragments/second)	AVG	float	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 total of the summarized records is displayed.	ADD	ulong	No	--	RECORD_TIME ( $T_1$ ) - RECORD_TIME ( $T_0$ )
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	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

# Logical Disk Overview (PI\_LOGD)

## 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.
- 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.
- If the startup type of the Windows Management Instrumentation service (service name: `Winmgmt`) that provides system management information for the OS is set to `Disabled`, the Page File Size Mbytes field cannot be collected correctly. If the startup type of the Windows Management Instrumentation service is set to `Disabled` while PFM - Agent for Platform is running, change the startup type to a value other than `Disabled`, and then restart PFM - Agent for Platform.
- This record cannot be used for monitoring the disk usage at each mount point created by using the Windows folder mount function.
- You cannot use PI\_LDSK records to collect performance information for a CSV file system (CSVFS).

## 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
Over 10 Sec Collection Time	No	No
Realtime Report Data Collection Mode	Reschedule	Yes



#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

## 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 name)	Description	Smry	Format	Delta	Not sprtd on	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_FRE E_SPACE
% 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_DISK_SIZE)	Same value as that in the Free Mbytes field.#	AVG	ulong	No	--	--
Avg Disk Bytes/Read (AVG_DISK_BYTES_PER_READ)	Average number of bytes transferred from the disk during read operations (bytes/operation).	AVG	float	No	--	--
Avg Disk Bytes/Write (AVG_DISK_BYTES_PER_WRITE)	Average number of bytes transferred to the disk during write operations (bytes/operation).	AVG	float	No	--	--
Avg Disk Bytes/Xfer (AVG_DISK_BYTES_PER_TRANSFER)	Average number of bytes transferred between disks during write or read operations (bytes/operation). Normally,	AVG	float	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Avg Disk Bytes/Xfer (AVG_DISK_BYTES_PER_T RANSFER)	the larger the transfer size, the more efficiently the system is operating.	AVG	float	No	--	--
Avg Disk Queue Length (AVG_DISK_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_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 REA D)	Average time it took to read data from the disk (seconds).	AVG	float	No	--	--
Avg Disk Secs/Write (AVG_DISK_SEC_PER WRI TE)	Average time it took to write data to the disk (seconds).	AVG	float	No	--	--
Avg Disk Secs/Xfer (AVG_DISK_SEC_PER TRA NSFER)	Average time it took for disk transfers (seconds).	AVG	float	No	--	--
Avg Disk Write Queue Length (AVG_DISK_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_ LENGTH)	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	--	--
Disk Write Bytes/sec (DISK_WRITE_BYTES_PER _SEC)	Speed at which data was transferred to the disk during write operation (bytes/ second).	AVG	float	No	--	--
Disk Writes/sec (DISK_WRITES_PER_SEC)	Disk write processing speed (writes/ second).	AVG	float	No	--	--
Disk Xfers/sec (DISK_TRANSFERS_PER_S EC)	Disk read and write processing speed (transfers/second).	AVG	float	No	--	--
Drive Type (DRIVE_TYPE)	Disk type. The following values are valid: - FIXED - NO ROOT DIR - REMOVABLE	COPY	string (36)	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Drive Type (DRIVE_TYPE)	- DRIVE UNKNOWN	COPY	string (36)	No	--	--
Free Mbytes (FREE_MEGABYTES)	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 (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 (T <sub>1</sub> ) - RECORD_ TIME (T <sub>0</sub> )
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 (T <sub>1</sub> ) - RECORD_ TIME (T <sub>0</sub> )
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	2012, 2016, 2019	ReturnValu e ÷ 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	--	<i>(total number of clusters on the disk × number of sectors per cluster × number of bytes per sector) ÷ 1 MB</i>

Legend:

Smry: Summary

Not sprtd on: Not supported on

# NBT Overview (PI\_NBT)

---

## 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 <sup>#</sup>	0	Yes
Log	No	Yes
LOGIF	Blank	Yes
Over 10 Sec Collection Time	No	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

## ODBC key fields

PI\_NBT\_INSTANCE

## Lifetime

None

## Record size

- Fixed portion: 681 bytes
- Variable portion: 308 bytes

## Fields

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Bytes Rcvd/sec (BYTES_RECEIVED_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_TOTAL_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 (INSTANCE)	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 (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 ( $T_1$ ) - RECORD_ TIME ( $T_0$ )
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 ( $T_1$ ) - RECORD_ TIME ( $T_0$ )
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	--	--

### Legend:

Smry: Summary

Not sprtd on: Not supported on

# Network Interface Overview (PI\_NETI)

---

## Function

The Network Interface Overview (PI\_NETI) record contains performance data collected at certain intervals, such as the rate of data and packets transferred over a connection such as a TCP/IP connection, and the number of various types of errors that occurred over each connection.

This is a multi-instance record.

### Notes:

- In an environment that uses both IPv4 and IPv6, consolidated IPv4 and IPv6 information is collected.
- If the approximate bandwidth of an interface exceeds 4,294,967,295 bits per second, information for this interface is not displayed correctly, because this value exceeds the range of values that can be displayed in the Current Bandwidth field of the PI\_NETI 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
Over 10 Sec Collection Time	No	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

## ODBC key fields

PI\_NETI\_INSTANCE

## Lifetime

From NIC installation until its removal

## Record size

- Fixed portion: 681 bytes
- Variable portion: 532 bytes

## Fields

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
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). <sup>#</sup>	AVG	ulong	No	--	--
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 ( $T_1$ ) - RECORD_ TIME ( $T_0$ )
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 ( $T_1$ ) - RECORD_ TIME ( $T_0$ )
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. <sup>#</sup>	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. <sup>#</sup>	AVG	ulong	No	--	--
Pkts Outbound Errors (PACKETS_OUTBOUND_ERRORS)	Number of outbound packets that could not be transmitted due to an error following the OS startup. <sup>#</sup>	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	AVG	ulong	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Pkts Rcvd Discarded (PACKETS_RECEIVED_DIS CARDED)	to an upper-layer protocol was detected following the OS startup.#	AVG	ulong	No	--	--
Pkts Rcvd Errors (PACKETS_RECEIVED_ER RORS)	Number of received packets containing an error preventing transfer to an upper-layer protocol following the OS startup.#	AVG	ulong	No	--	--
Pkts Rcvd Non-Unicast/sec (PACKETS_REC_NON_UNI CAST_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_REC_UNICAST _PER_SEC)	Rate at which subnet unicast packets are transferred to an upper-layer protocol (packets/second).	AVG	float	No	--	--
Pkts Rcvd Unknown (PACKETS_RECEIVED_UN KNOWN)	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_RECEIVED_PE R_SEC)	Rate at which packets were received through the network interface (packets/second).	AVG	float	No	--	--
Pkts Sent Non-Unicast/sec (PACKETS_SENT_NON_UN ICAST_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_SENT_UNICAS T_PER_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_SENT_PER_SEC )	Rate at which packets were sent through the network interface (packets/second).	AVG	float	No	--	--
Pkts/sec (PACKETS_PER_SEC)	Rate at which packets were sent/received through the network interface (packets/second).	AVG	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 NETI.	COPY	char (8)	No	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on



## Page File Detail (PD\_PAGF)

---

### 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 <sup>#</sup>	0	Yes
Log	No	Yes
LOGIF	Blank	Yes
Over 10 Sec Collection Time	No	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

### 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 name)	Description	Smry	Format	Delta	Not sprtd on	Data source
% Usage (PCT_USAGE)	Paging file usage (%). <sup>#</sup>	--	float	No	--	--
% Usage Peak (PCT_USAGE_PEAK)	Peak paging file usage (%). <sup>#</sup>	--	float	No	--	--

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
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 ( $T_1$ ) - RECORD_ TIME ( $T_0$ )
Record Time (RECORD_TIME)	Time at which the record was created.	--	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record name. Always PAGF.	--	char (8)	No	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

# Physical Disk Overview (PI\_PHYD)

---

## 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
Over 10 Sec Collection Time	No	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

## 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

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	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 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_READ)	Average number of bytes transferred from the disk during read operations (bytes/operation).	AVG	float	No	--	--
Avg Disk Bytes/Write (AVG_DISK_BYTES_PER_WRITE)	Average number of bytes transferred to the disk during write operations (bytes/operation).	AVG	float	No	--	--
Avg Disk Bytes/Xfer (AVG_DISK_BYTES_PER_TRANSFER)	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_DISK_QUEUE_LENGTH)	Average number of write and read requests that entered the disk's queue.	AVG	float	No	--	--
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. <sup>#</sup>	AVG	ulong	No	--	--
Disk Bytes/sec (DISK_BYTES_PER_SEC)	Speed at which data was transferred between disks during write or read	AVG	float	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Disk Bytes/sec (DISK_BYTES_PER_SEC)	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	--	--
Disk Write Bytes/sec (DISK_WRITE_BYTES_PER_SEC)	Speed at which data was transferred to the disk during write operation (bytes/second).	AVG	float	No	--	--
Disk Writes/sec (DISK_WRITES_PER_SEC)	Disk write processing speed (writes/second).	AVG	float	No	--	--
Disk Xfers/sec (DISK_TRANSFERS_PER_SEC)	Disk read and write processing speed (transfers/second).	AVG	float	No	--	--
ID (INSTANCE)	Physical disk number.	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 ( $T_1$ ) - RECORD_ TIME ( $T_0$ )
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 ( $T_1$ ) - RECORD_ TIME ( $T_0$ )
Record Time (RECORD_TIME)	Time at which the record was created.	COPY	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record name. Always PHYD.	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	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

## Process Detail (PD)

---

### 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
Over 10 Sec Collection Time	No	No

Item	Default value	Modifiable
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

## ODBC key fields

- PD\_INSTANCE
- PD\_ID\_PROCESS

## Lifetime

From process execution until termination

## Record size

- Fixed portion: 681 bytes
- Variable portion: 537 bytes

## Fields

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
CPU % (PCT_PROCESSOR_TIME)	Percentage of the elapsed processor time used by processes (%). In a multi-processor environment, usage is displayed, with <i>number of processors</i> × 100% as the maximum value. However, the maximum value might be exceeded, depending on the collection timing.	--	float	No	--	--
Creating Process ID (PROCESS_ID)	Process ID of the process that activated this process.#	--	ulong	No	--	--
Elapsed Time (ELAPSED_TIME)	Total elapsed time for process execution (seconds).#	--	ulong	No	--	--
Group (GROUP_NAME)	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, for example). 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 (36)	No	--	--
Handle Count (HANDLE_COUNT)	Number of handles kept open by the process.#	--	ulong	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
IO Data Bytes/sec (IO_DATA_BYTES_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_OPERATIONS_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_BYTES_PER_SEC)	Rate at which data was manipulated by operations other than read or write operations (control functions, for example) in all I/O operations generated by processes (bytes/second).	--	float	No	--	--
IO Other Operations/sec (IO_OTHER_OPERATIONS_PER_SEC)	Number of operations other than read or write operations (control functions, for example) in all I/O operations generated by processes (operations/second).	--	float	No	--	--
IO Read Bytes/sec (IO_READ_BYTES_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_OPERATIONS_PER_SEC)	Number of read operations in all I/O operations generated by processes (operations/second).	--	float	No	--	--
IO Write Bytes/sec (IO_WRITE_BYTES_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_OPERATIONS_PER_SEC)	Number of write operations in all I/O operations generated by processes (operations/second).	--	float	No	--	--
Interval (INTERVAL)	Always 0.	--	ulong	No	--	--
PID (ID_PROCESS)	Process ID. Unique identifier of the executing process.	--	ulong	No	--	--
Page Faults/sec (PAGE_FAULTS_PER_SEC)	Rate at which page faults occurred inside the process (faults/second).	--	float	No	--	--
Page File Kbytes (PAGE_FILE_BYTES)	Size of the virtual memory area used by the process as paging files (KB).#	--	double	No	--	--
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	--	ulong	No	--	--



PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Priority Base (PRIORITY_BASE)	- 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 % (PCT_PRIVILEGED_TIME)	Percentage of the elapsed time the process used the processor in the privileged mode (%). In a multi-processor environment, usage is displayed with <i>number of processors</i> × 100% as the maximum value. However, the maximum value might be exceeded, depending on the collection timing.	--	float	No	--	--
Program (INSTANCE)	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 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 (36)	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 <i>number of processors</i> × 100% as the maximum value. However, the maximum value might be exceeded, depending on the collection timing.	--	float	No	--	--
Virtual Env ID (VIRTUAL_ENV_ID)	ID of the virtualized environment created by the virtualized system provided by the OS	--	string (65)	No	2012	--
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	--	--
Working Set Kbytes (WORKING_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	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
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). <sup>#</sup>	--	double	No	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

## Process Detail Interval (PD\_PDI)

---

### 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
Over 10 Sec Collection Time	No	No

Item	Default value	Modifiable
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

## 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 name)	Description	Smry	Format	Delta	Not sprtd on	Data source
CPU % (PCT_PROCESSOR_TIME)	Percentage of the processor time used by the process (%). In a multi-processor environment, usage is displayed, with <i>number of processors</i> × 100% as the maximum value. However, the maximum value might be exceeded, depending on the collection timing.	--	float	No	--	--
Creating Process ID (PROCESS_ID)	Process ID of the process that activated this process.#	--	ulong	No	--	--
Elapsed Time (ELAPSED_TIME)	Total elapsed time for process execution (seconds).#	--	ulong	No	--	--
Group (GROUP_NAME)	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, for example). 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 (36)	No	--	--
Handle Count (HANDLE_COUNT)	Number of handles kept open by the process.#	--	ulong	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
IO Data Bytes/sec (IO_DATA_BYTES_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_OPERATIONS_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_BYTES_PER_SEC)	Rate at which data was manipulated by operations other than read or write operations (control functions, for example) in all I/O operations generated by the process (bytes/second).	--	float	No	--	--
IO Other Operations/sec (IO_OTHER_OPERATIONS_PER_SEC)	Number of operations other than read or write operations (control functions, for example) in all I/O operations generated by the process (operations/second).	--	float	No	--	--
IO Read Bytes/sec (IO_READ_BYTES_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_OPERATIONS_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_BYTES_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_OPERATIONS_PER_SEC)	Number of write operations in all I/O operations generated by the process (operations/second).	--	float	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 ( $T_1$ ) - RECORD_TIME ( $T_0$ )
PID (ID_PROCESS)	Process ID. Unique identifier of the executing process.	--	ulong	No	--	--
Page Faults/sec (PAGE_FAULTS_PER_SEC)	Rate at which page faults occurred inside the process (faults/second).	--	float	No	--	--
Page File Kbytes (PAGE_FILE_BYTES)	Size of the virtual memory area used by the process as paging files (KB).#	--	double	No	--	--
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	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
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 % (PCT_PRIVILEGED_TIME)	Percentage of the time the process used the processor in the privileged mode (%). In a multi-processor environment, usage is displayed, with <i>number of processors</i> × 100% as the maximum value. However, the maximum value might be exceeded, depending on the collection timing.	--	float	No	--	--
Program (INSTANCE)	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 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_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 (36)	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 <i>number of processors</i> × 100% as the maximum value. However, the maximum value might be exceeded, depending on the collection timing.	--	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	--	--
Working Set Kbytes (WORKING_SET)	Size of the memory used by processes (which is called a working set and indicates either the total memory size or	--	double	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Working Set Kbytes (WORKING_SET)	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	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

# Process End Detail (PD\_PEND)

## 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.
- If the startup type of the Windows Management Instrumentation service (service name: Winmgmt) that provides system management information for the OS is set to Disabled, this record cannot be collected correctly. If the startup type of the Windows Management Instrumentation service is set to Disabled while PFM - Agent for Platform is running, change the startup type to a value other than Disabled, and then restart PFM - Agent for Platform.

## 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
Over 10 Sec Collection Time	No	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

## 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

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
CPU % (PROCESSOR_PERCENT)	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_TIME) ÷ (EXIT_TIME - CREATION_TIME)
Creation Time (CREATION_TIME)	Time at which the process was created.	--	time_t	No	--	--
Elapsed Time (ELAPSED_TIME)	Total elapsed time for process execution (seconds).	--	ulong	No	--	EXIT_TIME - CREATION_TIME
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 (INTERVAL)	Always 0.	--	ulong	No	--	--
Kernel Time (KERNEL_TIME)	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	--	--
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)

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
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_TI ME + 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_TI ME / (EXIT_TI ME - CREATIO N_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	--	ReturnValu e ÷ 1KB
Working Set Min Kbytes (WORKING_SET_MIN)	Minimum working set size in the process (KB).	--	double	No	--	ReturnValu e ÷ 1KB

Legend:

Smry: Summary

Not sprtd on: Not supported on

# Processor Overview (PI\_PCSR)

## 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)
- This record cannot be collected when the startup type of the Windows Management Instrumentation service (service name: WinMgmt), which provides OS system management information, is set to `Disable`.
- When the Processor object is used, up to 64 pieces of processor information can be collected.

## Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset <sup>#</sup>	0	Yes
Log	No	Yes
LOGIF	Blank	Yes
Over 10 Sec Collection Time	No	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

## ODBC key fields

PI\_PCSR\_INSTANCE

## Lifetime

None

## Record size

- Fixed portion: 681 bytes
- Variable portion: 532 bytes

## Fields

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
% C1 Time (PCT_C1_TIME)	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_TIME)	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_TIME)	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	--	--
% DPC Time (PCT_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 (%).	%	float	No	--	--
% Idle Time (PCT_IDLE_TIME)	Percentage of time the processor was idle (%).	%	float	No	--	--
% Interrupt Time (PCT_INTERRUPT_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_BYPASSES_PER_SEC )	Rate at which the kernel APC (Asynchronous Procedure Call) interrupts were bypassed at the processor (bypasses/second).	AVG	float	No	2012, 2016, 2019	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
C1 Trans/sec (PCT_C1_TRANSITIONS_P ER_SEC)	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	--	--
C2 Trans/sec (PCT_C2_TRANSITIONS_P ER_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_P ER_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	2012, 2016, 2019	--
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_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 (interrupts/second).	AVG	float	No	--	--
Instance (INSTANCE)	Processor instance name. Shown as a number that begins at 0.	COPY	string (256)	No	--	--

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
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	--	--
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 (T <sub>1</sub> ) - RECORD_TIME (T <sub>0</sub> )
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 (T <sub>1</sub> ) - RECORD_TIME (T <sub>0</sub> )
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	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

# Server Work Queues Overview (PI\_SVRQ)

## 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
Over 10 Sec Collection Time	No	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

## ODBC key fields

PI\_SVRQ\_INSTANCE

## Lifetime

None

## Record size

- Fixed portion: 681 bytes
- Variable portion: 532 bytes

## Fields

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Active Threads (ACTIVE_THREADS)	Number of threads in which the processor was processing requests from server clients.	AVG	ulong	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Active Threads (ACTIVE_THREADS)	The system tries to minimize this value to minimize unnecessary context switching.#	AVG	ulong	No	--	--
Available Threads (AVAILABLE_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 (AVAILABLE_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	--	--
Borrowed Work Items (BORROWED_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_RECEIVED_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_TRANSFERRED_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_BLOCKS_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	--	--
Current Clients (CURRENT_CLIENTS)	Number of clients processed by the processor. The server dynamically allocates the client load among all servers within the system.	AVG	ulong	No	--	--



PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Current Clients (CURRENT_CLIENTS)	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 (T <sub>1</sub> ) - RECORD_ TIME (T <sub>0</sub> )
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 (T <sub>1</sub> ) - RECORD_ TIME (T <sub>0</sub> )
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	--	--
Read Bytes/sec (READ_BYTES_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_OPERATIONS_PER _SEC)	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_TIME)	Time at which the record was created.	COPY	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record name. Always SVRQ.	COPY	char (8)	No	--	--
Total Bytes/sec (TOTAL_BYTES_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_OPERATIONS_P E R_SEC)	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	Smry	Format	Delta	Not sprtd on	Data source
Work Item Shortages (WORK_ITEM_SHORTAGES)	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. 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. The value in this field is always 0 if Blocking Queue is set in the Instance field.#	AVG	ulong	No	--	--
Write Bytes/sec (WRITE_BYTES_PER_SEC)	Speed at which data was written to files by the server on behalf of clients, by using the processor (bytes/second).	AVG	float	No	--	--
Write Ops/sec (WRITE_OPERATIONS_PER_SEC)	Number of write operations in which the server used the processor to 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	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

# Service Process Detail (PD\_SVC)

## 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.

### Note:

Information regarding services running in a virtualized environment is not 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
Over 10 Sec Collection Time	No	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

## 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

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Accepted Controls (ACCEPTED_CONTROLS)	Control codes received by the service.	--	string (128)	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Accepted Controls (ACCEPTED_CONTROLS)	The values in this field are all or some of the following: PAUSE_CONTINUE: The stop is temporary, and a restart is possible. SHUTDOWN: An OS shutdown is reported to the service. STOP: Stopping is possible. The following values are listed in data model version 4.1 or later: PARAMCHANGE: The beginning parameter can be reread without a restart. NETBINDCHANGE: The bind change can be accepted without restarting from the network. HARDWAREPROFILECHANGE: The service is notified when the hardware profile is changed. POWEREVENT: The service is notified when the state of the OS power supply is changed. SESSIONCHANGE: The service is notified when the state of the OS session is changed.	--	string (128)	No	--	--
Checkpoint (CHECKPOINT)	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 (256)	No	--	--
Image Path (IMAGE_PATH)	Fully qualified path to the service's binary file.	--	string (1,024)	No	--	--
Interval (INTERVAL)	Always 0.	--	ulong	No	--	--
Record Time (RECORD_TIME)	Time at which the record was created.	--	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record name. Always SVC.	--	char (8)	No	--	--
Service Exit Code (SERVICE_EXIT_CODE)	Exit code unique to the service.	--	long	No	--	--
Service Name (SERVICE_NAME)	Service name used by the service control manager database.	--	string (256)	No	--	--
Service Type (TYPE)	One of the following two service types: - WIN32_OWN_PROCESS: The service application runs inside a process that is exclusively for the application. - WIN32_SHARE_PROCESS: The service application shares a single process with other services.	--	string (64)	No	--	--

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Service Type (TYPE)	To indicate that the service process is interactive with the desktop, the following type is also listed: - INTERACTIVE_PROCESS	--	string (64)	No	--	--
State (STATE)	Service state during data collection. One of the following values is used for this field: - CONTINUE_PENDING: Starting state with the Resume button after pausing. - PAUSE_PENDING: Pausing state. - PAUSED: Paused state. - RUNNING: Running state. - START_PENDING: Starting state. - STOP_PENDING: Stopping state. - STOPPED: Stopped state.	--	string (31)	No	--	--
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_EXIT_CODE)	Win32 exit code.	--	long	No	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

# System Overview (PI)

---

## 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 and Processor Information object

The Processor object and Processor Information 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, the values for the following fields cannot be collected correctly if the startup type of the Windows Management Instrumentation service (service name: WinMgmt), which provides OS system management information, is set to `Disable`:
  - % Total DPC Time (PCT\_TOTAL\_DPC\_TIME)

- % Total Interrupt Time (PCT\_TOTAL\_INTERRUPT\_TIME)
- Active CPUs (NUMBER\_OF\_ACTIVE\_CPUS)
- CPU % (PCT\_TOTAL\_PROCESSOR\_TIME)
- Privileged CPU % (PCT\_TOTAL\_PRIVILEGED\_TIME)
- System Type (SYSTEM\_TYPE)
- Total DPC Rate (TOTAL\_DPC\_RATE)
- Total DPCs Queued/sec (TOTAL\_DPCS\_QUEUED\_PER\_SEC)
- Total Interrupts/sec (TOTAL\_INTERRUPTS\_PER\_SEC)
- User CPU % (PCT\_USER\_TIME)
- 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)
- When the Processor object is used, up to 64 pieces of processor information can be collected.

## Default values and values that can be specified

Item	Default value	Modifiable
Collection Interval	60	Yes
Collection Offset <sup>#</sup>	0	Yes
Log	Yes	Yes
LOGIF	Blank	Yes
Over 10 Sec Collection Time	No	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

## ODBC key fields

None

## Lifetime

None

## Record size

- Fixed portion: 3,235 bytes
- Variable portion: 0 bytes

## Fields

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
% Committed Bytes in Use (PCT_COMMITTED_BYTES _IN_USE)	Virtual memory usage (%). Amount of Committed Mbytes as a percentage of Commit Limit Mbytes. <sup>#</sup>	%	float	No	--	--
% Physical Mem (PCT_PHYSICAL_MEMOR Y)	Physical memory usage (%). <sup>#</sup>	%	double	No	--	$100 \times \frac{\text{USED\_PHYSICAL\_MEMORY\_BYTES}}{\text{TOTAL\_PHYSICAL\_MEMORY\_KBYTES}}$
% Registry Quota in Use (PCT_REGISTRY_QUOTA_I N_USE)	Percentage of registry quotas available to processors that the system is using (%). <sup>#</sup>	%	float	No	--	--



PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
% 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_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 (%). The maximum value is 100 even in a multi-processor environment.	%	float	No	--	--
Active CPUs (NUMBER_OF_ACTIVE_CPUS)	Number of processors.	COPY	ulong	No	--	--
Alignment Fixups/sec (ALIGNMENT_FIXUPS_PER_SEC)	Rate at which the system fixed alignment faults in processors (fixups/second).	AVG	float	No	--	--
Async Copy Reads/sec (ASYNC_COPY_READS_PER_SEC)	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_DATA_MAPS_PER_SEC)	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_SEC)	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_SEC)	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	--	--
Available Mbytes (AVAILABLE_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	AVG	double	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Available Mbytes (AVAILABLE_BYTES)	Mem Mbytes field, it indicates that excessive paging is occurring.#	AVG	double	No	--	--
Blocking Reqs Rejected (BLOCKING_REQUESTS_R EJECTED)	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_RECEIVED_PER_S EC)	Rate at which the server received data from the network (bytes/second).	AVG	float	No	--	--
Bytes Total/sec (BYTES_TOTAL_PER_SEC)	Rate at which the server exchanged data with the network (bytes/second).	AVG	double	No	--	--
Bytes Xmitd/sec (BYTES_TRANSMITTED_P ER_SEC)	Rate at which the server sent data to the network (bytes/second).	AVG	float	No	--	--
CPU % (PCT_TOTAL_PROCESSOR _TIME)	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	--	--
Cache Faults/sec (CACHE_FAULTS_PER_SE C)	Rate at which page faults occurred in the file system cache (faults/second).	AVG	float	No	--	--
Cache Mbytes (CACHE_BYTES)	Size being used inside the file system cache (MB).#	AVG	double	No	--	--
Cache Mbytes Peak (CACHE_BYTES_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 (COMMITTED_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_LAN_MANA GER_20)	Number of times connection was made with a LAN Manager 2.0 server (including an LMX server).#	AVG	ulong	No	--	--

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Conns LAN Manager 2.1 (CONNECTS_LAN_MANAGER_21)	Number of times connection was made with a LAN Manager 2.1 server (including an LMX server).#	AVG	ulong	No	--	--
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_BLOCKS_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_SWITCHES_PER_SEC)	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_READS_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 (CURRENT_COMMANDS)	Number of requests to the Redirector that have entered the queue, waiting to be processed.#	AVG	ulong	No	--	--
Current Processes (CURRENT_PROCESSES)	Number of processes executed by processors.#	AVG	ulong	No	--	--
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	AVG	float	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Demand Zero Faults/sec (DEMAND_ZERO_FAULTS _PER_SEC)	zeros necessary for resolving page faults (faults/second).	AVG	float	No	--	--
Errors Access Permissions (ERRORS_ACCESS_PERMI SSIONS)	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	--	--
Errors Granted Access (ERRORS_GRANTED_ACC ESS)	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_POSSIB LES_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	--	--
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_P ER_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_OPERATI ONS_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	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
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	--	--
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_PER_SEC)	Rate at which operations for writing data to the file system occurred in processors (operations/second).	AVG	float	No	--	--
Files Open (FILES_OPEN)	Number of files currently open on the server.#	AVG	ulong	No	--	--
Files Opened Total (FILES_OPENED_TOTAL)	Number of times the server succeeded in opening files on behalf of clients following the OS startup.#	AVG	ulong	No	--	--
Floating Emulations/sec (FLOATING_EMULATIONS_PER_SEC)	Rate at which the system executed floating point emulations in processors (executions/second).	AVG	float	No	--	--
Free System Page Table Entries (FREE_SYSTEM_PAGE_TABLE_ENTRIES)	Number of page table entries not used by the system.#	AVG	ulong	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 ( $T_1$ ) - RECORD_TIME ( $T_0$ )
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_SEC)	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_TOTAL)	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	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
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_HITS_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 (MUTEXES)	Number of active mutexes (which control thread execution to enable execution of a single thread).#	AVG	ulong	No	--	--
Net Errors/sec (NETWORK_ERRORS_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_COMMITTED_BYTES)	Unused size in the virtual memory area (MB).#	AVG	double	No	--	COMMIT_LIMIT - COMMITTED_BYTES
Page Faults/sec (PAGE_FAULTS_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_WRITES_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_INPUT_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_OUTPUT_PER_SEC)	The rate at which pages were being paged out when a page fault occurred (pages/second).	AVG	float	No	--	--
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_HITS_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	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
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_RECEIVED_PER_SEC)	Rate at which the Redirector received packets (also called server message blocks [SMB]) (packets/second).	AVG	float	No	--	--
Pkts Xmitd/sec (PACKETS_TRANSMITTED_PER_SEC)	Rate at which the Redirector sent packets (also called server message blocks [SMB]) (packets/second).	AVG	float	No	--	--
Pkts/sec (PACKETS_PER_SEC)	Rate at which the Redirector processed packets (also called server message blocks [SMB]) (packets/second).	AVG	float	No	--	--
Pool Nonpaged Allocs (POOL_NONPAGED_ALLOCS)	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 (POOL_NONPAGED_BYTES)	Size of the non-pageable physical memory area allocated by a system component when it executed a task (bytes). 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 (POOL_NONPAGED_FAILURES)	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 (POOL_NONPAGED_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	--	--
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 (bytes).#	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	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
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	--	--
Privileged CPU % (PCT_TOTAL_PRIVILEGED_TIME)	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 (PROCESSES)	Number of active processes held in the memory.#	AVG	ulong	No	--	--
Processor Queue Length (PROCESSOR_QUEUE_LENGTH)	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. If you want to check the load for each processor among multiple processors, divide the number of threads by the number of processors.#	AVG	ulong	No	--	--
Read Aheads/sec (READ_AHEADS_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_BYTES_CACHE_PER_SEC)	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_BYTES_NETWORK_PER_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	--	--
Read Bytes Nonpaging/sec (READ_BYTES_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_BYTES_PAGING_PER_SEC)	Rate at which the Redirector read data during applications' page faults (bytes/second).	AVG	float	No	--	--
Read Ops Random/sec (READ_OPERATIONS_RANDOM_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	--	--



PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Read Pkts Small/sec (READ_PACKETS_SMALL_ PER_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_PACKETS_PER_SE C)	Rate at which read packets issued data-reading requests to the network (packets/second).	AVG	float	No	--	--
Reads Denied/sec (READS_DENIED_PER_SE C)	Rate at which the server could not accept read requests (requests/second).	AVG	float	No	--	--
Reads Large/sec (READS_LARGE_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_TIME)	Time at which the record was created.	COPY	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record name. Always PI.	COPY	char (8)	No	--	--
Redir Bytes Rcvd/sec (REDIR_BYTES_RECEIVE D_PER_SEC)	Rate at which the Redirector received data from the network (bytes/second).	AVG	float	No	--	--
Redir Bytes Total/sec (REDIR_BYTES_TOTAL_P ER_SEC)	Rate at which the Redirector exchanged data from the network (bytes/second).	AVG	float	No	--	--
Redir Bytes Xmitd/sec (REDIR_BYTES_TRANSMI TTED_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_OPE RATIONS_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_SERVER_SESSION S)	Number of security object sessions managed by the Redirector following the OS startup.#	AVG	ulong	No	--	--
Sections (SECTIONS)	Number of active sections (virtual memory areas created by processes for storing data).#	AVG	ulong	No	--	--
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	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Server Pool Nonpaged Bytes (SERVER_POOL_NONPAGE D_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_B 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_HUN G)	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	--	--
Sessions Errored Out (SESSIONS_ERRORED_OU T)	Number of sessions that were terminated by unexpected errors, automatic disconnection time-outs, or normally connected sessions.#	AVG	ulong	No	--	--
Sessions Forced Off (SESSIONS_FORCED_OFF)	Number of sessions that were forcibly logged off following the OS startup.#	AVG	ulong	No	--	--
Sessions Logged Off (SESSIONS_LOGGED_OFF)	Number of sessions that were terminated normally following the OS startup.#	AVG	ulong	No	--	--
Sessions Timed Out (SESSIONS_TIMED_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	--	--
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	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Sync Pin Reads/sec (SYNC_PIN_READS_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_CACHE_RESIDENT_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_CALLS_PER_SECOND)	Rate at which a process executed by a processor called a system service routine (calls/second).	AVG	float	No	--	--
System Code Resident Bytes (SYSTEM_CODE_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_CODE_TOTAL_BYTES)	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_DRIVER_RESIDENT_BYTES)	Size of pageable physical memory used by device drivers (bytes).#	AVG	double	No	--	--
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	2012, 2016, 2019	--
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	2012, 2016, 2019	--
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	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Total DPCs Queued/sec (TOTAL_DPCS_QUEUED_P ER_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_INTERRUPTS_P ER_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	--	--
Total Physical Mem Mbytes (TOTAL_PHYSICAL_M EMORY_KBYTES)	Total size of the physical memory area (MB).#	COPY	double	No	--	ReturnValu e ÷ 1MB
Trans Pages RePurposed/sec (TRANS_PAGES_REPURPO SED_PER_SEC)	Rate at which transfer cache pages remaining inside the cache were reused for other purposes (pages/second).	AVG	double	No	--	--
Transition Faults/sec (TRANSITION_FAULTS_P ER_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).	AVG	float	No	--	--
Used Physical Mem Mbytes (USED_PHYSICAL_M EMORY_BYTES)	Size of physical memory area used (MB).#	AVG	double	No	--	TOTAL_P HYSICAL _MEMO RY_ KBY TES - AVAIL AB LE_ BY TE S
User CPU % (PCT_TOTAL_USER_T IME)	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_SHORTA GES)	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_BYTES_CACH E_PER_SEC)	Rate at which applications used the Redirector to write data into the file system cache (bytes/second).	AVG	float	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Write Bytes Net/sec (WRITE_BYTES_NETWORK_PER_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	--	--
Write Bytes Nonpaging/sec (WRITE_BYTES_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_BYTES_PAGING_PER_SEC)	Rate at which the Redirector wrote data during applications' page faults (bytes/second).	AVG	float	No	--	--
Write Copies/sec (WRITE_COPIES_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_OPERATIONS_RANDOM_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_PACKETS_SMALL_PER_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_PACKETS_PER_SEC)	Rate at which write packets issued data-writing requests to the network (packets/second).	AVG	float	No	--	--
Writes Denied/sec (WRITES_DENIED_PER_SEC)	Rate at which the server could not accept write requests (rejections/second).	AVG	float	No	--	--
Writes Large/sec (WRITES_LARGE_PER_SEC)	Rate at which applications wrote data that was more than twice the server's adjusted buffer size (writes/second).	AVG	float	No	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

# TCP Overview (PI\_TCP)

## 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 <sup>#</sup>	0	Yes
Log	No	Yes
LOGIF	Blank	Yes
Over 10 Sec Collection Time	No	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

## ODBC key fields

None

## Lifetime

None

## Record size

- Fixed portion: 825 bytes
- Variable portion: 0 bytes

## Fields

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Conn Failures (CONNECTION_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. <sup>#</sup>	AVG	ulong	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Conns Active (CONNECTIONS_ACTIVE)	Number of times the TCP connection state transitioned directly from CLOSED to SYN-SENT following the OS startup.#	AVG	ulong	No	--	--
Conns Established (CONNECTIONS_ESTABLISHED)	Total number of TCP connections that were either in the ESTABLISHED or CLOSE-WAIT state.#	AVG	ulong	No	--	--
Conns Passive (CONNECTIONS_PASSIVE)	Number of times the TCP connection state transitioned directly from LISTEN to SYN-RCVD following the OS startup.#	AVG	ulong	No	--	--
Conns Reset (CONNECTIONS_RESET)	Number of times the TCP connection state transitioned directly from ESTABLISHED or CLOSE-WAIT to CLOSED following the OS startup.#	AVG	ulong	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 (T <sub>1</sub> ) - RECORD_ TIME (T <sub>0</sub> )
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	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

# TCP Version 6 Overview (PI\_TCP6)

## 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 <sup>#</sup>	0	Yes
Log	No	Yes
LOGIF	Blank	Yes
Over 10 Sec Collection Time	No	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

## ODBC key fields

None

## Lifetime

None

## Record size

- Fixed portion: 825 bytes
- Variable portion: 0 bytes

## Fields

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Conn Failures (CONNECTION_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. <sup>#</sup>	AVG	ulong	No	--	--



PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Conns Active (CONNECTIONS_ACTIVE)	Number of times the TCP connection state transitioned directly from CLOSED to SYN-SENT following the OS startup <sup>#</sup>	AVG	ulong	No	--	--
Conns Established (CONNECTIONS_ESTABLISHED)	Total number of TCP connections that were either in the ESTABLISHED or CLOSE-WAIT state <sup>#</sup>	AVG	ulong	No	--	--
Conns Passive (CONNECTIONS_PASSIVE)	Number of times the TCP connection state transitioned directly from LISTEN to SYN-RCVD following the OS startup <sup>#</sup>	AVG	ulong	No	--	--
Conns Reset (CONNECTIONS_RESET)	Number of times the TCP connection state transitioned directly from ESTABLISHED or CLOSE-WAIT to CLOSED following the OS startup <sup>#</sup>	AVG	ulong	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 ( $T_1$ ) - RECORD_ TIME ( $T_0$ )
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	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

# UDP Overview (PI\_UDP)

## 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 <sup>#</sup>	0	Yes
Log	No	Yes
LOGIF	Blank	Yes
Over 10 Sec Collection Time	No	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

## ODBC key fields

None

## Lifetime

None

## Record size

- Fixed portion: 761 bytes
- Variable portion: 0 bytes

## Fields

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	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	--	--
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. <sup>#</sup>	AVG	ulong	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
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 ( $T_1$ ) - RECORD_ TIME ( $T_0$ )
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	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

# UDP Version 6 Overview (PI\_UDP6)

## 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 <sup>#</sup>	0	Yes
Log	No	Yes
LOGIF	Blank	Yes
Over 10 Sec Collection Time	No	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

## ODBC key fields

None

## Lifetime

None

## Record size

- Fixed portion: 761 bytes
- Variable portion: 0 bytes

## Fields

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	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	--	--
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 <sup>#</sup>	AVG	ulong	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
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 ( $T_1$ ) - RECORD_ TIME ( $T_0$ )
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	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

## User Data Detail (PD\_UPD)

---

### 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 <sup>#</sup>	0	Yes
Log	No	Yes
LOGIF	Blank	Yes
Over 10 Sec Collection Time	Yes	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

### 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 name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Record Type (INPUT_RECORD_TYPE)	Record type (UPD)	--	char (8)	No	--	--
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	--	time_t	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
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 String 6 (S6)	Character-string 32 characters in length	--	string (32)	No	--	--
User String 7 (S7)	Character-string 64 characters in length	--	string (64)	No	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

## User Data Detail - Extended (PD\_UPDB)

### 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
Over 10 Sec Collection Time	Yes	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

### 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 name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Record Type (INPUT_RECORD_TYPE)	Record type (UPDB)	--	char (8)	No	--	--
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	--	time_t	No	--	--



PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
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 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	--	--
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	--	--

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
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	--	--
User String 14 (S14)	Character-string 64 characters in length	--	string (64)	No	--	--
User String 15 (S15)	Character-string 64 characters in length	--	string (64)	No	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

# 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
Over 10 Sec Collection Time	Yes	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

## 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 name)	Description	Smry	Format	Delta	Not sprtd on	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	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
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	--	--
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 (16)	No	--	--
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	--	--

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
User String 5 (S5)	Character-string 32 characters in length	COPY	string (32)	No	--	--
User String 6 (S6)	Character-string 32 characters in length	COPY	string (32)	No	--	--
User String 7 (S7)	Character-string 64 characters in length	COPY	string (64)	No	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

# User Data Interval - Expanded 1 (PI\_XUI1)

## Function

User Data Interval - Expanded 1 (PI\_XUI1) 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 - Extended (PI\_UPIB) 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
Over 10 Sec Collection Time	Yes	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

You can specify a value in the range from 0 to 32,767 seconds (which must not exceed the range specified by Collection Interval). This item is used to distribute the processing load resulting from the collection of multiple data items at a time. Note that the recorded data collection duration is the same as the value set for Collection Interval, regardless of the value set for Collection Offset.

