

# HiCommand® Tuning Manager Operating System Reports Reference



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## Document Revision Level

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MK-95HC112-P	December 2005	Preliminary Release
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# Preface

The *HiCommand® Tuning Manager Operating System Reports Reference* describes the functions of collecting and managing performance data. It is intended for system/account administrators who have a basic knowledge of both SANs (Storage Area Networks) and NAS (Network Attached Storage) and who are responsible for:

- Store database management
- Backup and disk management
- Cluster system set up and maintenance
- Data collection (system configuration detail records, log information, and workgroup information)

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## Software Version

This document revision applies to software version 5.5.

## Conventions for Storage Capacity Values

Storage capacity values displayed by HiCommand Tuning Manager are calculated based on the following values:

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

## Referenced Documents

- *HiCommand Tuning Manager Agent Administration Guide*, MK-92HC013
- *HiCommand Tuning Manager Server Administration Guide*, MK-92HC021
- *HiCommand Tuning Manager User's Guide*, MK-92HC022
- *HiCommand Tuning Manager Hardware Reports Reference*, MK-95HC111
- *HiCommand Tuning Manager Application Reports Reference*, MK-95HC113
- *HiCommand Tuning Manager Messages Reference*, MK-95HC114
- *HiCommand Tuning Manager Command Line Interface Guide*, MK-96HC119
- *HiCommand Tuning Manager Installation Guide*, MK-96HC141

## Readme and Release Notes Contents

These files can be found on the installation CD. They contain requirements and notes for use of HiCommand Tuning Manager that may not be fully described in the manual. Be sure to review these files before installing HiCommand Tuning Manager.

## Comments

Please send us your comments on this document. Make sure to include the document title, number, and revision. Please refer to specific section(s) and paragraph(s) whenever possible.

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# Chapter 1 Working with the Solution Set

This chapter describes alarms and reports that an Agent provides as part of a solution set. A solution set makes it easy for the user to set alarms and reports.

- Overview of the Solution Set (see section 1.1)
- Reviewing the Format of Alarm Explanations (see section 1.2)
- Agent for Platform (Windows®) Alarms (see section 1.3)
- Agent for Platform (UNIX®) Alarms (see section 1.4)
- Reviewing the Format of Report Explanations (see section 1.5)
- Reviewing the Organization of Report Folders (see section 1.6)
- Agent for RAID Map Reports (see section 1.7)
- Agent for Platform (Windows) Reports (see section 1.8)
- Agent for Platform (UNIX) Reports (see section 1.9)

## 1.1 Overview of the Solution Set

The Tuning Manager series programs enable you to define alarms and reports by the following methods:

- Use the default alarms and reports provided by an Agent.
- Customize the default alarms and reports provided by an Agent.
- Define new alarms and reports.

The alarms and reports provided by an Agent constitute a **solution set**. Because all required information is already defined for alarms and reports in the solution set, you can use them as they are or customize them as appropriate for your environment. Therefore, this enables you to complete the preparations for monitoring the operating status of a desired program without having to define new alarms and reports.

For details about how to use reports, see the *HiCommand Tuning Manager User's Guide*. For details about how to use alarms, see the *HiCommand Tuning Manager Agent Administration Guide*.

## 1.2 Reviewing the Format of Alarm Explanations

This section describes the format that is used to explain alarms. This manual lists the alarms in alphabetical order.

### Overview

Provides an overview of what can be monitored by the alarm.

### Main Settings

Provides a table that lists and describes the main settings for the alarm. This table shows the correspondence between these alarm settings and the setting items for the alarm definition information output by the `jpccalarm export` command. For details about the settings for each alarm, check the alarm definition information output by the `jpccalarm export` command.

If the same value is set as the conditional expression for both the abnormal and warning conditions, only abnormal error alarms are issued.

### 1.3 Agent for Platform (Windows) Alarms

Alarms defined in the Agent for Platform (Windows) solution set are listed in the alarm table **PFM Windows Solution Alarms 7.50**. 7.50 indicates the version of the solution set's alarm table. Table 1.1 lists and describes the alarms defined in this solution set.