## ODBC key fields

- PI\_XUI1\_TT
- PI\_XUI1\_TS\_KEY
- PI\_XUI1\_TD\_KEY

## Lifetime

From the execution of the `jpcuser` command until the execution of the next `jpcuser` command

## Record size

- Fixed portion: 681 bytes
- Variable portion: 1,148 bytes

## Fields

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Record Type (INPUT_RECORD_TYPE)	Record type (XUI1)	COPY	char (8)	No	--	--
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	COPY	time_t	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Interval (INTERVAL)	Interval for which the record was stored (in seconds). 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 Float 01 (F01)	Floating-point value	AVG	double	No	--	--
User Float 02 (F02)	Floating-point value	AVG	double	No	--	--
User Float 03 (F03)	Floating-point value	AVG	double	No	--	--
User Float 04 (F04)	Floating-point value	AVG	double	No	--	--
User Float 05 (F05)	Floating-point value	AVG	double	No	--	--
User Float 06 (F06)	Floating-point value	AVG	double	No	--	--
User Float 07 (F07)	Floating-point value	AVG	double	No	--	--
User Float 08 (F08)	Floating-point value	AVG	double	No	--	--
User Float 09 (F09)	Floating-point value	AVG	double	No	--	--
User Float 10 (F10)	Floating-point value	AVG	double	No	--	--
User Float 11 (F11)	Floating-point value	AVG	double	No	--	--
User Float 12 (F12)	Floating-point value	AVG	double	No	--	--
User Float 13 (F13)	Floating-point value	AVG	double	No	--	--
User Float 14 (F14)	Floating-point value	AVG	double	No	--	--
User Float 15 (F15)	Floating-point value	AVG	double	No	--	--
User Float 16 (F16)	Floating-point value	AVG	double	No	--	--
User Float 17 (F17)	Floating-point value	AVG	double	No	--	--
User Float 18 (F18)	Floating-point value	AVG	double	No	--	--
User Float 19 (F19)	Floating-point value	AVG	double	No	--	--
User Float 20 (F20)	Floating-point value	AVG	double	No	--	--
User Float 21 (F21)	Floating-point value	AVG	double	No	--	--
User Float 22 (F22)	Floating-point value	AVG	double	No	--	--
User Float 23 (F23)	Floating-point value	AVG	double	No	--	--
User Float 24 (F24)	Floating-point value	AVG	double	No	--	--
User Float 25 (F25)	Floating-point value	AVG	double	No	--	--
User Float 26 (F26)	Floating-point value	AVG	double	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
User Float 27 (F27)	Floating-point value	AVG	double	No	--	--
User Float 28 (F28)	Floating-point value	AVG	double	No	--	--
User Float 29 (F29)	Floating-point value	AVG	double	No	--	--
User Float 30 (F30)	Floating-point value	AVG	double	No	--	--
User Float Add 01 (F01_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Add 02 (F02_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Add 03 (F03_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Add 04 (F04_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Add 05 (F05_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Add 06 (F06_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Add 07 (F07_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Add 08 (F08_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Add 09 (F09_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Add 10 (F10_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Add 11 (F11_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Add 12 (F12_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Add 13 (F13_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Add 14 (F14_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--



PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
User Float Add 15 (F15_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Add 16 (F16_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Add 17 (F17_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Add 18 (F18_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Add 19 (F19_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Add 20 (F20_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Add 21 (F21_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Add 22 (F22_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Add 23 (F23_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Add 24 (F24_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Add 25 (F25_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Add 26 (F26_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Add 27 (F27_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Add 28 (F28_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Add 29 (F29_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--
User Float Add 30 (F30_A)	Accumulated floating-point value (This data is added when this data is summarized)	ADD	double	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
User Time 1 (T1)	Time value (Time is displayed at the local time of the PFM - Web Console)	COPY	time_t	No	--	--
User String 1 (S1)	Character-string 64 characters in length	COPY	string(64 )	No	--	--
User String 2 (S2)	Character-string 64 characters in length	COPY	string(64 )	No	--	--
User String 3 (S3)	Character-string 128 characters in length	COPY	string(128)	No	--	--

## User Data Interval - Expanded 2 (PI\_XUI2)

---

### Function

User Data Interval - Expanded 2 (PI\_XUI2) 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 - Extended (PI\_UPIB) 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
Over 10 Sec Collection Time	Yes	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

You can specify a value in the range from 0 to 32,767 seconds (which must not exceed the range specified by Collection Interval). This item is used to distribute the processing load resulting from the collection of multiple data items at a time. Note that the recorded data collection duration is the same as the value set for Collection Interval, regardless of the value set for Collection Offset.

### ODBC key fields

- PI\_XUI2\_TT
- PI\_XUI2\_TS\_KEY
- PI\_XUI2\_TD\_KEY

### Lifetime

From the execution of the `jpcuser` command until the execution of the next `jpcuser` command

### Record size

- Fixed portion: 681 bytes
- Variable portion: 1,148 bytes

### Fields

The value in the Record Type field is XUI2. The value in other fields is the same as that stored in the [PI\\_XUI1](#) record.

## User Data Interval - Expanded 3 (PI\_XUI3)

---

### Function

User Data Interval - Expanded 3 (PI\_XUI3) 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 - Extended (PI\_UPIB) 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
Over 10 Sec Collection Time	Yes	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

You can specify a value in the range from 0 to 32,767 seconds (which must not exceed the range specified by Collection Interval). This item is used to distribute the processing load resulting from the collection of multiple data items at a time. Note that the recorded data collection duration is the same as the value set for Collection Interval, regardless of the value set for Collection Offset.

### ODBC key fields

- PI\_XUI3\_TT
- PI\_XUI3\_TS\_KEY
- PI\_XUI3\_TD\_KEY

### Lifetime

From the execution of the `jpcuser` command until the execution of the next `jpcuser` command

### Record size

- Fixed portion: 681 bytes
- Variable portion: 1,148 bytes

### Fields

The value in the Record Type field is XUI3. The value in other fields is the same as that stored in the PI\_XUI1 record.

## User Data Interval - Expanded 4 (PI\_XUI4)

---

### Function

User Data Interval - Expanded 4 (PI\_XUI4) 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 - Extended (PI\_UPIB) 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
Over 10 Sec Collection Time	Yes	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

You can specify a value in the range from 0 to 32,767 seconds (which must not exceed the range specified by Collection Interval). This item is used to distribute the processing load resulting from the collection of multiple data items at a time. Note that the recorded data collection duration is the same as the value set for Collection Interval, regardless of the value set for Collection Offset.

### ODBC key fields

- PI\_XUI4\_TT
- PI\_XUI4\_TS\_KEY
- PI\_XUI4\_TD\_KEY

### Lifetime

From the execution of the `jpcuser` command until the execution of the next `jpcuser` command

### Record size

- Fixed portion: 681 bytes
- Variable portion: 1,148 bytes

### Fields

The value in the Record Type field is XUI4. The value in other fields is the same as that stored in the [PI\\_XUI1](#) record.

## User Data Interval - Expanded 5 (PI\_XUI5)

---

### Function

User Data Interval - Expanded 5 (PI\_XUI5) 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 - Extended (PI\_UPIB) 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
Over 10 Sec Collection Time	Yes	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

You can specify a value in the range from 0 to 32,767 seconds (which must not exceed the range specified by Collection Interval). This item is used to distribute the processing load resulting from the collection of multiple data items at a time. Note that the recorded data collection duration is the same as the value set for Collection Interval, regardless of the value set for Collection Offset.

### ODBC key fields

- PI\_XUI5\_TT
- PI\_XUI5\_TS\_KEY
- PI\_XUI5\_TD\_KEY

### Lifetime

From the execution of the `jpcuser` command until the execution of the next `jpcuser` command

### Record size

- Fixed portion: 681 bytes
- Variable portion: 1,148 bytes

### Fields

The value in the Record Type field is XUI5. The value in other fields is the same as that stored in the [PI\\_XUI1](#) record.

## 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
Over 10 Sec Collection Time	Yes	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

### 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 name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	COPY	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record type (UPIB)	COPY	char (8)	No	--	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
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	--	--
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	--	--



PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
User Unsigned Long Roll 4 (UL4_R)	Accumulated unsigned long value (This data is added when this data is summarized)	ADD	ulong	No	--	--
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	--	--
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	--	--

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
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	--	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

# 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:

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
Over 10 Sec Collection Time	No	No
Realtime Report Data Collection Mode	Reschedule	Yes

#

A value between 0 and 32,767 seconds can be specified (a 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 concentration of the processing workload. Note that the data collection duration to be recorded is the same as the Collection Interval, regardless of the value specified for Collection Offset.

## ODBC key fields

None

## Lifetime

None

## Record size

- Fixed portion: 921 bytes
- Variable portion: 0 bytes

## Fields

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Failed Queries/sec (FAILED_QUERIES_PER_SEC)	Rate at which the WINS server failed to receive queries (failures/second).	AVG	float	No	2012, 2016, 2019	--

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Failed Releases/sec (FAILED_RELEASES_PER_SEC)	Rate at which the WINS server failed to receive releases (failures/second).	AVG	float	No	2012, 2016, 2019	--
Group Conflicts/sec (GROUP_CONFLICTS_PER_SEC)	Rate at which the group registrations received by the WINS server conflicted with records inside the database (conflicts/second).	AVG	float	No	2012, 2016, 2019	--
Group Registrations/sec (GROUP_REGISTRATIONS_PER_SEC)	Rate at which the WINS server received group registrations (registrations/second).	AVG	float	No	2012, 2016, 2019	--
Group Renewals/sec (GROUP_RENEWALS_PER_SEC)	Rate at which the WINS server received group renewals (renewals/second).	AVG	float	No	2012, 2016, 2019	--
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	2012, 2016, 2019	RECORD_ TIME (T <sub>1</sub> ) - RECORD_ TIME (T <sub>0</sub> )
Queries/sec (QUERIES_PER_SEC)	Rate at which the WINS server received queries (queries/second).	AVG	float	No	2012, 2016, 2019	--
Record Time (RECORD_TIME)	Time at which the record was created.	COPY	time_t	No	2012, 2016, 2019	--
Record Type (INPUT_RECORD_TYPE)	Record name. Always WINS.	COPY	char (8)	No	2012, 2016, 2019	--
Releases/sec (RELEASES_PER_SEC)	Rate at which the WINS server received releases (releases/second).	AVG	float	No	2012, 2016, 2019	--
Successful Queries/sec (SUCCESSFUL_QUERIES_PER_SEC)	Rate at which the WINS server successfully received queries (queries/second).	AVG	float	No	2012, 2016, 2019	--
Successful Releases/sec (SUCCESSFUL_RELEASES_PER_SEC)	Rate at which the WINS server successfully received releases (releases/second).	AVG	float	No	2012, 2016, 2019	--
Total Conflicts/sec (TOTAL_NUMBER_OF_CONFLICTS_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	2012, 2016, 2019	--
Total Registrations/sec (TOTAL_NUMBER_OF_REGISTRATIONS_PER_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	2012, 2016, 2019	--

PFM-View name (PFM - Manager name)	Description	Smry	Format	Delta	Not sprtd on	Data source
Total Renewals/sec (TOTAL_NUMBER_OF_RENEWALS_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	2012, 2016, 2019	--
Unique Conflicts/sec (UNIQUE_CONFLICTS_PER_SEC)	Rate at which unique registrations and renewals received by the WINS server conflicted with records inside the database (conflicts/second).	AVG	float	No	2012, 2016, 2019	--
Unique Registrations/sec (UNIQUE_REGISTRATIONS_PER_SEC)	Rate at which the WINS server received unique registrations (registrations/second).	AVG	float	No	2012, 2016, 2019	--
Unique Renewals/sec (UNIQUE_RENEWALS_PER_SEC)	Rate at which the WINS server received unique renewals (renewals/second).	AVG	float	No	2012, 2016, 2019	--

Legend:

Smry: Summary

Not sprtd on: Not supported on

# Workgroup Summary (PI\_WGRP)

---

## 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 [6. 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.
- This record does not support collection in a logical host environment. Collect this record in a physical host environment.

## Default values and values that can be specified

Item	Default value	Modifiable
Log	No	Yes
LOGIF	Blank	Yes
Over 10 Sec Collection Time	Yes	No
Sync Collection With	Detail Records, PD	No
Realtime Report Data Collection Mode	Reschedule	Yes

## 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 name)	Description	Smry	Format	Delta	Not sprtd on	Data source
CPU % (PCT_PROCESSOR_TIME)	Percentage of the elapsed processor time used by workgroups (%). In a multi-processor environment, usage is displayed, with <i>number of processors</i> × 100% as the maximum value. However, the maximum value might be exceeded, depending on the collection timing.	%	double	No	--	PD record PCT_PRO CESSOR_ TIME field
Condition (CONDITION)	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	--	Workgroup name of the collection data addition utility
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 (36)	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_ COUNT field
IO Data Bytes/sec (IO_DATA_BYTES_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 _BYTES_ PER_SEC field
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 _OPERAT IONS_P ER_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, for example) in all I/O operations generated by workgroups (bytes/second).	AVG	double	No	--	PD record IO_OTHE R_BYTES _PER_SE C field
IO Other Operations/sec (IO_OTHER_OPERATIONS_PER_SEC)	Number of operations other than read or write operations (control functions, for example) in all I/O operations generated by workgroups (operations/second).	AVG	double	No	--	PD record IO_OTHE R_OPERA TIONS_P ER_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_ _

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
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	--	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
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 (T <sub>1</sub> ) - RECORD_TIME (T <sub>0</sub> )
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 (T <sub>1</sub> ) - RECORD_TIME (T <sub>0</sub> )
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



PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
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	--	_BYTES field
Privileged CPU % (PCT_PRIVILEGED_TIME)	Percentage of the elapsed time the workgroup used the processor in the privileged mode (%). In a multi-processor environment, usage is displayed with <i>number of processors</i> × 100% as the maximum value. However, the maximum value might be exceeded, depending on the collection timing.	%	double	No	--	PD record PCT_PRI VILEGED _TIME field
Process Count (PROCESS_COUNT)	Number of processes executed by workgroups.	HILO	ulong	No	--	--
Programs (PROGRAMS)	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 (36)	No	--	Program name of the collection data addition utility
Record Time (RECORD_TIME)	Time at which the record was created.	COPY	time_t	No	--	--
Record Type (INPUT_RECORD_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_ COUNT field
User CPU % (PCT_USER_TIME)	Amount of processor time used by workgroups in the user mode (%). In a multi-processor environment, usage is displayed with number of processors × 100% as the maximum value. However, the maximum value might be exceeded, depending on the collection timing.	%	double	No	--	PD record PCT_USE R_TIME field
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

PFM-View name (PFM - Manager name name)	Description	Smry	Format	Delta	Not sprtd on	Data source
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

# 9

## Commands

This chapter describes the syntax of the command provided by PFM - Agent for Platform.

## Command description format

---

This section describes the command descriptive format, including the command specification format and the notations used in explaining the command syntax.

### Command specification format

The command specification format is as follows:

$$\begin{array}{l} \text{jpcxxx} \quad [-\text{option-A} [\text{value-a} [, \text{value-b} [, \text{value-c} \dots]]]] \dots(1) \\ \quad \quad \quad [-\text{option-B} [\text{value-a} [, \text{value-b} [, \text{value-c} \dots]]]] \dots(1) \\ \quad \quad \quad [\text{any-name-X} [\text{any-name-Y} [\text{any-name-Z} \dots]]] \end{array} \left. \vphantom{\begin{array}{l} \text{jpcxxx} \\ \quad \quad \quad [-\text{option-B} \\ \quad \quad \quad [\text{any-name-X} \end{array}} \right\} \dots(2)$$

The items indicated by (1) and (2) are called *options* and *arguments*, respectively.

### Notations used in command syntax descriptions

The notations used in command syntax descriptions are as follows.

[ ] (square brackets)

Square brackets enclose items whose specification can be omitted (optional items).

## Format

```
jpcappcv [-n]
```

## Description

The `jpcappcv` command converts application definitions that were set in version 09-00 or earlier (settings for collecting information about the application operating status) to application definitions that will work in 10-00 and later versions (settings for collecting information about the operating status of processes).

## Execution permission

Users with Administrator permissions

## Storage folder

*installation-folder*\jplpc\agtt\agent\

## Arguments

**-n**

Specification of this option suppresses output of query messages that interrupt program execution, thereby eliminating the need for user response. Specify this option to execute the command non-interactively.

## Notes

- This command cannot be executed on a logical host.
- If the `-n` option is not specified, the command is executed interactively, in which case the user must enter responses to the query messages that are displayed on the screen in order for the conversion processing to be performed.
- When you execute this command, the settings are enabled automatically as soon as conversion occurs, so there is no need to restart the Agent Collector service.
- Although application definitions are created by converting earlier definitions to a format that is compatible with version 10-00 and later, the application definitions from version 09-00 or earlier are retained.
- If application definitions from version 10-00 or later already exist when this command is executed, the `KAVF11606-Q` message is output, requesting confirmation that you want to overwrite the existing settings. However, if the command is being executed in the non-interactive mode, this message will not be output, and the existing settings will be forcibly overwritten.
- The methods of collecting process information are different for the Application Summary (`PD_APP`) record, which is used to collect information about the application operating status, from the Application Process Detail (`PD_APPD`) and Application Summary Extension (`PD_APP2`) records, which are used to collect information about the operating status of processes. A consequence of this is that the values displayed in some fields will not be the same after this command has executed.

If the values of the following fields are different from the values of the corresponding fields of the Application Summary (`PD_APP`) record, review and, if necessary, revise the monitoring conditions:

- Application Process Detail (`PD_APPD`) record
  - Monitoring Count field
  - Monitoring Status field

- Application Summary Extension (PD\_APP2) record

Application Status field

Application Exist field

The following table shows the correspondence between the fields of the Application Summary (PD\_APP) record and the fields of the Application Process Detail (PD\_APPD) and Application Summary Extension (PD\_APP2) records.

**Table 9–1: Correspondence between the fields of the Application Summary (PD\_APP) record and the fields of the Application Process Detail (PD\_APPD) and Application Summary Extension (PD\_APP2) records**

Field of the Application Summary (PD_APP) record	Field of the Application Process Detail (PD_APPD) record	Field of the Application Summary Extension (PD_APP2) record
Application Name	Application Name	Application Name
Application Status	--	Application Status
Application Exist	--	Application Exist
ProcessXX Count <sup>#</sup>	Monitoring Count	--
ProcessXX Range <sup>#</sup>	Monitoring Min Monitoring Max	--
ProcessXX Status <sup>#</sup>	Monitoring Status	--
ProcessXX Kind <sup>#</sup>	Monitoring Field	--
ProcessXX Name <sup>#</sup>	Monitoring Condition	--

Legend:

--: No corresponding field exists.

#

XX is a two-digit numeric value in the range from 01 to 15. XX corresponds to the numeric value in the Monitoring Label field (MonitoringXX) of the Application Process Detail (PD\_APPD) record.

## Return values

0	Normal termination
Other than 0	Abnormal termination

## Usage example

The following is an example of executing the command interactively:

```
> C:\Program Files (x86)\Hitachi\jplpc\agtt\agent\jpcappcvt.exe
KAVF11600-Q Do you want to convert? (Y/N) y
KAVF11606-Q A settings for collecting process operation and non-operation in
formation already exists. Would you like to overwrite it? (Y/N) y
KAVF11601-I Conversion of a setting was successful
```

# 10

## Messages

This chapter explains the PFM - Agent for Platform message format, message output destinations, Windows event logs, and messages.

## 10.1 Message format

---

This section shows the format of the messages that are output by PFM - Agent for Platform and how they are described in the manual.

### 10.1.1 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 11.xxx.

**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)

## 10.1.2 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 *11. 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.

## 10.2 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 10–1: PFM - Agent for Platform message output destinations

Message ID	Output destination									
	Win evnt log	Cmn msg log	Evt Log rcrd fld	Std out	Std err	Pblc log	Dbg log	Cnvt log	JP1 sys evnt#1	Agnt evnt#2
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	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--
KAVF11319	--	Y	--	--	--	--	--	--	--	--
KAVF11320	--	Y	--	--	--	--	--	--	--	--
KAVF11321	--	Y	--	--	--	--	--	--	--	--

Message ID	Output destination									
	Win evnt log	Cmn msg log	Evt Log rcrd fld	Std out	Std err	Pblc log	Dbg log	Cnvt log	JP1 sys evnt#1	Agnt evnt#2
KAVF11322	--	Y	--	--	--	--	--	--	--	--
KAVF11323	--	Y	--	--	--	--	--	--	--	--
KAVF11324	--	Y	--	--	--	--	--	--	--	--
KAVF11325	--	Y	--	--	--	--	--	--	--	--
KAVF11326	--	Y	--	--	--	--	--	--	--	--
KAVF11327	--	Y	--	--	--	--	--	--	--	--
KAVF11405	--	--	Y#3	--	--	--	--	--	--	--
KAVF11406	--	Y	--	--	--	--	--	--	Y	Y
KAVF11407	--	Y	--	--	--	--	--	--	--	--
KAVF11500	--	Y	--	--	--	--	--	--	--	--
KAVF11501	--	Y	--	--	--	--	--	--	--	--
KAVF11502	--	Y	--	--	--	--	--	--	Y	Y
KAVF11503	Y	Y	--	--	--	--	--	--	--	--
KAVF11504	--	Y	--	--	--	--	--	--	--	--
KAVF11505	--	Y	--	--	--	--	--	--	--	--
KAVF11506	--	Y	--	--	--	--	--	--	--	--
KAVF11507	--	Y	--	--	--	--	--	--	--	--
KAVF11508	--	Y	--	--	--	--	--	--	--	--
KAVF11509	--	Y	--	--	--	--	--	--	--	--
KAVF11510	--	Y	--	--	--	--	--	--	--	--
KAVF11511	--	Y	--	--	--	--	--	--	--	--
KAVF11512	--	Y	--	--	--	--	--	--	--	--
KAVF11550	--	--	--	--	Y	--	--	--	--	--
KAVF11551	--	--	--	--	Y	--	--	--	--	--
KAVF11552	--	--	--	--	Y	--	--	--	--	--
KAVF11600	--	--	--	Y	--	--	--	--	--	--
KAVF11601	--	--	--	Y	--	--	--	Y	--	--
KAVF11602	--	--	--	--	Y	--	--	Y	--	--
KAVF11603	--	--	--	Y	--	--	--	Y	--	--
KAVF11604	--	--	--	Y	--	--	--	Y	--	--
KAVF11605	--	--	--	Y	--	--	--	Y	--	--
KAVF11606	--	--	--	Y	--	--	--	--	--	--
KAVF11607	--	--	--	--	Y	--	--	Y	--	--

Message ID	Output destination									
	Win evnt log	Cmn msg log	Evt Log rcrd fld	Std out	Std err	Pblc log	Dbg log	Cnvt log	JP1 sys evnt#1	Agnt evnt#2
KAVF11608	--	--	--	--	Y	--	--	Y	--	--
KAVF11609	--	--	--	--	Y	--	--	Y	--	--
KAVF11610	--	--	--	--	Y	--	--	Y	--	--
KAVF11611	--	--	--	--	Y	--	--	Y	--	--
KAVF11650	--	Y	--	--	--	--	--	--	--	--
KAVF11850	--	--	--	--	Y	--	--	--	--	--
KAVF11851	--	--	--	--	Y	--	--	--	--	--
KAVF11852	--	--	--	--	Y	--	--	--	--	--
KAVF11853	--	--	--	--	Y	--	--	--	--	--
KAVF11901	--	--	--	--	--	--	Y	--	--	--
KAVF11902	--	--	--	--	--	--	Y	--	--	--
KAVF11904	--	--	--	--	--	--	Y	--	--	--
KAVF11905	--	--	--	--	--	--	Y	--	--	--
KAVF11906	--	--	--	--	--	--	Y	--	--	--
KAVF11907	--	--	--	--	--	--	Y	--	--	--
KAVF11908	--	--	--	--	--	--	Y	--	--	--
KAVF11909	--	--	--	--	--	--	Y	--	--	--
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	--	--	--	--
KAVF11927	--	--	--	--	--	Y	--	--	--	--
KAVF11928	--	--	--	--	--	Y	--	--	--	--

Message ID	Output destination									
	Win evnt log	Cmn msg log	Evt Log rcrd fld	Std out	Std err	Pbhc log	Dbg log	Cnvt log	JP1 sys evnt#1	Agnt evnt#2
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	--	--	--
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	--	--	--
KAVF11994	--	--	--	--	--	--	Y	--	--	--
KAVF11995	--	--	--	--	--	--	Y	--	--	--
KAVF11996	--	--	--	--	--	--	Y	--	--	--
KAVF11997	--	--	--	--	--	--	Y	--	--	--
KAVF11998	--	--	--	--	Y	--	--	--	--	--

**Legend:**

Win evnt log: Windows event log

Cmn msg log: Common message log

Evt Log rcrd fld: Event Log (PD\_ELOG) record field  
 Std out: Standard output  
 Std err: Standard error output  
 Pblc log: Public log  
 Dbg log: Debug log  
 Cnvt log: Convert log  
 JP1 sys evnt: JP1 system event  
 Agnt evnt: Agent event

#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 *JP1/Performance Management User's Guide*.

The following table lists the prerequisite programs for issuing JP1 system events.

**Table 10–2: 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 *JP1/Performance Management User's Guide*.

The following table lists the prerequisite programs for issuing agent events.

**Table 10–3: 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.

## 10.3 List of messages output to the Windows event log

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.



### 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 10–4: 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
KAVF11503-E	11503	Error

## 10.4 Messages

---

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)

To find out if there are any problems with the specified user command, check the following:

- Is the user command correctly specified?
- Does the specified user command exist?
- Do you have the permission to execute the specified 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 *JPI/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 *JPI/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 *JPI/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 *JPI/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 following folder:

- For a physical host: `installation-folder\agtt\agent`
- For a logical host: `environment-folder\jplpc\agtt\agent`

If the `jpcagt.ini` file does not exist, copy (into the relevant folder) the backup copy of the `jpcagt.ini` file. If the `jpcagt.ini` file that was backed up does not exist, copy the `jpcagt.ini.model` file into the `installation-folder\agtt\agent` or `environment-folder\jplpc\agtt\agent`, and then rename the file to `jpcagt.ini`.

Even when a logical host is used, use the `jpcagt.ini.model` file in the `installation-folder\agtt\agent` folder.

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 *JPI/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.

(O)

Check whether the service corresponding to *record-id* is installed and whether the service has been started.

If this message persists, there is a possibility that part or all of the performance data cannot be collected from the Windows performance object.

Check if the following registry key exists, and if the registry key is set to a value other than 0, set it to 0.

`HKLM\SYSTEM\CurrentControlSet\Services\Service-name\Performance\Disable Performance Counters`

*Service-name* is one of the following strings:

`PerfDisk, PerfOS, PerfNet, PerfProc, Tcpip`

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 *JPI/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.

## KAVF11319-E

jpctRegistry terminated with error. (*rc=return-code*)

The `jpctRegistry` command terminated abnormally.

- (S)  
Continues 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.

#### KAVF11320-E

*jpctRegistry* timed out. (*rc=return-code*)

The *jpctRegistry* command timed out.

- (S)  
Continues 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.

#### KAVF11321-E

A collection auxiliary process failed to start. (*rc=return-code, en=OS-detail-code*)

A collection auxiliary process failed to start during startup of Agent Collector.

- (S)  
Terminates the Agent Collector processing.
- (O)  
Check whether there is a shortage in the OS resources or an error has occurred in the overall OS.

#### KAVF11322-E

A collection auxiliary process failed to restart. (*rc=return-code, en=OS-detail-code*)

A collection auxiliary process failed to restart after abnormal termination.

- (S)  
Continues the Agent Collector processing.
- (O)  
If this message persists, check whether there is a shortage in the OS resources or an error has occurred in the overall OS.

#### KAVF11323-E

*jpctRegistry* failed to start. (*rc=return-code, en=OS-detail-code*)

The *jpctRegistry* command failed to start.

- (S)  
Continues processing of the Agent Collector service.
- (O)  
If this message persists, check whether there is a shortage in the OS resources or an error has occurred in the overall OS.

Also, note that sometimes this message is output because too many objects have been specified, so make sure you have not specified in the collection data addition utility a very large number of objects as collection targets (in the thousands).

#### KAVF11324-E

A collection auxiliary process terminated with an error. (*rc=return-code*)

A collection auxiliary process terminated abnormally during startup of Agent Collector.

- (S) Terminates the Agent Collector processing.
- (O) Check whether there is a shortage in the OS resources or an error has occurred in the overall OS.

#### KAVF11325-E

A collection auxiliary process terminated with an error when attempting to restart. (*rc=return-code*)

A collection auxiliary process terminated abnormally when it was restarted after an abnormal termination.

- (S) Continues the Agent Collector processing.
- (O) If this message persists, check whether there is a shortage in the OS resources or an error has occurred in the overall OS.

#### KAVF11326-E

A collection auxiliary process timed out. (*rc=return-code*)

A collection auxiliary process timed out during startup of Agent Collector.

- (S) Terminates the Agent Collector processing.
- (O) If this message persists, check whether there is a shortage in the OS resources or an error has occurred in the overall OS.

#### KAVF11327-E

A collection auxiliary process timed out when attempting to restart. (*rc=return-code*)

A collection auxiliary process timed out when it was restarted after an abnormal termination.

- (S) Continues the Agent Collector processing.
- (O) If this message persists, check whether there is a shortage in the OS resources or an error has occurred in the overall OS.

## 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 details. The following information is part of the event: *character-string*.

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.

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.

#### KAVF11503-E

The logical host environment of Agent for Platform is not set up correctly, or the logical host environment is invalid. (*lhost=logical-host-name*)

The logical host environment of Agent for Platform has not been set up correctly, or the logical host environment is invalid.

- (S) Terminates processing of Agent Collector.
- (O) Check whether the version of PFM - Manager or PFM - Base on the same machine is earlier than 11-01. If the version is earlier than 11-01, set up the logical host environment according to the following procedure:
  1. Unset up the logical host environment of PFM - Agent for Platform.
  2. Update PFM - Manager or PFM - Base to version 11-01 or later.
  3. Set up the logical host environment of PFM - Agent for Platform.If the cause cannot be determined, collect maintenance information and then contact the system administrator.

#### KAVF11504-W

The user command did not end in the seconds specified in the time-out value (*nn* seconds) and will now be forcibly ended. (*record=record-id*)

Forcibly terminating the user command because it did not end within the time specified by the `User Command Timeout` property.

- (S) The applicable user command will now be forcibly terminated. Because the user command did not end successfully, the collection of the applicable records will be skipped, and the Agent Collector processing continues.

(O)

Remove the problem that is preventing the user command from ending or set the `User Command Timeout` property to a value greater than the time it takes for the user command to execute.

#### KAVF11505-I

The user command that was executed during the previous record collection is still running and will now be forcibly ended. (record=*record-id*)

Forcibly terminating the user command because the previous user command executed during the previous process of record collection did not end.

(S)

The applicable user command will now be forcibly terminated. In addition, the record collection process for the record for which the user command was forcibly terminated is skipped, and the Agent Collector processing continues.

#### KAVF11506-W

The user command execution and collection processing of the corresponding record will be skipped because the user command does not end. (record=*record-id*)

Because the forcible termination operation failed to end the previous user command, both the execution of the current user command and the collection of the applicable records will be skipped.

(S)

The collection of the applicable records will be skipped, and the Agent Collector processing continues.

(O)

Forcibly terminate the user command that would not end.

#### KAVF11507-I

The user command ended. (record=*record-id*)

Forcible termination operation ended the user command.

(S)

The Agent Collector processing continues.

#### KAVF11508-W

Record collection processing will be skipped, because no user data file has been created. (record=*record-id*)

Collection of the applicable records is skipped because no user data file has been created since the record was last collected.

(S)

The collection of the applicable records will be skipped, and the Agent Collector processing continues.

(O)

Remove the cause of the problem that prevented the creation of a user data file. The possible problems are as follows:

- The user command was not executed.
- An attempt to execute the user command failed.

- The user command execution was not completed.

## KAVF11509-I

Failed to connect to Docker Engine (*en=OS-detail-code*). Note that, if this problem reoccurs during the next attempt to collect information, this message will not be output again. The same applies for all consecutive attempts hereafter.

PFM - Agent for Platform failed to establish a connection with the Docker Engine. If PFM - Agent for Platform is running in a Docker environment, N/A is stored in the `Virtual Env ID` field of the `PD`, `PD_APSI`, and `PD_APS` records.

This message is only output the first time PFM - Agent for Platform fails to establish a connection with the Docker Engine after the start of the Agent Collector service. If the connection attempt fails again afterwards, the KAVF11510-W message is output.

(S)

The Agent Collector processing continues.

(O)

If you are not using the Docker environment, ignore this message.

If you are using the Docker environment, check whether any of the problems listed below are preventing PFM - Agent for Platform from establishing a connection with the Docker Engine. If they are, remove their causes:

- The Docker Engine is not up and running.
- The named pipe settings that are used for establishing a connection with the Docker Engine has been modified.

If you cannot identify the cause of the problem, collect maintenance information, and then contact the system administrator.

## KAVF11510-W

Failed to connect to Docker Engine (*en=OS-detail-code*). Note that, if this problem reoccurs during the next attempt to collect information, this message will not be output again. The same applies for all consecutive attempts hereafter.

PFM - Agent for Platform failed to establish a connection with the Docker Engine. If PFM - Agent for Platform is running in a Docker environment, N/A is stored in the `Virtual Env ID` field of the `PD`, `PD_APSI`, and `PD_APS` records.

(S)

The Agent Collector processing continues.

(O)

Check whether any of the problems listed below are preventing PFM - Agent for Platform from establishing a connection with the Docker Engine. If they are, remove their causes:

- The Docker Engine is not up and running.
- The named pipe settings that are used for establishing a connection with the Docker Engine has been modified.

If you cannot identify the cause of the problem, collect maintenance information, and then contact the system administrator.

## KAVF11511-W

Backup of the collection data addition utility settings failed. (*rc=return-code*)

An attempt to back up the collection data addition utility settings failed.

(S)

Continues processing the backup command.

(O)

If the collection data addition utility is running, terminate it and retry the backup. If backup fails again and the same message is output, back up the collection data addition utility settings manually.

#### KAVF11512-W

The attempt to restore the settings of the collection data addition utility failed. (*rc=return-code*)

An attempt to restore the collection data addition utility settings failed.

(S)

Continues processing the restore command.

(O)

If the Agent Collector service is running, terminate it and retry the restore command. Also, if the collection data addition utility is running, terminate it and retry the restore command. If the restore fails and the same message is output, perform the restore manually.

#### KAVF11550-E

An attempt to create a folder failed. (*folder=folder-name, cmd=command-name, rc=return-code*)

An attempt to create a folder failed.

(S)

Terminates processing of the command.

(O)

Confirm the following, and then execute the command again:

- Necessary access permissions are granted.
- Disk capacity is sufficient.

#### KAVF11551-E

An attempt to copy a file failed. (from *copy-source-path* to *copy-destination-path*, *cmd=command-name*, *rc=return-code*)

An attempt to copy a file failed.

(S)

Terminates processing of the command.

(O)

Confirm the following, and then execute the command again:

- Necessary access permissions are granted.
- Disk capacity is sufficient.
- The copy source file exists.

## KAVF11552-E

The system environment is invalid.

The system environment is invalid.

(S)

Terminates processing of the command.

(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 *JPI/Performance Management User's Guide*.

## KAVF11600-Q

Do you want to convert? (Y/N)

Indicate whether you want to create settings for collecting information about the operating status of processes from settings for collecting information about the application operating status.

Collecting information about the application operating status is functionality that existed in versions 09-00 and earlier. Collecting information about the operating status of processes is an extension of the functionality for collecting information about the application operating status that was provided in version 09-00 and earlier.

(S)

Waits for a response.

(O)

To perform the conversion, enter Y or y. To not perform the conversion, enter N or n. If you specify any other value, the same message will be displayed again.

## KAVF11601-I

Conversion of a setting was successful.

Settings for collecting information about the operating status of processes were created successfully from settings for collecting information about the application operating status.

Collecting information about the application operating status is functionality that existed in versions 09-00 and earlier. Collecting information about the operating status of processes is an extension of the functionality for collecting information about the application operating status that was packaged with versions 09-00 and earlier.

(S)

Terminates processing of the `jpcappcvt` command.

## KAVF11602-E

An attempt to convert a setting has failed.

The attempt to create settings for collecting information about the operating status of processes from settings for collecting information about the application operating status failed.

Collecting information about the application operating status is functionality that existed in versions 09-00 and earlier. Collecting information about the operating status of processes is an extension of the functionality for collecting information about the application operating status that was packaged with versions 09-00 and earlier.

(S)

Terminates processing of the `jpcappcvt` command.

(O)

Check the previous message.

#### KAVF11603-W

An attempt to convert a setting will now halt.

The attempt to create settings for collecting information about the operating status of processes from settings for collecting information about the application operating status was suspended.