*Note:* In Agent for Platform (Windows), if the `jpcalarm list` command is executed, an alarm table version that does not exist in your Tuning Manager system might appear. Before using it, verify the version and compatibility of the alarm table being used by your Tuning Manager system. For details about the version and compatibility of the alarm table, see the appendix of the *HiCommand Tuning Manager Agent Administration Guide*.

Table 1.1 Agent for Platform (Windows) Alarms

Name of Alarm	What is Monitored
Available Memory	Amount of physical memory not being used (in megabytes)
CPU Usage	Processor usage rate (%)
Disk Space	Ratio of free space on logical disks compared with the total usable space

## 1.3.1 Available Memory

### Overview

The Available Memory alarm monitors the amount of physical memory (in megabytes) not being used. The value that is monitored is either the memory allocated for processes, or the total size of the zero memory, free memory, and standby memory (cached) that is immediately available to the system at collection time. This value is the latest monitored value, not the average value.

### Main Settings

Table 1.2 Main Settings for the Available Memory Alarm

Alarm definition output by the <code>jpcalarm export</code> command			Setting
Subsection	Label	Explanation	
Advanced Setting	Damping	Alarm when damping conditions are satisfied	Y
	Damping Count	Interval	3
		Maximum occurrences	2
Actions	SNMP	SNMP	Abnormal, Warning, Normal
Alarm Condition Expressions	Condition	Abnormal condition	<code>PI_AVAILABLE_BYTES &lt; 3</code>
		Warning condition	<code>PI_AVAILABLE_BYTES &lt; 4</code>

## 1.3.2 CPU Usage

### Overview

The CPU Usage alarm monitors the processor usage rate. The value that is monitored is the percentage of time that has elapsed for thread execution with the processor in a non-idle state. Even in a multi-processor environment, the maximum value displayed is 100%.

### Main Settings

Table 1.3 Main Settings for the CPU Usage Alarm

Alarm definition output by the <code>jpcalarm export</code> command			Setting
Subsection	Label	Explanation	
Advanced Setting	Damping	Alarm when damping conditions are satisfied	Y
	Damping Count	Interval	3
		Maximum occurrences	2
Actions	SNMP	SNMP	Abnormal, Warning, Normal
Alarm Condition Expressions	Condition	Abnormal condition	PI_PCT_TOTAL_PROCESSOR_TIME > 90
		Warning condition	PI_PCT_TOTAL_PROCESSOR_TIME > 80

### 1.3.3 Disk Space

#### Overview

The Disk Space alarm monitors the ratio of free space on logical disks compared with the total usable area.

**Note:**

To enable monitoring by this alarm on Windows 2000, you must execute the `diskperf -y` command at the Windows Command Prompt, and then restart the system.

#### Main Settings

Table 1.4 Main Settings for the Disk Space Alarm

Alarm definition output by the <code>jpcalarm export</code> command			Setting
Subsection	Label	Explanation	
Advanced Setting	Damping	Alarm when damping conditions are satisfied	Y
	Damping Count	Interval	3
		Maximum occurrences	2
Actions	SNMP	SNMP	Abnormal, Warning, Normal
Alarm Condition Expressions	Condition	Abnormal condition	<code>PI_LOGD_PCT_FREE_SPACE &lt; 5</code>
		Warning condition	<code>PI_LOGD_PCT_FREE_SPACE &lt; 15</code>

## 1.4 Agent for Platform (UNIX) Alarms

Alarms defined in the Agent for Platform (UNIX) solution set are listed in the alarm table **PFM UNIX Solution Alarms 7.50**. 7.50 indicates the version of the alarm table. Table 1.5 lists and describes the alarms defined in this solution set.

*Note:* In Agent for Platform (UNIX), if the `jpcalarm list` command is executed, an alarm table version that does not exist in your Tuning Manager system might appear. Before using it, verify the version and compatibility of the alarm table being used by your Tuning Manager system. For details about the version and compatibility of the alarm table, see the appendix of the *HiCommand Tuning Manager Agent Administration Guide*.