Collecting information about the application operating status is functionality that existed in versions 09-00 and earlier. Collecting information about the operating status of processes is an extension of the functionality for collecting information about the application operating status that was packaged with versions 09-00 and earlier.

(S)

Suspends processing of the `jpcappcvt` command.

(O)

To perform the conversion, retry the `jpcappcvt` command.

#### KAVF11604-W

A settings for collecting application operation and non-operation information does not exist.

No settings could be found for collecting information about the application operating status.

Collecting information about the application operating status is functionality that existed in versions 09-00 and earlier. Collecting information about the operating status of processes is an extension of the functionality for collecting information about the application operating status that was packaged with versions 09-00 and earlier.

(S)

Continues processing the `jpcappcvt` command.

(O)

Specify from the Agents or Services window in PFM - Web Console the appropriate settings for collecting information about the operating status of processes.

#### KAVF11605-W

A settings for collecting application operation and non-operation information is not correct.

The settings for collecting information about the application operating status are not correct.

Collecting information about the application operating status is functionality that existed in versions 09-00 and earlier. Collecting information about the operating status of processes is an extension of the functionality for collecting information about the application operating status that was packaged with versions 09-00 and earlier.

(S)

Continues processing the `jpcappcvt` command.

(O)

The settings file might have become corrupted. Re-specifying the settings for collecting information about the application operating status from the Services window in PFM - Web Console might repair the file.

Alternatively, from the Agents or Services window in PFM - Web Console, specify settings for collecting information about the operating status of processes.

#### KAVF11606-Q

A settings for collecting process operation and non-operation information already exists. Would you like to overwrite it? (Y/N)

Confirm whether you want to overwrite the settings for collecting information about the operating status of processes.

Collecting information about the application operating status is functionality that existed in versions 09-00 and earlier. Collecting information about the operating status of processes is an extension of the functionality for collecting information about the application operating status that was packaged with versions 09-00 and earlier.

(S)

Waits for a response.

(O)

To overwrite the settings for collecting information about the operating status of processes, enter `Y` or `y`. To not overwrite, enter `N` or `n`. If you specify any other value, the same message will be displayed again.

#### KAVF11607-E

Administrator permissions are required.

A user who does not have Administrator permissions attempted to execute the `jpcappcvt` command.

(S)

Terminates processing of the `jpcappcvt` command.

(O)

Execute the `jpcappcvt` command as a user with Administrator permissions.

#### KAVF11608-E

An attempt to execute a command has failed, because of not executing from the Performance Management Administrator Console.

The `jpcappcvt` command was not executed from the Administrator Console.

(S)

Terminates processing of the `jpcappcvt` command.

(O)

Execute the `jpcappcvt` command from the Administrator Console using one of the following methods:

- From the **Start** menu in Windows, choose **All Programs > Performance Management > Administrator Console**.

- From the **Start** menu in Windows, right-click **All Programs > Accessories > Command Prompt**, and then choose **Run as administrator**.

#### KAVF11609-E

A fatal error has occurred.

A fatal error occurred.

(S)

Terminates processing of the `jpcappcvt` command.

(O)

Collect maintenance data, and then contact a system administrator.

#### KAVF11610-E

An attempt to allocate memory failed.

An attempt to allocate memory failed.

(S)

Terminates processing of the `jpcappcvt` command.

(O)

Try closing other applications or increasing the amount of memory.

If you cannot determine the cause, collect maintenance data, and then contact a system administrator. For details about how to collect data, see the chapter that explains troubleshooting in the *JP1/Performance Management User's Guide*.

#### KAVF11611-E

Convert command is being executed.

An attempt was made to execute the `jpcappcvt` command while it was already executing.

(S)

Terminates processing of the `jpcappcvt` command.

(O)

Retry the command after processing of the `jpcappcvt` command terminates.

#### KAVF11650-W

An error occurred in the communication with Docker Engine. Note that, if this problem reoccurs during the next attempt to collect information, this message will not be output again. The same applies for all consecutive attempts hereafter.

An error occurred during communication with the Docker Engine. Due to this, N/A is stored in the `Virtual Env ID` field of the `PD`, `PD_APSI`, and `PD_APS` records of the processes whose execution environment could not be identified.

(S)

The Agent Collector processing continues.



(O)

The Docker Engine might have been busy during record collection by Agent Collector. Avoid operating the Docker Engine (for example, executing a Docker command) while Agent Collector is collecting records.

#### KAVF11850-E

Error: Multiple logical host name options cannot be specified.

Multiple logical host name options cannot be specified.

(S)

Terminates processing of the `jpcuser` command.

(O)

Do not specify any logical host name option, or specify only one logical host name option.

#### KAVF11851-E

Error: The specification of the logical host name is incorrect.

The logical host name has not been specified, the length of the specified logical host name exceeds the upper limit, or the specified logical host name is wrong.

(S)

Terminates processing of the `jpcuser` command.

(O)

Confirm the logical host name, and then execute the command again.

#### KAVF11852-E

Error: The specified logical host name is not set up. (`lhost=logical-host-name`)

The specified logical host name has not been set up.

(S)

Terminates processing of the `jpcuser` command.

(O)

Confirm the logical host name, and then execute the command again.

#### KAVF11853-E

Error: The environment folder cannot be accessed. (`folder=environment-folder-name`)

The environment folder cannot be accessed.

(S)

Terminates processing of the `jpcuser` command.

(O)

Check the following:

- Whether there is an environment folder that corresponds to the specified logical host.
- Whether the command was executed on the standby node.

### 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 truncates the excess characters of the value specified as the option (the portion in excess of the maximum length) and then allows the processing to continue.

(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.

(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>] [-lhost <logical host name>]`

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.

# 11

## Error Handling Procedures

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 *JP1/Performance Management User's Guide*.

## 11.1 Error handling procedures

---

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 *10. Messages*. For details about the log information that is output by Performance Management, see *11.3 Log information to be collected for troubleshooting*.

### Collecting data

You must collect data to identify the error cause. Collect the required data as explained in *11.4 Windows-related data to be collected for troubleshooting* and *11.5 Procedures for collecting Windows-related data for troubleshooting*.

### 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.



## 11.2 Troubleshooting

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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.

### 11.2.1 Troubleshooting related to hangs or abnormal shutdown

If the following phenomena occur when Performance Management is used, the problem could have been caused by the extended counter DLL:

- 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 is stopped, the KAVE05034-E error message is displayed.

In such cases, see the following information in the Microsoft Knowledge Base provided by Microsoft Corporation:

- The system hangs when the Performance Monitor starts or a counter is added
- Troubleshooting the Performance Monitor Counters

### 11.2.2 Troubleshooting related to other problems

Check the phenomenon of the problem that occurred. If a message is output, check the contents of the message. For log information output by Performance Management, see [11.3 Log information to be collected for troubleshooting](#).

You might be unable to resolve an error by taking the steps described in [11.2.1 Troubleshooting related to hangs or abnormal shutdown](#) or by referring to the chapter that describes troubleshooting in the *JP1/Performance Management User's Guide*. Also, an error other than those described in this section or chapter might not be resolvable. In such cases, collect the data needed to investigate the cause of the error and contact the system administrator.

For details about the data you need to collect and how to collect it, see [11.4 Windows-related data to be collected for troubleshooting](#) and [11.5 Procedures for collecting Windows-related data for troubleshooting](#).

## 11.3 Log information to be collected for troubleshooting

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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.

### 11.3.1 Types of log information to be collected

#### (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 *JPI/Performance Management Reference*.

##### *Notes about logical host operation*

In addition to the system log for Performance Management, you might need the log information for the cluster software in order to check such information as Performance Management control by the cluster software.

#### (2) Common message log

The common message log 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 [11.3.2 Log files and folders to check](#). For the output format, see the chapter explaining log information in the manual *JPI/Performance Management Reference*.

##### *Notes about logical host operation*

When Performance Management is under logical host operation, the common message log is output to the shared disk. Because a log file on the shared disk is inherited together with the system during failover, messages are recorded in the same log file.

#### (3) Operation status log

The operation status log is 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 *JPI/Performance Management User's Guide*. For the output format, see the chapter explaining log information in the manual *JPI/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.

*Notes about logical host operation*

When Performance Management is under logical host operation, the trace log is output to the shared disk. Because a log file on the shared disk is inherited together with the system during failover, trace logs are recorded in the same log file.

## 11.3.2 Log files and folders to check

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 *JPI/Performance Management User's Guide*.

### (1) Common message log

For details about the common message log, see the chapter that describes details on log information in the *JPI/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 11–1: Trace log storage destination folder name (in Windows)

No.	Log type	Output source	Folder name
1	Trace log	Performance Management command	<i>installation-folder</i> \tools\log\
2		Agent Collector service	<i>installation-folder</i> \agtt\agent\log\
3		Agent Store service	<i>installation-folder</i> \agtt\store\log\
4	Trace log (for logical host operation)	Performance Management command	<i>environment-folder</i> #\jp1pc\tools\log\
5		Agent Collector service	<i>environment-folder</i> #\jp1pc\agtt\agent\log\
6		Agent Store service	<i>environment-folder</i> #\jp1pc\agtt\store\log\

#  
The environment folder is on the shared disk that was specified when the logical host was created.

## 11.4 Windows-related data to be collected for troubleshooting

If you cannot eliminate the error even when you have taken the steps described in *11.2 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 *JPI/Performance Management Reference*.

*Notes about logical host operation*

The following notes apply to logical host operation:

- During logical host operation, Performance Management log information is stored on the shared disk. If the shared disk is online, you can use the `jpcras` command to also collect the log information on the shared disk in the batch mode.
- To investigate problems during failover, you need the information existing before and after the failover. This means that you need information from both the executing system and the standby system.
- When Performance Management runs on a logical host, its startup and termination are controlled by the cluster software. Therefore, you need information about the cluster software in order to investigate a Performance Management that is running on a logical host. Compare the cluster software operation and the Performance Management operation.

### 11.4.1 OS log information to be collected

You need to collect the OS-related log information indicated in the following table.

Table 11–2: OS-related log information

Type of information	Description	Default file name	Collection by jpcras command possible
System log	Windows event log	--	Y
	WMI log	<i>system-folder</i> \system32\WBEM\Logs\*#	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
	Environment variable	--	Y
	Host name	--	Y

Type of information	Description	Default file name	Collection by jpcras command possible
OS information	Windows Firewall information	--	Y
Dump information	Log files for problem reports and solutions	<i>user-mode-process-dump-folder\program-name . process-ID . dmp</i> Example: <i>jpcagtt.exe.2420.dmp</i>	N

**Legend:**

Y: Can be collected.

N: Cannot be collected.

--: Not applicable.

#

If log files are set to be output to another folder, collect data from that folder.

## 11.4.2 Performance Management information to be collected

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 11–3: 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\log\jpclog{01 02}#1</i>	Y
	Message log output by Performance Management (wrap-around method)	<i>installation-folder\log\jpclogw{01 02}#1</i>	Y
Configuration information	Information file for each configuration	--	Y
	Output results of the <code>jpctool service list</code> command	--	Y
Version information	Product version	--	Δ
	History information	--	Δ
Database information	Agent Store	<ul style="list-style-type: none"> <li>For Store 1.0 <i>installation-folder\agtt\store\*.DB</i> <i>installation-folder\agtt\store\*.IDX</i></li> <li>For Store 2.0 <i>installation-folder\agtt\store\STPD</i></li> </ul>	Y

Information type	Description	Default file name or registry	Collection by jpcras command possible
Database information	Agent Store	The following files under the <i>installation-folder</i> \agtt\store\STPI folder: * .DB * .IDX	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
	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 XUI1 XUI2 XUI3 XUI4 XUI5}	Y
	Backup file of the user data file	<i>installation-folder</i> \agtt\agent\jpcuser\userdata\jpcuser_{UPI UPIB UPD UPDB XUI1 XUI2 XUI3 XUI4 XUI5}_bak	Y
Log unique to the Agent Collector service	Performance information	<ul style="list-style-type: none"> <li><i>installation-folder</i>\agtt\agent\map.log</li> <li><i>installation-folder</i>\agtt\agent\map64.log</li> </ul>	Y
		<ul style="list-style-type: none"> <li><i>installation-folder</i>\agtt\agent\log\cdaumap.log</li> <li><i>installation-folder</i>\agtt\agent\log\cdaumap64.log</li> </ul>	Δ
	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	Δ
	Performance counter help definition file (Japanese)	The following files under the <i>system-folder</i> \system32 folder: perfc011.dat perfh011.dat	Δ
	Application definition file (09-00 or earlier)	<i>installation-folder</i> \agtt\agent\jpcapp	Y
	Application definition file (10-00 or later)	<i>installation-folder</i> \agtt\agent\jpcapp2	Y
Registry information	Service-related information (including the performance definition information)	"HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services"	Δ

Information type	Description	Default file name or registry	Collection by jpcras command possible
Registry information	Performance definition information (default)	"HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Perflib"	Δ
	PFM - Agent for Platform settings	"HKEY_LOCAL_MACHINE\SOFTWARE\HITACHI\JP1PCAGTT"	Δ
	PFM - Agent for Platform configuration information (WOW64)	"HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\HITACHI\JP1PCAGTT"	Δ
Installation log <sup>#3</sup>	Installation message log	<i>system-folder</i> \TEMP\HCDINST\*.LOG	N
Language environment information	Language environment information	<ul style="list-style-type: none"> <li><i>installation-folder</i>\agtt\agent\log\system_lang{01 02}.log</li> <li><i>installation-folder</i>\agtt\agent\jpcuser\log\public\user_lang{01 02 03 04}.log</li> </ul>	Y
		<ul style="list-style-type: none"> <li><i>installation-folder</i>\agtt\agent\log\pcconfig{1 2}.log</li> <li><i>installation-folder</i>\agtt\agent\log\jpcappcvt{01 02}.log</li> </ul>	Δ

**Legend:**

- Y: Can be collected (physical host and logical host)
- Δ: Can be collected (physical host only)
- N: Cannot be collected
- : Not applicable

**Note:**

When a logical host is used, replace *installation-folder* with *environment-folder\jp1pc*.

**#1**

For details about log file output methods, see the chapter explaining error detection in Performance Management in the *JP1/Performance Management User's Guide*.

**#2**

For details about the trace log storage destination folder, see *11.3.2 Log files and folders to check*.

**#3**

Collect this log if installation fails.

### 11.4.3 Operation information to be collected

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
- If the error occurred during execution of a command, the arguments specified in the command

## 11.4.4 Error information displayed on screen to be collected

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

## 11.4.5 Performance data information to be collected

You need to collect the following information pertaining to performance data. In addition, you need to collect files, results of commands, and registry information from the machine.

The following table shows the performance data information specific to PFM - Agent for Platform that needs to be collected in an environment in which PFM - Agent for Platform is installed.

Table 11–4: Performance data information specific to PFM - Agent for Platform

Information type	Overview	Information that needs to be collected (file name, collection command name, registry definition location)	Can be collected using the jpcras command?
Performance definition information	Counter definition file Counter definition location (registry)	<i>system-folder</i> \system32\perfc009.dat	Δ
		<i>system-folder</i> \system32\perfc011.dat	Δ
		<i>system-folder</i> \system32\perfh009.dat	Δ
		<i>system-folder</i> \system32\perfh011.dat	Δ
	Counter definition file	HKEY_LOCAL_MACHINE\SOFTWARE \Microsoft\Windows NT\CurrentVersion \Perflib	Δ
		HKEY_LOCAL_MACHINE\SYSTEM \CurrentControlSet\Services	Δ
	Counter information	<i>installation-folder</i> \agtt\agent\map.log	Y
		<i>installation-folder</i> \agtt\agent\map64.log	Y
		<i>installation-folder</i> \agtt\agent\log \cdaumap.log	Δ
		<i>installation-folder</i> \agtt\agent\log \cdaumap64.log	Δ
OS information (command) <sup>#1</sup>	Host name	hostname	Δ
	Version	ver	Δ



Information type	Overview	Information that needs to be collected (file name, collection command name, registry definition location)	Can be collected using the jpcras command?
OS information (command) <sup>#1</sup>	Cluster	cluster	Δ
	Device	mode	Δ
	Disk counter	diskperf	Δ
	Disk volume	mountvol	Δ
		vol	Δ
	Virtual drive	subst	Δ
	TCP/IP	ipconfig	Δ
	IPX	ipxroute config	Δ
	Network status	nbtstat	Δ
	Network name	net name	Δ
	Client	net view	Δ
	Service	net start	Δ
	Server service	net config server	Δ
	Workstation service	net config workstation	Δ
	Session	net session	Δ
	Shared resource	net share	Δ
		net use	Δ
	User account	net user	Δ
		net accounts	Δ
	Local group	net localgroup	Δ
	Domain controller	dsquery server	Δ
		dsquery ou	Δ
		dsquery user	Δ
Process	tasklist /m	Δ	
	tasklist /svc	Δ	
TCP/IP	netstat -a	Δ	
Docker information <sup>#2</sup>	--	docker version docker ps -a --no-trunc docker top <i>Docker-container-id</i> <sup>#3</sup> docker inspect <i>Docker-container-id</i> <sup>#3</sup> type %programdata%\docker\config \daemon.json	Δ

Legend:

Y: Can be collected (physical host and logical host)

Δ: Can be collected (physical host only)

--: N/A

Note:

When a logical host is used, replace *installation-folder* with *environment-folder\jplpc*.

#1

For details about commands, see **Help** in Windows.

#2

This information can be collected only when the Docker environment is used with Windows Server 2016 or later.

#3

This information must be collected for all Docker containers.

## 11.4.6 User-mode process dump to be collected

If the Performance Management process terminates with an application error, collect a user-mode process dump.

## 11.4.7 Problem report to be collected

If the Performance Management process terminates with an application error, collect the problem report.

## 11.4.8 Other information to be collected

The following types of information are also necessary:

- Contents of **System** and **Application** in the Windows Event Viewer window
- Content of **System Information** under **System Tools** under **Accessories**

## **11.5 Procedures for collecting Windows-related data for troubleshooting**

For details about how to collect Windows data for troubleshooting, see the chapter that describes how to handle problems in the *JP1/Performance Management User's Guide*.

## 11.6 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 *JP1/Performance Management User's Guide*.

## 11.7 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 *JP1/Performance Management User's Guide*.

# Appendixes

## A. Estimating System Requirements

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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.

### A.1 Estimating memory requirements

Memory requirements change according to the settings and usage of PFM - Agent for Platform. For details about the formulas to use for estimating memory requirements, see the *Release Notes*.

### A.2 Estimating disk space requirements

Disk space requirements vary according to the number of records for which performance data is collected. When estimating the amount of disk space required, note that the estimated disk space required for the entire system is a function of the estimated disk space required for the Store database (version 1.0 or 2.0). For the equations to use to estimate disk space requirements, see the *Release Notes*.

## B. List of Identifiers

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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 section that explains service naming conventions in the appendix of the <i>JP1/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 section that explains service naming conventions in the appendix of the <i>JP1/Performance Management Planning and Configuration Guide</i> .
Help	Help ID	pcat	Indicates help for PFM - Agent for Platform.



## 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 *JP1/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

Process name (Number of processes)	Function
jpgcagtt.exe (1)	Agent Collector service process. One Agent Collector service process is started for each PFM - Agent for Platform.
jpgcsto.exe (1)	Agent Store service process. One Agent Store service process is started for each PFM - Agent for Platform.
stpqlpr.exe (1) <sup>#1</sup>	Process for executing a backup or export of the Store database
jpgctRegistry32.exe (2) <sup>#2</sup>	Collection process (32-bit edition). This process starts and stops with each collection.
jpgctRegistry64.exe (1)	Collection process (64-bit edition). This process starts and stops with each collection.
jpgctRegistry32Sub.exe (1)	Collection auxiliary process (32-bit edition). This process starts when the Agent Collector service is started and terminates when the Agent Collector service stops.

#1: Child process of the jpgcsto.exe process

#2: In a logical host environment, the number of processes is 1.

## 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 *JP1/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 *JP1/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 NAT (IP Masquerade, NAT+), which includes a port conversion function.
- When PFM - Agent for Platform is used in an environment in which the Windows firewall is enabled, you must register the port number used by PFM - Agent for Platform to the exception list. For details about settings for the Windows firewall, see *D.3 Settings for the Windows firewall*.

### D.1 Port numbers of PFM - Agent for Platform

Port numbers used by PFM - Agent for Platform are preferred port numbers.

If you do not change port numbers from their defaults when executing the `jpccconf port define` command, these preferred port numbers are assigned. If the `jpccconf port define` command is not executed, port numbers not being used by the system are automatically assigned when the service is restarted. If the logical host and physical host on a device (or multiple logical hosts) have Performance Management series program services, unique port numbers must be assigned among those hosts.

The following table lists the preferred port numbers used by PFM - Agent for Platform.

Table D–1: Preferred port numbers used by PFM - Agent for Platform

Preferred port number	Service name	Parameter#1	Application
20279	Agent Store service	<code>jp1pcstot[_logical host name]#2</code>	Used for recording performance data and acquiring historical reports.
20280	Agent Collector service	<code>jp1pcagtt[_logical host name]#2</code>	Used for binding an alarm and acquiring real-time reports.

#1

Service name of the `services` file

#2

`_logical host name` is added for a logical host service, and is not added for a physical host service.

## D.2 Firewall passage directions

For details about locating PFM - Manager and PFM - Agent for Platform across a firewall, see the section that describes firewall passage directions in the manual *JPI/Performance Management Reference*.

## D.3 Settings for the Windows firewall

When PFM - Agent for Platform is used in an environment in which the Windows firewall is enabled, you must register the port number used by the following services to the exception list.

Table D–2: The port number registered in the exception list.

Parameter	Service name
jp1pcagtt[_logical host name]#	Agent Collector service
jp1pcstot[_logical host name]#	Agent Store service

#  
\_logical host name is added for a logical host service, and is not added for a physical host service.

Perform the following to register an item in the exceptions list:

1. Execute the `jpccconf port define` command, setting the port number used by the services above. Also execute the `jpccconf port list` command to check the service port numbers. For details about the `jpccconf port` command, see the manual *JPI/Performance Management Reference*.
2. Perform one of the following to register an item in the exceptions list.

- In the [Exceptions] tab of the [Windows Firewall] control panel choose [Add port] and then register the following port numbers.

Port number: tcp 20280#

Name: JPI/Performance Management - Agent for Platform

[this port number corresponds to the parameter jp1pcagtt[\_logical host name]]

Port number: tcp 20279#

Name: JPI/Performance Management - Agent for Platform

[this port number corresponds to the parameter jp1pcstot[\_logical host name]]

- Execute the following commands to register port numbers.

```
netsh firewall add portopening protocol=TCP port=20280(this port number corresponds to the parameter  
jp1pcagtt[_logical host name]) #2
```

```
name="JPI/Performance Management - Agent for Platform" mode=ENABLE
```

```
netsh firewall add portopening protocol=TCP port=20279(this port number corresponds to the parameter  
jp1pcstot[_logical host name]) #2
```

```
name="JPI/Performance Management - Agent for Platform" mode=ENABLE
```

#  
When the `jpccconf port` command is used to change the port number to an arbitrary number the port number is different from that given in this documentation. Change the port number to the value for the port option checked in step 1 and execute the command.

For details about port numbers, see *D. List of Port Numbers*.

3. In Windows Firewall check the contents registered above in [**Programs or port**] to make sure that the check boxes are selected. If they are registration is complete.
4. To unregister a service select the registration information displayed in [**Programs or port**] for Windows Firewall and then choose [**Delete**] to remove the service from the list. To temporarily disable registration information clear the appropriate check box.

*Note:*

When uninstalling PFM - Agent for Platform, delete everything displayed for PFM - Agent for Platform displayed in the list of [**Programs or port**].

After all PFM products on the same machine are uninstalled, delete Performance Management as well. If another PFM product is installed do not delete Performance Management.

## 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	If the IPv6 communication functionality is disabled, this property shows the IP address and port number of the host on which the service runs.
	Physical Address (IPv4)	If the IPv6 communication functionality is enabled, this property shows the IP address (IPv4) of the host on which the service runs.
	Physical Address (IPv6)	If the IPv6 communication functionality is enabled, this property shows the IP address (IPv6) of the host on which the service runs.
	Port Number	If the IPv6 communication functionality is enabled, this property shows the 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.

Folder name		Property name	Explanation
Network Services		Build Date	Shows the Agent Store 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.
		Remote Service 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 <i>JPI/Performance Management User's Guide</i> .
		Product Interval - Minute Drawer	Specifies the minute-by-minute record retention period for PI-type records. One of the following can be selected: <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	Specifies the hourly record retention period for PI-type records. One of the following can be selected: <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	Specifies the daily record retention period for PI-type records. One of the following can be selected: <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> </ul>

Folder name		Property name	Explanation
Retention		Product Interval - Day Drawer	<ul style="list-style-type: none"> <li>• 6 Days</li> <li>• Week</li> <li>• Month</li> <li>• Year</li> </ul>
		Product Interval - Week Drawer	<p>Specifies the weekly record retention period for PI-type records. One of the following can be selected:</p> <ul style="list-style-type: none"> <li>• Week</li> <li>• Month</li> <li>• Year</li> </ul>
		Product Interval - Month Drawer	<p>Specifies the monthly record retention period for PI-type records. One of the following can be selected:</p> <ul style="list-style-type: none"> <li>• Month</li> <li>• Year</li> </ul>
		Product Interval - Year Drawer	Specifies the yearly record retention period for PI-type records. Fixed to Year.
		Product Detail - record-id-of-pd-type-record	<p>Specifies the number of records retained for each PD-type record. An integer in the range from 0 to 2,147,483,647 can be specified.</p> <p><i>Note:</i> If an invalid numerical value or a character such as a letter is specified, an error message is displayed.</p>
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 <i>JPI/Performance Management User's Guide</i> .
RetentionEx	Product Interval - record-ID-of-PI-type-record	--	Specifies the record retention period for PI-type records.
		Period - Minute Drawer (Day)	<p>Specifies the minute-by-minute performance data retention period for each PI-type record ID.</p> <p>An integer in the range from 0 to 366 can be specified for the retention period (number of days).</p>
		Period - Hour Drawer (Day)	<p>Specifies the hourly performance data retention period for each PI-type record ID.</p> <p>An integer in the range from 0 to 366 can be specified for the retention period (number of days).</p>
		Period - Day Drawer (Week)	<p>Specifies the daily performance data retention period for each PI-type record ID.</p> <p>An integer in the range from 0 to 522 can be specified for the retention period (number of weeks).</p>
		Period - Week Drawer (Week)	<p>Specifies the weekly performance data retention period for each PI-type record ID.</p> <p>An integer in the range from 0 to 522 can be specified for the retention period (number of weeks).</p>
		Period - Month Drawer (Month)	<p>Specifies the monthly performance data retention period for each PI-type record ID.</p> <p>An integer in the range from 0 to 120 can be specified for the retention period (number of months).</p>
		Period - Year Drawer (Year)	Displays the yearly performance data retention period for each PI-type record ID.

Folder name		Property name	Explanation
RetentionEx	Product Detail - record-ID-of-PD-type-record	Period (Day) <sup>#</sup>	Specifies the performance data retention period for each 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 - record-ID-of-PL-type-record	Period (Day)	Specifies the performance data retention period for each 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 PI-type records.
		Product Detail	Shows the disk capacity used by PD-type records.
		Product Alarm	Shows the disk capacity used by PA-type records. Not used in PFM - Agent for Platform (Windows).
		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>
Multiple Manager Configuration		Primary Manager	Displays the host name of the monitoring manager specified as the primary manager for multiple monitoring. You cannot change this property.
		Secondary Manager	Displays the host name of the monitoring manager specified as the secondary manager for multiple monitoring. You cannot change this property.

**Legend:**

--: Not applicable

#

This is fixed to 0 if the record ID is APS or ASVC.

## 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.



Folder name		Property name	Explanation
--		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.
		Host Name	Shows the name of the host on which the service runs.
		Process ID	Shows the process ID of the service.
		Physical Address	If the IPv6 communication functionality is disabled, this property shows the IP address and port number of the host on which the service runs.
		Physical Address (IPv4)	If the IPv6 communication functionality is enabled, this property shows the IP address (IPv4) of the host on which the service runs.
		Physical Address (IPv6)	If the IPv6 communication functionality is enabled, this property shows the IP address (IPv6) of the host on which the service runs.
		Port Number	If the IPv6 communication functionality is enabled, this property shows the 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.
		Remote Service 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 <code>localhost</code> 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 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.
		Monitoring Console Htps	Specifies whether to connect to the PFM - Web Console via https-based encrypted communications when the PFM - Web Console is started by the startup of the JP1/IM - Manager monitor. The default is No. <ul style="list-style-type: none"> <li>• Yes: Uses encrypted communications.</li> <li>• No: Does not use encrypted communications.</li> </ul>
JP1 Event Configurations	Alarm	JP1 Event Mode	Specifies which of the following events is issued when 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.
Detail Records	<i>record-id</i> <sup>#1</sup>	--	Stores record properties.
		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.
		Log (ITSLM)	If there is a link to JP1/SLM - Manager, this property displays Yes or No indicating whether records from JP1/SLM - Manager are to be registered in the Store database of PFM - Agent Platform. If there is no linkage, this value is fixed to No. This property cannot be changed.
		Monitoring (ITSLM)	If there is a link to JP1/SLM - Manager, a setting in JP1/SLM - Manager displays Yes or No indicating whether records are to be sent to JP1/SLM - Manager. If there is no linkage, this value is fixed to No. This property cannot be changed.
		Collection Interval <sup>#2</sup>	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 <sup>#2</sup>	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

Folder name		Property name	Explanation
Detail Records	<i>record-id</i> <sup>#1</sup>	Collection Offset <sup>#2</sup>	Collection Offset, the data collection recording time is the same as the value specified for Collection Interval.
		Over 10 Sec Collection Time	<p>This property is displayed only when historical data collection takes priority over real-time report display processing. (The history collection priority function is enabled.)</p> <p>Whether collection of records takes 10 seconds or longer is displayed as <b>Yes</b> or <b>No</b>.</p> <ul style="list-style-type: none"> <li>• <b>Yes</b>: It sometimes takes 10 seconds or longer.</li> <li>• <b>No</b>: It takes less than 10 seconds.</li> </ul> <p>You cannot change this property.</p>
		Realtime Report Data Collection Mode	<p>This property is displayed only when historical data collection takes priority over real-time report display processing. (The history collection priority function is enabled.)</p> <p>Specify either of the following real-time report display modes:</p> <ul style="list-style-type: none"> <li>• <b>Reschedule</b>: Reschedule mode</li> <li>• <b>Temporary Log</b>: Temporary log mode</li> </ul> <p>Note that you must specify the temporary log mode (<b>Temporary Log</b>) for records for which <b>Over 10 Sec Collection Time</b> is set to <b>Yes</b>.</p>
		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	<p>Synchronizes collection with the record specified in the following format:</p> <p><i>Sync Collection With =record-type, record-id</i></p> <p><i>Example: Sync Collection With=Interval Records, PI</i></p>
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.
		Description	Shows record description. This property cannot be modified.
		Log	<b>Yes</b> or <b>No</b> is selected from a list to specify whether to register records in the Store database. If this value is <b>Yes</b> and the Collection Interval is greater than 0, records are registered in the database.
		Log (ITSLM)	If there is a link to JP1/SLM - Manager, this property displays <b>Yes</b> or <b>No</b> indicating whether records from JP1/SLM - Manager are to be registered in the Store database of PFM - Agent Platform. If there is no linkage, this value is fixed to <b>No</b> . This property cannot be changed.
		Monitoring (ITSLM)	If there is a link to JP1/SLM - Manager, a setting in JP1/SLM - Manager displays <b>Yes</b> or <b>No</b> indicating whether records are to be sent to JP1/SLM - Manager. If there is no linkage, this value is fixed to <b>No</b> . This property cannot be changed.
		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

Folder name		Property name	Explanation
Interval Records	<i>record-id</i> <sup>#1</sup>	Collection Offset	Collection Offset, the data collection recording time is the same as the value specified for Collection Interval.
		Over 10 Sec Collection Time	<p>This property is displayed only when historical data collection takes priority over real-time report display processing. (The history collection priority function is enabled.)</p> <p>Whether collection of records takes 10 seconds or longer is displayed as <i>Yes</i> or <i>No</i>.</p> <ul style="list-style-type: none"> <li>• <i>Yes</i>: It sometimes takes 10 seconds or longer.</li> <li>• <i>No</i>: It takes less than 10 seconds.</li> </ul> <p>You cannot change this property.</p>
		Realtime Report Data Collection Mode	<p>This property is displayed only when historical data collection takes priority over real-time report display processing. (The history collection priority function is enabled.)</p> <p>Specify either of the following real-time report display modes:</p> <ul style="list-style-type: none"> <li>• <i>Reschedule</i>: Reschedule mode</li> <li>• <i>Temporary Log</i>: Temporary log mode</li> </ul> <p>Note that you must specify the temporary log mode (<i>Temporary Log</i>) for records for which <i>Over 10 Sec Collection Time</i> is set to <i>Yes</i>.</p>
		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 <i>JP1/Performance Management Planning and Configuration Guide</i> .
		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. A value in the range from 1 to 1,440 minutes can be set in 1-minute increments.
		Auto Restart - Repeat Limit	Sets (as an integer from 1 to 10) the number of times in succession a restart is to be attempted when the Auto-restart functionality is used.
		Scheduled Restart	<i>Yes</i> or <i>No</i> is selected from a list to specify whether to use the scheduled restart functionality for the Action Handler service.

Folder name		Property name	Explanation
Restart Configurations	Action Handler	Scheduled Restart - Interval	Sets (as an integer from 1 to 1000) the restart interval when the scheduled restart functionality is used.
		Scheduled Restart - Interval Unit	When the scheduled restart functionality is used, sets the unit of the restart interval to Hour, Day, Week, or Month, as selected from a list.
		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 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. A value in the range from 1 to 1,440 minutes can be set in 1-minute increments.
		Auto Restart - Repeat Limit	Sets (as an integer from 1 to 10) the number of times in succession a restart is to be attempted when the Auto-restart functionality is used.
		Scheduled Restart	Yes or No is selected from a list to specify whether the scheduled restart functionality for the Agent Collector service is to be used.
		Scheduled Restart - Interval	Sets (as an integer from 1 to 1000) the restart interval when the scheduled restart functionality is used.
		Scheduled Restart - Interval Unit	When the scheduled restart functionality is used, sets the unit of the restart interval to Hour, Day, Week, or Month, as selected from a list.
		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
Restart Configurations	Agent Collector	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.
		Auto Restart - Interval (Minute)	Sets the interval (in minutes) for checking the operating status of the service when the Auto-restart functionality is used. A value in the range from 1 to 1,440 minutes can be set in 1-minute increments.
		Auto Restart - Repeat Limit	Sets (as an integer from 1 to 10) the number of times in succession a restart is to be attempted when the Auto-restart functionality is used.
		Scheduled Restart	Yes or No is selected from a list to specify whether the scheduled restart functionality for the Agent Store service is to be used.
		Scheduled Restart - Interval	Sets (as an integer from 1 to 1000) the restart interval when the scheduled restart functionality is used.
		Scheduled Restart - Interval Unit	When the scheduled restart functionality is used, sets the unit of the restart interval to Hour, Day, Week, or Month, as selected from a list.
		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.
ITSMLM Connection Configuration		--	Shows information about the connection to the JP1/SLM - Manager.
ITSMLM Connection Configuration	ITSMLM Connection	--	Shows information about the JP1/SLM - Manager connection destination.
		ITSMLM Host	Shows the host name of the connected JP1/SLM - Manager. If there is no connection to JP1/SLM - Manager, this property is not shown.
		ITSMLM Port	Shows the port number of the connected JP1/SLM - Manager. If there is no connection to JP1/SLM - Manager, this property is not shown.
	MANAGE ITSMLM CONNECTION	--	Sets whether to stop the connection to JP1/SLM - Manager.
		DISCONNECT ITSMLM CONNECTION	Specifies from a list of items the host name of the JP1/SLM - Manager to disconnect from. If you specify the empty string from the list, nothing happens. If there is no connection to JP1/SLM - Manager, the list shows only the empty string.

Folder name		Property name	Explanation
Multiple Manager Configuration		Primary Manager	Displays the host name of the monitoring manager specified as the primary manager for multiple monitoring. You cannot change this property.
		Secondary Manager	Displays the host name of the monitoring manager specified as the secondary manager for multiple monitoring. You cannot change this property.
Agent Configuration		ALL Container Collection for Process <sup>#3</sup>	<p>Selects whether process information only for the Docker host environment is to be collected.</p> <ul style="list-style-type: none"> <li>• Yes: Process information for the Docker host environment and Docker container environments is collected.</li> <li>• No: Process information only for the Docker host environment is collected.</li> </ul>
		User Defined Record DataMaxCount <sup>#4</sup>	Specifies the maximum number of instances for each user record.
		Use Processor Information Object	<p>Specifies whether to use the Processor Information object to collect performance data for processors. If you specify Yes, you can collect performance data for more than 64 processors in the system that contains the Processor Information object.</p> <ul style="list-style-type: none"> <li>• Yes: Use</li> <li>• No: Do not use</li> </ul>
Application monitoring setting	<i>instance-name</i> <sup>#5</sup>	--	Shows the monitoring instance name that is added.
		Process[01-15] Kind <sup>#6</sup>	<p>Shows the process type:</p> <ul style="list-style-type: none"> <li>• None: No process is specified.</li> <li>• Service Name: See the value of the Service Name field of the PD_SVC record.</li> <li>• Command Line: See the value of the Program field of the PD record.</li> </ul>
		Process[01-15] Name <sup>#6</sup>	Enter a process name that does not exceed 127 bytes.
		Process[01-15] Range <sup>#6</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 None if you do not want to delete a monitoring instance.
Advanced application monitoring		--	Specifies settings for collecting information about the operating status of processes.
Advanced application monitoring	Application monitoring setting	Case Sensitive	<p>Specifies whether to distinguish letter-case in comparisons to monitoring conditions.</p> <ul style="list-style-type: none"> <li>• Yes: Case sensitive</li> <li>• No: Not case sensitive</li> </ul>

Folder name			Property name	Explanation
Advanced application monitoring	Application monitoring setting	<i>application-name</i> <sup>#7</sup>	--	The name of an added application.
			Virtual Environment ID <sup>#3</sup>	Sets a 64-byte hexadecimal value as an identifier of a virtual environment (container) to specify the range of process data to be collected for the PD_APP2 and PD_APPD records. Sets 0 if you collect data only from the Docker host environment. If this property is not set, data collection is performed for all processes.
			Monitoring[01-15] Label <sup>#8</sup>	Specifies a name of no more than 31 bytes for identifying the monitoring condition. Monitoring[01-15] is set by default. If nothing is specified, Monitoring[01-15] is set. The value specified for this property must be unique.
			Monitoring[01-15] Field <sup>#8</sup>	The field to be monitored. <ul style="list-style-type: none"> <li>None: No field specified.</li> <li>Program Name: See the Program Name field of the PD_APS record.</li> <li>Command Line: See the Command Line field of the PD_APS record.</li> <li>Service Name: See the Service Name field of the PD_ASVC record.</li> </ul> The default is None.
			Monitoring[01-15] Condition <sup>#8</sup>	Specifies the monitoring condition (as a maximum of 4,096 bytes). The default is one space.
			Monitoring[01-15] Range <sup>#8</sup>	Specifies the minimum and maximum thresholds for the monitoring count, connected by a hyphen (-) (for example, 1-2). You can specify values in the range from 0 to 65535.
	ADDITION OR DELETION A SETTING		ADD AN APPLICATION MONITORING SETTING	Specifies the name of an application to be added (as a maximum of 63 bytes). The value specified for this property must be unique.
			DELETE AN APPLICATION MONITORING SETTING	Selects the name of an application to be deleted. The default is that no application names are shown.
User Command Setting			User Command Execution Timing	By using the functionality for periodically executing user commands, specify when to execute user commands. <ul style="list-style-type: none"> <li>After: Execute user commands after record collection.</li> <li>Before: Execute user commands before record collection.</li> </ul> By default, After is set.
			User Command Timeout	If you select Before as the User Command Execution Timing property of the functionality for periodically executing user commands, set the time (seconds) <sup>#9</sup> when the execution of user commands is discontinued by specifying an integer in the range from 1 to 86400. By default, 5 is set.
User Command Setting	<i>user-record-name</i> <sup>#10</sup>	Execute	Specifies whether to use the function for periodically executing user commands. <ul style="list-style-type: none"> <li>Yes: Use.</li> <li>No: 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.	