Table 1.5 Agent for Platform (UNIX) Alarms

Name of Alarm	What is Monitored
Disk Service Time	Devices that are in busy status
I/O Wait Time	Ratio of time all host processors are in I/O wait status
Kernel CPU	Ratio of time all host processors are operating in kernel mode
Pagescans	Virtual memory available to the system This alarm is not available in Linux®.
Run Queue	Number of threads on the run queue
Swap Outs	Swap area
User CPU	Ratio of time all host processors are operating in user mode

## 1.4.1 Disk Service Time

### Overview

The Disk Service Time alarm monitors for devices that are in busy status. The value that is monitored is the average time required from when a request arrives on the I/O queue until it is serviced.

### Main Settings

Table 1.6 Main Settings for the Disk Service Time Alarm

Alarm definition output by the <code>jpcalarm export</code> command			Setting
Subsection	Label	Explanation	
Advanced Setting	Damping	Alarm when damping conditions are satisfied	Y
	Damping Count	Interval	3
		Maximum occurrences	2
Actions	SNMP	SNMP	Abnormal, Warning, Normal
Alarm Condition Expressions	Condition	Abnormal condition	<code>PI_DEVD_AVG_SERVICE_TIME &gt; 0.1</code>
		Warning condition	<code>PI_DEVD_AVG_SERVICE_TIME &gt; 0.06</code>

## 1.4.2 I/O Wait Time

### Overview

The I/O Wait Time alarm monitors the percentage of time that all host processors are in I/O wait status.

### Main Settings

Table 1.7 Main Settings for the I/O Wait Time Alarm

Alarm definition output by the <code>jpcalarm export</code> command			Setting
Subsection	Label	Explanation	
Advanced Setting	Damping	Alarm when damping conditions are satisfied	Y
	Damping Count	Interval	3
		Maximum occurrences	2
Actions	SNMP	SNMP	Abnormal, Warning, Normal
Alarm Condition Expressions	Condition	Abnormal condition	<code>PI_WAIT_TIME_PERCENT &gt; 80</code>
		Warning condition	<code>PI_WAIT_TIME_PERCENT &gt; 60</code>

### 1.4.3 Kernel CPU

#### Overview

The Kernel CPU alarm monitors the percentage of time that all host processors are operating in kernel mode.

#### Main Settings

Table 1.8 Main Settings for the Kernel CPU Alarm

Alarm definition output by the <code>jpcalarm export</code> command			Setting
Subsection	Label	Explanation	
Advanced Setting	Damping	Alarm when damping conditions are satisfied	Y
	Damping Count	Interval	3
		Maximum occurrences	2
Actions	SNMP	SNMP	Abnormal, Warning, Normal
Alarm Condition Expressions	Condition	Abnormal condition	PI_KERNELMODE_PERCENT > 75
		Warning condition	PI_KERNELMODE_PERCENT > 50

## 1.4.4 Pagescans

### Overview

The Pagescans alarm monitors the virtual memory available to the system. The value that is monitored is the number of page scans that occur each second.

*Note:*

This alarm is not available in Linux.

### Main Settings

Table 1.9 Main Settings for the Pagescans Alarm

Alarm definition output by the <code>jpcalarm export</code> command			Setting
Subsection	Label	Explanation	
Advanced Setting	Damping	Alarm when damping conditions are satisfied	Y
	Damping Count	Interval	3
		Maximum occurrences	2
Actions	SNMP	SNMP	Abnormal, Warning, Normal
Alarm Condition Expressions	Condition	Abnormal condition	<code>PI_PAGE_SCANS_PER_SECOND &gt; 150</code>
		Warning condition	<code>PI_PAGE_SCANS_PER_SECOND &gt; 100</code>

## 1.4.5 Run Queue

### Overview

The Run Queue alarm monitors the number of threads on the run queue.

### Main Settings

Table 1.10 Main Settings for the Run Queue Alarm

Alarm definition output by the <code>jpcalarm export</code> command			Setting
Subsection	Label	Explanation	
Advanced Setting	Damping	Alarm when damping conditions are satisfied	N
	Damping Count	Interval	0
		Maximum occurrences	0
Actions	SNMP	SNMP	Abnormal, Warning, Normal
Alarm Condition Expressions	Condition	Abnormal condition	PI_FIVE_MINUTE_RUN_QUEUE_AVG > 8
		Warning condition	PI_FIVE_MINUTE_RUN_QUEUE_AVG > 4

## 1.4.6 Swap Outs

### Overview

The Swap Outs alarm monitors the swap area.