Folder name		Property name	Explanation
User Command Setting	<i>user-record-name</i> <sup>#10</sup>	UserCommand	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 [8. Records](#).

#2

If Sync Collection With is displayed, neither Collection Interval nor Collection Offset is displayed.

#3

Displayed only in Windows Server 2016 and later.

#4

The target records for these properties are PD\_UPD, PD\_UPDB, PI\_UPI, PI\_UPIB, and PI\_XUI1 to PI\_XUI5 records.

#5

The instance name set in ADD AN APPLICATION MONITORING SETTING in ADDITION OR DELETION A SETTING is displayed for the folder name. For details about how to set the instance name, see [6.7 Settings for collecting information about the application operating status](#).

#6

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.

#7

The application name set in the property ADD AN APPLICATION MONITORING SETTING in **Advanced Application Monitoring** > **ADDITION OR DELETION A SETTING** is displayed for the folder name.

#8

In Monitoring[01-15] Label, Monitoring[01-15] Field, Monitoring[01-15] Condition, and Monitoring[01-15] Range, a value in the range from 01 and 15 is set for [01-15] in each property name. Examples of the property items that are actually displayed include Monitoring01 Label, Monitoring06 Field, Monitoring10 Condition, and Monitoring15 Range.

#9

The specified time when the execution of user commands is discontinued must not affect the timing of other record collection processing.

#10

PD\_UPD, PD\_UPDB, PI\_UPI, PI\_UPIB, and PI\_XUI[1-5] are displayed as folder names. [1-5] shown beside the folder name PI\_XUI denotes a number in the range from 1 to 5 that is displayed beside the actual folder name, as in PI\_XUI1, PI\_XUI3, and PI\_XUI5.

## F. List of Files and Folders

This appendix lists the files and folders of PFM - Agent for Platform.

The following is the Performance Management installation folder:

*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\	--	PFM - Agent for Platform (Windows) root folder
	<i>readme_language code.txt</i>	README.TXT
	<i>version.txt</i>	Version information
	*.*	Various types of files in PFM - Agent for Platform (Windows)
<i>installation-folder</i> \agtt\agent\	--	Base folder of Agent Collector service
	COSLMMI.DB	JP1/SLM linkage setting data file
	COSLMMI.IDX	Index file for JP1/SLM linkage setting data files
	COSLMMI.LCK	Lock file for JP1/SLM linkage setting data files
	agttterr.log	Internal trace log
	func_trace00.log	
	func_trace01.log	
	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 (09-00 and earlier)
	jpcapp2 <sup>#1</sup>	Application definition file (10-00 and later)
	jpcappcvt.ini	Convert command settings file
	jpcappcvt.ini.model	Model file for the convert command settings file
	jpcappcvt.exe	Convert command executable program
	jpcappcvtJPN.dll	Satellite DLL file of jpcappcvtJPN.dll
	jpcconfig.exe	Collection data addition utility execution program
	jpcconfigJPN.dll	Satellite DLL file of jpcconfigJPN.dll
x64exec.exe	x64 native execution program	
jpctRegistry32.exe	32-bit executable module	

Folder name	File name	Explanation
<i>installation-folder</i> \agtt\agent\	jpctRegistry64.exe	64-bit executable module
	jpctRegistry32Sub.exe	Collection auxiliary process
	map.log	Internal trace log file for the index map obtained from the 32-bit performance registry
	map64.log	Internal trace log file for the index map obtained from the 64-bit performance registry
<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
	jpccagttmsg.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
	jpcuser.exe	Execution program for the function for collecting user-specific performance data
	jpcuser.ini	Configuration file for the function for collecting user-specific performance data
	jpcuser.ini.model	Model configuration file for the user-specific performance data collection functionality
	jpcusercommand.ini	Configuration file for periodically executing user commands
	jpcusercommand.ini.model	Model configuration file for the functionality for periodically executing user commands
<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\agent\jpcuser\userdata\temp	--	User data files (temporary)
<i>installation-folder</i> \agtt\agent\PerfRegistryData	--	Folder holding jpctRegistry performance data
<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
	jpcesto.ini	Agent Store service settings file
	jpcesto.ini.model	Model file for the Agent Store service settings file

Folder name	File name	Explanation
<i>installation-folder</i> \agtt\store\ <i></i>	*.DAT	Data model definition file
<i>installation-folder</i> \agtt\store\backup\ <i></i>	--	Default database backup destination folder
<i>installation-folder</i> \agtt\store\partial\ <i></i>	--	Default database partial-backup destination folder
<i>installation-folder</i> \agtt\store\dump\ <i></i>	--	Default database export destination folder
<i>installation-folder</i> \agtt\store\import\ <i></i>	--	Default database import destination folder
<i>installation-folder</i> \agtt\store\log\ <i></i>	--	Storage folder for internal log files of the Agent Store service
<i>installation-folder</i> \agtt\store\STPD\ <i></i>	--	PD database specific folder
<i>installation-folder</i> \agtt\store\STPI\ <i></i>	--	PI database specific folder
<i>installation-folder</i> \agtt\store\STPL\ <i></i>	--	PL database specific folder
<i>installation-folder</i> \auditlog\ <i></i>	--	Default output folder for action log files
	jpcauditn.log <sup>#2</sup>	Action log file
<i>installation-folder</i> \setup\ <i></i>	--	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
<i>installation-folder</i> \setup\extract	--	Setup file expansion folder
<i>installation-folder</i> \setup\update\ <i></i>	--	Version upgrade work folder
<i>installation-folder</i> \setup\update\agtt\ <i></i>	--	Folder for PFM - Agent for Platform (Windows) version upgrade
	*.*	Files for PFM - Agent for Platform (Windows) version upgrade

**Legend:**

--: Not applicable

#1

This file exists only when process monitoring settings are specified.

#2

*n* is a numeric value. The number of log files can be changed in the *jpccomm.ini* file.

The redistribution files for Visual Studio are also installed. The following table lists and describes the redistribution files for Visual Studio 2010 that are installed.

**Table F–2: List of Visual Studio 2010 redistributable files to be installed**

Folder name	File name	Explanation
%Systemroot%\system32	mfc100.dll	Microsoft Visual C++ 2010 SP1 MFC redistributable files (x64)
	mfc100u.dll	

Folder name	File name	Explanation
%Systemroot%\system32	mfc100.dll	Microsoft Visual C++ 2010 SP1 MFC redistributable files (x64)
	mfc100u.dll	
	msvc100.dll	Microsoft Visual C++ 2010 SP1 CRT redistributable files (x64)
	msvcr100.dll	
	mfc100chs.dll	Microsoft Visual C++ 2010 SP1 MFCLOC redistributable files (x64)
	mfc100cht.dll	
	mfc100deu.dll	
	mfc100enu.dll	
	mfc100esn.dll	
	mfc100fra.dll	
	mfc100ita.dll	
	mfc100jpn.dll	
	mfc100kor.dll	
	mfc100rus.dll	

## G. Upgrade Procedure and Notes on Upgrading

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To upgrade PFM - Agent for Platform to a later version, install the later version by overwriting the earlier version. For details about installation operations, see [4. Installation and Setup in Windows](#).

For notes about upgrading the Performance Management programs, see the section that presents the notes on upgrading in the chapter and appendix describing installation and setup in the *JPI/Performance Management Planning and Configuration Guide*.

The following are notes about upgrading PFM - Agent for Platform:

- When upgrading the PFM - Agent for Platform version, do not uninstall the earlier version. If you uninstall it, performance data and other data created with the earlier version are also deleted, and as a result, the later version will not work.
- When a later version of PFM - Agent for Platform is installed by overwriting an earlier version, the following items are automatically updated:
  - Store database file of the Agent Store service
  - `ini` file
- When this product is upgraded, the existing Store database is also automatically upgraded. It may take a few dozen of minutes for the installation to finish, depending on the size of the Store database.
- The maximum size of Store database files (\*.DB and \*.IDX) after upgrading is 1.8 GB. However, if a limit is set for the file size or file system by using the `ulimit` command, then the maximum file size is 90% of that limit, or 1.8 GB, whichever is less. If the size of Store database files exceeds this maximum size, after upgrading, the data that does not fit in the maximum size is deleted, and the message KAVE05834-W is output to the common message log. The data to be deleted is selected by using the following rules:
  - For the PD database or PL database  
Data is deleted sequentially, starting with the oldest data.
  - For the PI database  
Data is deleted sequentially based on the period by which it is summarized, in the following order: minute, hour, day, week, month, and year. When the summary period is the same, the data is deleted sequentially, starting with the oldest data.

As mentioned above, old data may get deleted. If necessary, output the performance data to a CSV file before upgrading. For details on outputting a CSV file, see the chapter explaining outputting reports in the manual *JPI/Performance Management User's Guide*.

- When Store databases are upgraded, the data model changes, and therefore the disk usage of the Store databases changes. Based on the new data model, please review, and if necessary change, the collection items and frequency as well as the storage conditions of the Store databases.
- When an upgrade installation is performed, the Store database is automatically updated. Because of this, free space equal to twice the size of the Store database is temporarily needed on the disk where the database is stored. Therefore, before you perform an upgrade installation, make sure there is sufficient space on the disk where the Store database is stored.

## H. Version Compatibility

---

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 earlier version can also be used in the later 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

PFM - Agent for Platform version	Data model version	Alarm table version of the monitoring template
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
10-00	8.0	09.10
11-00		
11-01		
11-10		
11-50	8.4	10.00
12-00		
12-50		

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.

For details about version compatibility, see the version compatibility description in the appendix to the *JPI/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 JPI 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 [1.4 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 x.x, output-item-1=value-1, output-item-2=value-2, . . . , output-item-n=value-n
```

### (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 [1.4 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	--	x.x	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	KAVExxxx-x	Message ID of the product
5	Date and time	date	YYYY-MM-DDThh:mm:ss.sssTZD <sup>#</sup>	Date, time, and time zone indication identifying when the action log was output
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:euid	<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>PFM - Agent-service-ID</li> <li>added-deleted-or-updated-user-name (PFM user)</li> </ul>	Intended object for the operation
		obj:table	alarm-table-name	
		obj:alarm	alarm-name	
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
		auth:mode	<ul style="list-style-type: none"> <li>PFM authentication mode pfm</li> <li>JP1 authentication mode jp1</li> <li>OS user os</li> </ul>	Authentication mode of the user who executed the command or service

No.	Output item		Value	Explanation
	Item name	Output attribute name		
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 <code>jpctool alarm</code> 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: cmd=executed-command-line. Email sending: mailto=destination-email-address.

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.
2. Using a text editor, edit the jpccomm.ini file.
3. 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>
4	Action Log Num	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. <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>

No.	Item	Explanation
4	Action Log Num	<p>If a character string containing a non-numeric value is specified, an error message is output and the default value 5 is set.</p> <p>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.</p> <p>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. Linking to JP1/SLM

The monitoring performed by PFM - Agent for Platform can be enhanced by linking to JP1/SLM.

PFM - Agent for Platform provides for PFM - Manager a set of default JP1/SLM monitoring items to facilitate monitoring on JP/SLM.

For multi-instance records, this monitoring collects records that match the values specified in keys. Check the collection results of each record associated with a collection target key.

Table J–1: Default monitoring items that PFM - Agent for Platform provides to PFM - Manager

Display name in JP1/SLM	Description	Record (record ID)	Key (PFM - Manager name)	Field name
CPU Usage	Processor usage (%)	System Overview (PI)	--	PCT_TOTAL_PROCESSOR_TIME
Available Memory	Unused size in the physical memory area (MB)	System Overview (PI)	--	AVAILABLE_BYTES
Logical Disk Free Size	Unused area in the logical disk space (MB)	Logical Disk Overview (PI_LOGD)	ID (INSTANCE)	FREE_MEGABYTES
Disk Busy %	Percentage of elapsed time when the disk was busy processing a read or write request (%)	Physical Disk Overview (PI_PHYD)	ID (INSTANCE)	PCT_DISK_TIME
Network Bytes	Amount of data sent and received over the network interface (bytes/second)	Network Interface Overview (PI_NETI)	Instance (INSTANCE)	BYTES_TOTAL_PER_SEC

Legend:

--: None

You can provide the default monitoring items to PFM - Manager by copying the setup files and executing the setup command. For details, see [4.4.1 Registering PFM - Agent for Platform in PFM - Manager and PFM - Web Console](#).

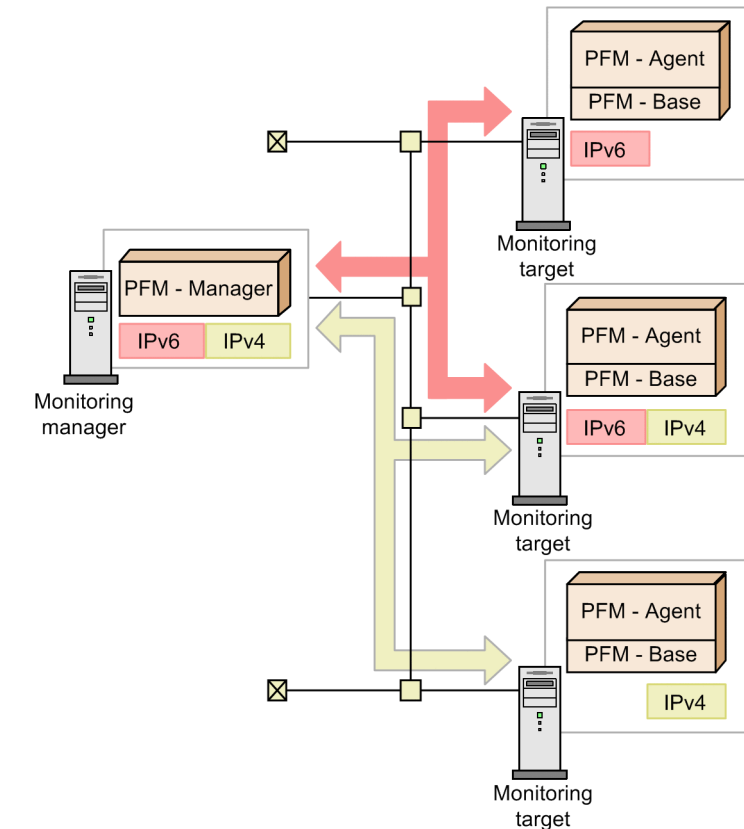


## K. Communication in IPv4 and IPv6 Environments


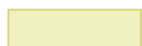

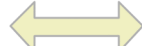

Performance Management supports IPv6 network configurations in addition to IPv4 environments. Performance Management can also be used in network configurations that support a mixture of IPv4 and IPv6 environments.

PFM - Agent for Platform can communicate with PFM - Manager over IPv6, but only if both are hosted on Windows or Linux.

Figure K-1: Application scope for communication in IPv4 and IPv6 environments



Legend:

-  : Programs provided by Performance Management
-  : IPv4 environment
-  : IPv6 environment
-  : IPv4 communication
-  : IPv6 communication

You execute the `jpcconf ipv6 enable` command to enable communication over IPv6. For details about the `jpcconf ipv6 enable` command, see the chapter that describes commands in the manual *JP1/Performance Management Reference*. For details about the timing and conditions for executing the `jpcconf ipv6 enable` command, see the chapter that describes network configurations that include IPv6 environments in the *JP1/Performance Management Planning and Configuration Guide*.

## L. Version Changes

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This appendix presents the changes in the manuals for each version.

### L.1 Changes in 12-50

None.

### L.2 Changes in 12-00<sup>#</sup>

- The following OSs are no longer supported:  
PFM - Manager and PFM - Web Console
  - Microsoft(R) Windows Server(R) 2008 R2
  - AIX V6.1
  - AIX V6.2
  - AIX V7.2

PFM - Base

- Microsoft(R) Windows Server(R) 2008 R2
- AIX V6.1
- Solaris 10 (SPARC)

PFM - Agent for Platform

- Microsoft(R) Windows Server(R) 2008 R2
- Notes for usage that were listed in the *Release Notes* were added.
- The explanation for the common message log was changed.
- The following OS is now supported:
  - Microsoft(R) Windows Server(R) 2019

#

These changes include the functions supported after the release of 12-00.

### L.3 Changes in 11-50

- Processes running in each container can now be monitored when the Docker environment (Windows container function) is used with Windows Server 2016.
- The following alarm tables were added:
  - PFM Windows Template Alarms [APP] 10.00
  - PFM Windows Template Alarms [PS] 10.00
- A modification has been introduced so that when no user data file has been created due to a failure to execute a user command or for other reasons, collection of user-specific performance data is skipped.

- The following reports were added:
  - Application Status (8.4)
  - Application Process Count (8.4)
  - Application Process Status (8.4)
  - Monitoring Process Detail (8.4)
- The following field has been added to the PD, PD\_APP2, PD\_APSE, and PD\_APS records:
  - Virtual Env ID

In addition, the file size of this record was changed.

- The description of the Event Type ID field of the PD\_ELOG record was modified.
- A note regarding the PD\_SVC record was added.
- The following messages were added:  
KAVF11508-W, KAVF11509-I, KAVF11510-W, KAVF11650-W
- The following messages were changed:  
KAVF11007-W, KAVF11907-W
- The following properties were added to the Agent Collector service:
  - ALL Container Collection for Process
  - Virtual Environment ID

## L.4 Changes in 11-10

- The following records were added to user-specific performance data:  
PI\_XUI1, PI\_XUI2, PI\_XUI3, PI\_XUI4, and PI\_XUI5
- The following OSs are now supported:
  - Microsoft(R) Windows Server(R) 2016 Datacenter
  - Microsoft(R) Windows Server(R) 2016 Standard
- By using the functionality for periodically executing user commands, the user can now select when to execute user commands.
- The following messages were added:  
KAVF11504-W, KAVF11505-I, KAVF11506-W, KAVF11507-I

## L.5 Changes in 11-01

- A logical host environment is now supported and cluster operation is now possible.
- The following messages were added:  
KAVF11503-E, KAVF11550-E to KAVF11552-E, and KAVF11850-E to KAVF11853-E
- The following messages were changed:  
KAVF11301-E and KAVF11957-I
- A description indicating that unique port numbers must be assigned within the device was added.

## L.6 Changes in 11-00

### (1) Changes from the manual (3021-3-056(E)) to the manual (3021-3-A51(E))

- The following OSs are no longer supported:  
PFM - Manager and PFM - Web Console
  - Microsoft(R) Windows Server(R) 2003 (including R2)
  - Microsoft(R) Windows Server(R) 2008 (except R2)
  - AIX 6 (32bit)
  - AIX 7 (32bit)
  - HP-UX 11i V3 (IPF)
  - Red Hat(R) Enterprise Linux(R) 5 (x86)
  - Red Hat(R) Enterprise Linux(R) 5 (AMD/Intel 64)
  - Red Hat(R) Enterprise Linux(R) 5 Advanced Platform (AMD/Intel 64)
  - Red Hat(R) Enterprise Linux(R) 5 Advanced Platform (x86)
  - Red Hat(R) Enterprise Linux(R) Server 6 (32-bit x86)
  - Solaris 10
- PFM - Base and PFM - Agent for Platform
  - Microsoft(R) Windows Server(R) 2003 (including R2)
  - Microsoft(R) Windows Server(R) 2008 (except R2)
- The following OSs are now supported:  
PFM - Manager and PFM - Web Console
  - CentOS 6.1 (x64) and later
  - CentOS 7.1 and later
  - Red Hat(R) Enterprise Linux(R) Server 7.1 and later
  - Oracle Linux(R) Operating System 6.1 (x64) and later
  - Oracle Linux(R) Operating System 7.1 and later
  - SUSE Linux(R) Enterprise Server 12
- The following properties were added:  
Agent Store service properties
  - Multiple Manager ConfigurationAgent Collector service properties
  - Monitoring Console Https
  - Multiple Manager Configuration
  - Over 10 Sec Collection Time
  - Realtime Report Data Collection Mode
  - Use Processor Information Object
- The product name was changed from JP1/ITSLM to JP1/SLM.

- Linkage with Network Node Manager (NNM) was discontinued.
- ODBC-based application programs were discontinued.
- The following languages were added as languages available in Performance Management:
  - Korean
  - Spanish
  - Chinese (simplified characters)
  - German
  - French
  - Russian
- Notes were added for when the startup type of the Windows Management Instrumentation service (service name: Winmgmt) was set to Disabled.
- The following messages were changed:  
KAVF11304-W, KAVF11321-E, KAVF11322-E, KAVF11324-E to KAVF11327-E

## **(2) Changes from the manual (3021-3-354(E)) to the manual (3021-3-A51(E))**

- The following OSs are no longer supported:  
PFM - Manager and PFM - Web Console
  - Microsoft(R) Windows Server(R) 2003 (including R2)
  - Microsoft(R) Windows Server(R) 2008 (except R2)
  - AIX 6 (32bit)
  - AIX 7 (32bit)
  - HP-UX 11i V3 (IPF)
  - Red Hat(R) Enterprise Linux(R) 5 (x86)
  - Red Hat(R) Enterprise Linux(R) 5 (AMD/Intel 64)
  - Red Hat(R) Enterprise Linux(R) 5 Advanced Platform (AMD/Intel 64)
  - Red Hat(R) Enterprise Linux(R) 5 Advanced Platform (x86)
  - Red Hat(R) Enterprise Linux(R) Server 6 (32-bit x86)
  - Solaris 10
- The following OSs are now supported:  
PFM - Base and PFM - Agent for Platform
  - Microsoft(R) Windows Server(R) 2003 (including R2)
  - Microsoft(R) Windows Server(R) 2008 (except R2)
- The following OSs are now supported:  
PFM - Manager and PFM - Web Console
  - CentOS 6.1 (x64) and later
  - CentOS 7.1 and later
  - Red Hat(R) Enterprise Linux(R) Server 7.1 and later
  - Oracle Linux(R) Operating System 6.1 (x64) and later

- Oracle Linux(R) Operating System 7.1 and later
- SUSE Linux(R) Enterprise Server 12
- The following products were added as monitoring agents:
  - PFM - Agent for Cosminexus
  - PFM - Agent for DB2
  - PFM - Agent for Domino
  - PFM - Agent for Exchange Server
  - PFM - Agent for HiRDB
  - PFM - Agent for IIS
  - PFM - Agent for OpenTP1
  - PFM - Agent for WebLogic Server
  - PFM - Agent for WebSphere Application Server
- The following properties were added:
 

Agent Store service properties

  - Multiple Manager Configuration

Agent Collector service properties

  - Monitoring Console Https
  - Multiple Manager Configuration
  - Over 10 Sec Collection Time
  - Realtime Report Data Collection Mode
  - Use Processor Information Object
- The product name was changed from JP1/ITSMLM to JP1/SLM.
- Linkage with Network Node Manager (NNM) was discontinued.
- ODBC-based application programs were discontinued.
- The following languages were added as languages available in Performance Management:
  - Korean
  - Spanish
  - German
  - French
  - Russian
- Notes were added for when the startup type of the Windows Management Instrumentation service (service name: Winmgmt) was set to Disabled.
- The following messages were changed:
 

KAVF11304-W, KAVF11321-E, KAVF11322-E, KAVF11324-E to KAVF11327-E

## L.7 Changes in 10-00

### (1) Changes in the manual (3021-3-056(E))

- Capability to collect 64-bit performance data was added.
- As part of the capability to collect 64-bit performance data, the following records were added:
  - Generic Data Detail64 (PD\_GD64)
  - Generic Data Interval64 (PI\_GI64)
- The process used for collection processing now depends on the OS, with the addition of the following collection processes:
  - jpctRegistry32.exe (32-bit edition only)
  - jpctRegistry64.exe (64-bit edition only)
  - jpctRegistry64Sub.exe (64-bit edition only)
- Process monitoring conditions can now be specified by using up to 4,096 bytes of data.
- Linkage to JP1/ITSLM was facilitated by providing the following default monitoring items to PFM - Manager:
  - PCT\_TOTAL\_PROCESSOR\_TIME
  - AVAILABLE\_BYTES
  - FREE\_MEGABYTES
  - PCT\_DISK\_TIME
  - BYTES\_TOTAL\_PER\_SEC
- Performance data can now be collected in the IPv6 environment when the host on which PFM - Agent for Platform is installed is Microsoft(R) Windows Server(R) 2008 R2.
- The following messages were added:  
KAVF11319-E, KAVF11320-E, KAVF11321-E, KAVF11322-E, KAVF11323-E, KAVF11324-E,  
KAVF11325-E, KAVF11326-E, KAVF11327-E, KAVF11511-W, KAVF11512-W
- The version of the data model was changed from 7.8 to 8.0.

### (2) Changes in the manual (3021-3-354(E))

- Capability to collect 64-bit performance data was added.
- As part of the capability to collect 64-bit performance data, the following records were added:
  - Generic Data Detail64 (PD\_GD64)
  - Generic Data Interval64 (PI\_GI64)
- The process used for collection processing now depends on the OS, with the addition of the following collection processes:
  - jpctRegistry32.exe (32-bit edition only)
  - jpctRegistry64.exe (64-bit edition only)
  - jpctRegistry64Sub.exe (64-bit edition only)
- Linkage to JP1/ITSLM was facilitated by providing the following default monitoring items to PFM - Manager:
  - PCT\_TOTAL\_PROCESSOR\_TIME

- AVAILABLE\_BYTES
- FREE\_MEGABYTES
- PCT\_DISK\_TIME
- BYTES\_TOTAL\_PER\_SEC
- Performance data can now be collected in the IPv6 environment when the host on which PFM - Agent for Platform is installed is Microsoft(R) Windows Server(R) 2008 R2 or Windows Server 2012.
- The following messages were added:  
KAVF11319-E, KAVF11320-E, KAVF11321-E, KAVF11322-E, KAVF11323-E, KAVF11324-E,  
KAVF11325-E, KAVF11326-E, KAVF11327-E, KAVF11511-W, KAVF11512-W
- The version of the data model was changed from 7.8 to 8.0.

## L.8 Changes in 09-10

### (1) Changes in the manual (3020-3-R48-21(E))

- Capability to monitor the operating status of processes was added.
- As part of the capability to monitor the operating status of processes, the following records were added.
  - Application Process Detail (PD\_APPD)
  - Application Process Interval (PD\_APSI)
  - Application Process Overview (PD\_APS)
  - Application Service Overview (PD\_ASVC)
  - Application Summary Extension (PD\_APP2)
- As part of the capability to monitor the operating status of processes, the following alarms were added:
  - Application Status
  - Process Existence
- As part of the capability to monitor the operating status of processes, the PFM Windows Template Alarms [PS] 09.10 alarm table version was changed from 9.00 to 09.10.
- Setup commands can now be executed non-interactively.
- As part of the capability to monitor the operating status of processes, the jpcapp2 application definition file was added.
- As part of the capability to monitor the operating status of processes, the PFM Windows Template Alarms [APP] 09.10 alarm table was added.
- As part of the capability to monitor the operating status of processes, the following reports were added:
  - Application Process Count
  - Application Process Status
  - Application Status
  - Monitoring Process Detail
- As part of the capability to monitor the operating status of processes, the jpcappcvt command was added.
- The following messages were added:



KAVF11600-Q, KAVF11601-I, KAVF11602-E, KAVF11603-W, KAVF11604-W, KAVF11605-W, KAVF11606-Q, KAVF11607-E, KAVF11608-E, KAVF11609-E, KAVF11610-E, KAVF11611-E

- The WMI log was added to the information that is required to be collected in the Windows environment.
- The `jpcapp2` file was added to the information that is required to be collected in Performance Management.
- A list of items about performance data to be collected when a problem occurs was added.
- Estimates of memory requirements were changed.
- Estimates of disk space requirements were changed.
- As part of the capability to monitor the operating status of processes, the Advanced Application Monitoring folder was added to the Agent Collector service properties.
- As part of the capability to monitor the operating status of processes, the following files were added:
  - `jpcapp2`
  - `jpcappcvt.ini`
  - `jpcappcvt.ini.model`
  - `jpcappcvt.exe`
- The version of the data model was changed from 7.6 to 7.8.
- The monitoring template alarm table version was changed from 9.00 to 09.10.

## L.9 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 JP1/IM has been enhanced. Accordingly, the following folder has been added to the list of properties for the Agent Collector service:  
JP1 Event Configurations
  - The following messages have been added:  
KAVF11500-W to KAVF11502-W
  - The data model version has changed from 7.4 to 7.6.
  - With the addition of new-format commands compatible with 08-51 or earlier commands, the commands for 09-00 or later is now indicated as follows:  
*command-for-09-00-or-later* (*command-for-08-51-or-earlier*)

## M. Reference Material for This Manual

This appendix provides reference information, including various conventions, for this manual.

### M.1 Related publications

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

For JP1/Performance Management publications:

- *JP1 Version 12 Performance Management: Getting Started* (3021-3-D75(E))
- *JP1 Version 12 JP1/Performance Management Planning and Configuration Guide* (3021-3-D76(E))
- *JP1 Version 12 JP1/Performance Management User's Guide* (3021-3-D77(E))
- *JP1 Version 12 JP1/Performance Management Reference* (3021-3-D78(E))

For JP1 publications:

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

### M.2 Conventions: Abbreviations for product names

This manual uses the following abbreviations for product names:

Abbreviation		Full name or meaning
AIX		AIX V7.1
		AIX V7.2
HP-UX	HP-UX 11i	HP-UX 11i V3 (IPF)
JP1/Base		JP1/Base
JP1/IM	JP1/IM - Manager	JP1/Integrated Management - Manager
	JP1/IM - View	JP1/Integrated Management - View
JP1/ITSLM (10-50 or earlier)	JP1/ITSLM - Manager	JP1/IT Service Level Management - Manager
	JP1/ITSLM - UR	JP1/IT Service Level Management - User Response
JP1/SLM	JP1/SLM - Manager	JP1/Service Level Management - Manager
	JP1/SLM - UR	JP1/Service Level Management - User Response
JP1/Software Distribution		Job Management Partner 1/Software Distribution Client
		Job Management Partner 1/Software Distribution Manager
		Job Management Partner 1/Software Distribution SubManager

Abbreviation			Full name or meaning
Linux	CentOS	CentOS 6 (x64)	CentOS 6.1 (x64) and later
		CentOS 7	CentOS 7.1 and later
		CentOS 8	CentOS 8.1 and later
	Linux 6 (x64)		Red Hat(R) Enterprise Linux(R) Server 6.1 (64-bit x86_64) and later
	Linux 7		Red Hat(R) Enterprise Linux(R) Server 7.1 and later
	Linux 8		Red Hat Enterprise Linux(R) Server 8.1 and later
	Oracle Linux	Oracle Linux 6 (x64)	Oracle Linux(R) Operating System 6.1 (x64) and later
		Oracle Linux 7	Oracle Linux(R) Operating System 7.1 and later
		Oracle Linux 8	Oracle Linux(R) Operating System 8.1 and later
	SUSE Linux	SUSE Linux 12	SUSE Linux(R) Enterprise Server 12
SUSE Linux 15		SUSE Linux(R) Enterprise Server 15	
Performance Management			JP1/Performance Management
PFM - Agent	PFM - Agent for JP1/AJS <sup>#</sup>	PFM - Agent for JP1/AJS3	JP1/Performance Management - Agent Option for JP1/AJS3
	PFM - Agent for Cosminexus <sup>#</sup>		JP1/Performance Management - Agent Option for uCosminexus Application Server
	PFM - Agent for DB2		JP1/Performance Management - Agent Option for IBM DB2
	PFM - Agent for Domino		JP1/Performance Management - Agent Option for IBM Lotus Domino
	PFM - Agent for Enterprise Applications		JP1/Performance Management - Agent Option for Enterprise Applications
	PFM - Agent for Exchange Server <sup>#</sup>		JP1/Performance Management - Agent Option for Microsoft(R) Exchange Server
	PFM - Agent for HiRDB <sup>#</sup>		JP1/Performance Management - Agent Option for HiRDB
	PFM - Agent for WebSphere MQ <sup>#</sup>		JP1/Performance Management - Agent Option for IBM WebSphere MQ
	PFM - Agent for IIS <sup>#</sup>		JP1/Performance Management - Agent Option for Microsoft(R) Internet Information Server
	PFM - Agent for Microsoft SQL Server		JP1/Performance Management - Agent Option for Microsoft(R) SQL Server
	PFM - Agent for OpenTP1 <sup>#</sup>		JP1/Performance Management - Agent Option for OpenTP1
PFM - Agent for Oracle		JP1/Performance Management - Agent Option for Oracle	

Abbreviation		Full name or meaning	
PFM - Agent	PFM - Agent for Platform	PFM - Agent for Platform (UNIX)	JP1/Performance Management - Agent Option for Platform (for UNIX(R) systems)
		PFM - Agent for Platform (Windows)	JP1/Performance Management - Agent Option for Platform (for Windows(R) systems)
	PFM - Agent for Service Response		JP1/Performance Management - Agent Option for Service Response
	PFM - Agent for WebLogic Server <sup>#</sup>		JP1/Performance Management - Agent Option for Oracle(R) WebLogic Server
	PFM - Agent for WebSphere Application Server <sup>#</sup>		JP1/Performance Management - Agent Option for IBM WebSphere Application Server
PFM - Base		JP1/Performance Management - Base	
PFM - Manager		JP1/Performance Management - Manager	
PFM - RM	PFM - RM for Microsoft SQL Server		JP1/Performance Management - Remote Monitor for Microsoft(R) SQL Server
	PFM - RM for Oracle		JP1/Performance Management - Remote Monitor for Oracle
	PFM - RM for Platform		JP1/Performance Management - Remote Monitor for Platform
	PFM - RM for Virtual Machine		JP1/Performance Management - Remote Monitor for Virtual Machine
PFM - Web Console		JP1/Performance Management - Web Console	
Solaris	Solaris 11	Solaris 11 (SPARC)	

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

#

This product operates only in a Japanese environment.

## M.3 Conventions: Acronyms

This manual also uses the following acronyms:

Acronym	Full name or meaning
API	Application Programming Interface
CPU	Central Processing Unit
CSV	Comma Separated Values
DDE	Dynamic Data Exchange
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name System
FQDN	Fully Qualified Domain Name
FTP	File Transfer Protocol

Acronym	Full name or meaning
HTML	Hyper Text Markup Language
HTTP	Hyper Text Transfer Protocol
ICMP	Internet Control Message Protocol
IMAP	Internet Message Access Protocol
IP	Internet Protocol
IPF	Itanium Processor Family
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
MTA	Message Transfer Agent
NAPT	Network Address Port Translation
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
SCM	Service Control Manager
SCSI	Small Computer System Interface
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
UAC	User Access Control
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

## M.4 Conventions: Formats 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 machine 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.

## M.5 Conventions: Performance Management installation folders

The default installation folders for the Windows edition of Performance Management are as follows.

### PFM - Base installation folder

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

In this manual, *installation-folder* refers to the PFM - Base installation folder.

### PFM - Manager installation folder

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

### PFM - Web Console installation folder

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

## M.6 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.

## N. 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.

## cluster system

A cluster system runs as a single system configured from multiple linked server systems. There are two major types of cluster systems: an HA (High Availability) cluster systems and load-balancing cluster systems.

In this manual, "cluster system" refers to an HA cluster system.

## 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.

## executing node

Of the server systems in a cluster system, the node that is currently executing applications (node whose logical host is active).

## failover

In the event of a cluster system failure, the process by which the standby node takes over (from the executing node) processing of the server that executes applications.

## field

Individual operating information included in records. Fields correspond to monitoring items in Performance Management. For example, monitoring items such as **CPU %** or **Page Faults/sec in System Overview(PI)** records correspond to fields.

## HA cluster system

A cluster system designed to implement high availability by continuing operation even if a failure occurs. If a failure occurs on the server currently executing applications, a separate standby server takes over and continues the processing of applications. Accordingly, because application processing is not interrupted when a failure occurs, availability improves.

In this manual, "cluster system" refers to an HA cluster system.

## 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*.

## JP1/SLM

A product that helps maintain service levels by monitoring system performance from various perspectives, such as a business system's performance as experienced by a service user.

Monitoring of the status of operations is enhanced by linking to JP1/SLM.

## lifetime

The duration in which the integrity of the performance data collected into each record can be guaranteed.

## logical host

A logical server that provides the JP1 execution environment for operation in a cluster system. If a failure occurs in a logical host, the executing node is switched to the standby node. Each logical host has a unique IP address, and the IP address is inherited by the standby node at failover. Thus, when the physical server is failed over, clients can still access the logical host using the same IP address. To clients, it appears as if one server is operating continuously.

## 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.

## non-interactive (commands)

A mode of executing commands in which user entries required for the execution of commands are provided by means of specification of options or by reading from a definition file rather than by prompting the user to enter responses.

Executing commands non-interactively reduces the burden on the user by helping to automate the installation of the operation monitoring system.

## ODBC key fields

A primary key required for PFM - Manager or PFM - Base to use the record data stored in a 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

### physical host

An environment unique to each server in a cluster system. When a failover occurs, the environment of the physical host is not inherited by the other server.

### 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 collection of operating information that is classified according to the purpose. For example, System Overview(`PI`) records are a collection of pieces of operating information that are used to provide a system overview, such as CPU usage rates or the size of unused physical memory. Monitoring agents collect operating information by record. The records that can be collected differ according to the agent program.

## 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 *JPI/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.

## standby node

Of the server systems in a cluster system, a node that is waiting to take over applications if the executing node fails.

## 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
- User Data Interval - Expanded  $n$  (PI\_XUI $n$ ) record (where  $n$  is a number in the range from 1 to 5)
- 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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