### Main Settings

Table 1.11 Main Settings for the Swap Outs Alarm

Alarm definition output by the <code>jpcalarm export</code> command			Setting
Subsection	Label	Explanation	
Advanced Setting	Damping	Alarm when damping conditions are satisfied	N
	Damping Count	Interval	0
		Maximum occurrences	0
Actions	SNMP	SNMP	Abnormal, Warning, Normal
Alarm Condition Expressions	Condition	Abnormal condition	PI_SWAP_OUT_COUNT_PER_SEC OND > 200
		Warning condition	PI_SWAP_OUT_COUNT_PER_SEC OND > 100

## 1.4.7 User CPU

### Overview

The User CPU alarm monitors the percentage of time that all host processors are operating in user mode compared with all host time.

### Main Settings

Table 1.12 Main Settings for the User CPU Alarm

Alarm definition output by the <code>jpcalarm export</code> command			Setting
Subsection	Label	Explanation	
Advanced Setting	Damping	Alarm when damping conditions are satisfied	Y
	Damping Count	Interval	3
		Maximum occurrences	2
Actions	SNMP	SNMP	Abnormal, Warning, Normal
Alarm Condition Expressions	Condition	Abnormal condition	<code>PI_USERMODE_PERCENT &gt; 85</code>
		Warning condition	<code>PI_USERMODE_PERCENT &gt; 65</code>

## 1.5 Reviewing the Format of Report Explanations

This section describes the format that is used to explain reports. The manual lists the reports in alphabetical order.

### Report Name

Indicates the report name of a solution set.

Agent for Platform (Windows) and Agent for Platform (UNIX):

- Reports with names that include (Multi-Agent) display information about multiple instances.
- Reports with names that do not include (Multi-Agent) display information about a single instance.

### Overview

Provides an overview of the information that can be displayed in the report.

### Storage Location

Indicates the storage location of the report.

### Record

Indicates the record that contains the performance data (configuration information) used in the report. To display a historical report, you must specify information in advance in order to collect the record indicated in this column. Before you display a report, use the `jpcasrec output` command of Performance Reporter to confirm that the record indicated in this column is set as Log = Yes. For a real-time report, you do not need to set it. For details about the Performance Reporter command, see the *HiCommand Tuning Manager Command Line Interface Guide*.

**Note:** The maximum number of records that can be displayed in a report is set in advance. For details about how to change the maximum number of records that can be displayed, see the *HiCommand Tuning Manager User's Guide*.

### Report Data

This is a table that contains some or all of the following information:

#### ■ Fields

Describes the fields used in the report.

In tables, Agent for Platform (Windows), #1 through #3 indicate the following:

- #1 indicates that the value in this field is the newest monitoring value returned from the OS during collection.
- #2 indicates that if this field is summarized in a historical report, the last collected value is displayed.

- #3 indicates that the field will be added only when data is stored in the Store database. For details about such fields, see section 2.5.

In each field, the following types of performance data are calculated:

- Averages and rates calculated from the data collected this time and the data collected at the previous interval
- Data calculated solely from the data collected this time (including the values accumulated in the OS. Those indicated by #1 in tables correspond to these values.)
- Data calculated from other field data (see *Data source* in each record field table in section 2.8)

Unless otherwise indicated, performance data consists of values calculated from the data collection interval.

If records of the PI record type in an historical report are summarized when a value other than *minutes* is specified as the report interval, the following types of values are displayed:

- Average value of the summarized intervals
- Last collected value
- Total value
- Minimum value
- Maximum value

Unless otherwise indicated, the average value of the summarized intervals is displayed as a field value.

#### ■ Drilldown Reports (Report Level)

Lists other reports in the solution set that are related to this report. For details about displaying a drilldown report, see the chapter that describes the report operations in the *HiCommand Tuning Manager User's Guide*. **Note:** Some reports and Agents do not have any drilldown reports.

#### ■ Drilldown Reports (Field Level)

Describes reports in the solution set that are associated with fields used in this report. For details about displaying a drilldown report, see the chapter that describes the report operations in the *HiCommand Tuning Manager User's Guide*. **Note:** Some reports and Agents do not have any drilldown reports.

**Note:** If a report only contains one field and no drilldown reports, the field data is listed beneath the 'Field' heading.

## 1.6 Reviewing the Organization of Report Folders

Listed below is a description of each folder:

- **Monthly Trend folder**

This folder contains reports that display daily information for the past month. Use the reports in this folder to check monthly trends in the system.
- **Status Reporting folder**

This folder contains a report displaying information compiled on a day-to-day basis. Use this folder to check the overall status of the system. In addition, real-time reports as well as historical reports can be displayed.

  - **Daily Trend folder**

This folder contains reports that display information for the last 24 hours, as well as hourly information for the past 24 hours. Use the reports in this folder to check the daily status of the system.
  - **Real-Time folder**

This folder contains real-time reports for checking the current status of the system.
- **Troubleshooting folder**

This folder contains reports showing useful information for resolving problems. In the event of a system problem, use the reports in this folder to check the cause of the problem. In addition, real-time reports as well as historical reports can be displayed.

  - **Real-Time folder**

This folder contains real-time reports for checking the current status of the monitored system.
  - **Recent Past folder**

This folder contains historical reports showing the cumulative data every minute in the last hour.

Agent for RAID Map does not provide any reports that are stored in the Troubleshooting folder.

Also, some of the folders might contain the following subordinate folders, depending on the folders above each:

- **Advanced folder**

This folder contains reports that use records for which Log = No is set by default. To display these reports, change the record setting to Log = Yes by using the `jpcasrec update` command of Performance Reporter.
- **Drilldown Only folder**

This folder contains reports that are displayed as drilldown reports (field level). Use it to display detailed information about the fields contained in the applicable report.

The following are examples of the organization of report folders for each Agent. Angle brackets (< >) enclose folder names:

### 1.6.1 Agent for RAID Map

```
<Filesystem-Storage Mapping>
+-- <Monthly Trend>
|   +-- File System Configuration
|   +-- IP Address Configuration
|   +-- Server Summary
|
+-- <Status Reporting>
|   +-- <Daily Trend>
|       +-- File System Configuration
|   +-- <Real-Time>
|       +-- File System Configuration
|       +-- IP Address Configuration
|       +-- Server Summary
|
+-- <Troubleshooting>
|   +-- <Real Time>
|   +-- <Recent Past>
```

## 1.6.2 Agent for Platform (Windows)

```
<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
|   +-- Page Faults - Top 10 Processes
|   +-- Server Activity Summary
|   +-- System Overview
|   +-- <Drilldown Only>
|       +-- Logical Drive Detail
|       +-- Process Detail
|       +-- Server Activity Detail
+-- <Recent Past>
|   +-- CPU Usage Summary
|   +-- File System I/O Summary
|   +-- Memory Paging
|   +-- Server Activity Summary
|   +-- System Memory Detail
|   +-- System Overview
```

### 1.6.3 Agent for Platform (UNIX)

```
<UNIX>
+-- <Monthly Trend>
|   +-- CPU Trend
|   +-- CPU Trend (Multi-Agent)
|   +-- NFS Load Trend#1
|   +-- Paging Trend (Multi-Agent)#1
|   +-- Process Trend
+-- <Status Reporting>
|   +-- <Daily Trend>
|   |   +-- CPU Status (Multi-Agent)
|   |   +-- Memory Paging Status (Multi-Agent)#1
|   |   +-- Network Status (Multi-Agent)
|   |   +-- NFS Usage Status (Multi-Agent)#1
|   |   +-- Workload Status (Multi-Agent)
|   |   +-- <Advanced>
|   |       +-- Device Usage Status (Multi-Agent)
+-- <Real-Time>
|   +-- Avg Service Time Status - Top 10 Devices
|   +-- CPU Per Processor Status
|   +-- CPU Status
|   +-- Device Usage Status
|   +-- Free Space Mbytes - Top 10 Local File Systems
|   +-- Memory Paging Status#1
|   +-- Network Status
|   +-- NFS Usage Status#1
|   +-- Process Summary Status
|   +-- System Utilization Status
|   +-- Workload Status
+-- <Troubleshooting>
|   +-- <Real-Time>
|   |   +-- Avg Service Time - Top 10 Devices
|   |   +-- CPU Per Processor Usage
|   |   +-- CPU Usage - Top 10 Processes
|   |   +-- I/O Activity - Top 10 Processes#2
|   |   +-- Major Page Faults - Top 10 Processes
|   |   +-- Network Interface Summary
|   |   +-- Space Usage - Top 10 Local File Systems
|   |   +-- Space Usage - Top 10 Remote File Systems
|   |   +-- System Overview
|   |   +-- <Drilldown Only>
|   |       +-- Device Detail
|   |       +-- Local File System Detail
|   |       +-- Network Interface Detail
|   |       +-- NFS Client Detail#1#3
|   |       +-- NFS Server Detail#1#3
|   |       +-- Process Detail
|   |       +-- Remote File System Detail
+-- <Recent Past>
|   +-- CPU Usage Summary
|   +-- I/O Overview#1
|   +-- Memory Paging#1
|   +-- Network Overview
|   +-- NFS Activity Overview#1
|   +-- System Overview
|   +-- <Advanced>
|       +-- Console Messages#1
|       +-- Network Interface Summary
|       +-- Process Overview
```

**Note 1:** Not available in Linux.

**Note 2:** Not available in HP-UX<sup>®</sup>, AIX<sup>®</sup>, and Linux.

**Note 3:** Not available in Solaris<sup>™</sup> 10.

## 1.7 Agent for RAID Map Reports

The following table lists the reports defined in the solution set, in alphabetical order.

**Table 1.13 Agent for RAID Map Reports**

Report Name	Displayed Information	Storage Location
File System Configuration (daily historical report)	Configuration information about and the correspondence between a file system and a logical device over the past month	Reports/Filesystem-Storage Mapping/Monthly Trend/
File System Configuration (hourly historical report)	Configuration information about and the correspondence between a file system and a logical device over the past 24 hours	Reports/Filesystem-Storage Mapping/Status Reporting /Daily Trend/
File System Configuration (real-time report)	Configuration information about the correspondence between a file system and a logical device are displayed in real time.	Reports/Filesystem-Storage Mapping/Status Reporting/Real-Time/
IP Address Configuration (daily historical report)	IP address configuration information over the past month	Reports/Filesystem-Storage Mapping/Monthly Trend/
IP Address Configuration (hourly historical report)	IP address configuration information over the past 24 hours	Reports/Filesystem-Storage Mapping/Status Reporting/Daily Trend/
IP Address Configuration (real-time report)	IP address configuration information is displayed in real time.	Reports/Filesystem-Storage Mapping/Status Reporting/Real-Time/
Server Summary (daily historical report)	Server summary information over the past month	Reports/Filesystem-Storage Mapping/Monthly Trend/
Server Summary (hourly historical report)	Server summary information over the past 24 hours	Reports/Filesystem-Storage Mapping/Status Reporting/Daily Trend/
Server Summary (real-time report)	Server summary information is displayed in real time.	Reports/Filesystem-Storage Mapping/Status Reporting/Real-Time/

## 1.7.1 File System Configuration (Daily Historical Report)

### Overview

The File System Configuration report displays configuration information about the correspondence between a file system and a logical device over the past month.

### Storage Location

Reports/Filesystem-Storage Mapping/Monthly Trend/

### Record

File System Configuration (PD\_FSC)

Table 1.14 Report Data for File System Configuration (Daily Historical Report)

Fields	
Field Name	Description
Device Name	Device special file name, or disk number (in Windows) or instance name (in UNIX)
Disk Group Name	Disk group name (an appropriate value is stored if VERITAS Volume Manager or an OS facility was used to create the disk group)
File System Name	File system mount point
LDEV Number	Logical device number
LU Number	Logical unit number (LUN) at the host
Node WWN	World Wide Name (WWN) of the node at the host
P/S Volume	Distinction between the primary volume and secondary volume (indicates the primary or secondary volume of a pair of volumes, such as for hot standby)
Port ID	Port number of the disk array device
Port Name	Port name of the disk array device
Port WWN	World Wide Name (WWN) of the port at the host
Product Name	Product name of the disk array device
RAID Group Number	Array group number of a logical device
RAID Level	RAID level of the logical device
Serial Number	Serial number of the disk array device
Target ID	Target ID at the host
Vendor ID	Vendor name of the storage device

## 1.7.2 File System Configuration (Hourly Historical Report)

### Overview

The File System Configuration report displays configuration information about the correspondence between a file system and a logical device over the past 24 hours group.

### Storage Location

Reports/Filesystem-Storage Mapping/Status Reporting/Daily Trend/

### Record

File System Configuration (PD\_FSC)

Table 1.15 Report Data for File System Configuration (Hourly Historical Report)

Fields	
Field Name	Description
Device Name	Device special file name, or disk number (in Windows) or instance name (in UNIX)
Disk Group Name	Disk group name (an appropriate value is stored if VERITAS Volume Manager or an OS facility was used to create the disk group)
File System Name	File system mount point
LDEV Number	Logical device number
LU Number	Logical unit number (LUN) at the host
Node WWN	World Wide Name (WWN) of the node at the host
P/S Volume	Distinction between the primary volume and secondary volume (indicates the primary or secondary volume of a pair of volumes, such as for hot standby)
Port ID	Port number of the disk array device
Port Name	Port name of the disk array device
Port WWN	World Wide Name (WWN) of the port at the host
Product Name	Product name of the disk array device
RAID Group Number	Array group number of a logical device
RAID Level	RAID level of the logical device
Serial Number	Serial number of the disk array device
Target ID	Target ID at the host
Vendor ID	Vendor name of the storage device

### 1.7.3 File System Configuration (Real-Time Report)

#### Overview

The File System Configuration report displays configuration information about the correspondence between a file system and a logical device in real time.

#### Storage Location

Reports/Filesystem-Storage Mapping/Status Reporting/Real-Time/

#### Record

File System Configuration (PD\_FSC)

**Table 1.16 Report Data for File System Configuration (Real-Time Report)**

Fields	
Field Name	Description
Device Name	Device special file name, or disk number (in Windows) or instance name (in UNIX)
Disk Group Name	Disk group name (an appropriate value is stored if VERITAS Volume Manager or an OS facility was used to create the disk group)
File System Name	File system mount point
LDEV Number	Logical device number
LU Number	Logical unit number (LUN) at the host
Node WWN	World Wide Name (WWN) of the node at the host
P/S Volume	Distinction between the primary volume and secondary volume (indicates the primary or secondary volume of a pair of volumes, such as for hot standby)
Port ID	Port number of the disk array device
Port Name	Port name of the disk array device
Port WWN	World Wide Name (WWN) of the port at the host
Product Name	Product name of the disk array device
RAID Group Number	Array group number of a logical device
RAID Level	RAID level of the logical device
Serial Number	Serial number of the disk array device
Target ID	Target ID at the host
Vendor ID	Vendor name of the storage device

## 1.7.4 IP Address Configuration (Daily Historical Report)

### Overview

The IP Address Configuration report displays IP address configuration information over the past month.

### Storage Location

Reports/Filesystem-Storage Mapping/Monthly Trend/

### Record

IP Address Configuration (PD\_IAC)

Table 1.17 Report Data for IP Address Configuration (Daily Historical Report)

Fields	
Field Name	Description
IP Address	IP Address
Subnet Mask	Subnet Mask

## 1.7.5 IP Address Configuration (Hourly Historical Report)

### Overview

The IP Address Configuration report displays IP address configuration information over the past 24 hours.

### Storage Location

Reports/Filesystem-Storage Mapping/Status Reporting/Daily Trend/

### Record

IP Address Configuration (PD\_IAC)

Table 1.18 Report Data for IP Address Configuration (Hourly Historical Report)

Fields	
Field Name	Description
IP Address	IP Address
Subnet Mask	Subnet Mask

## 1.7.6 IP Address Configuration (Real-Time Report)

### Overview

The IP Address Configuration report displays IP address configuration information in real time.

### Storage Location

Reports/Filesystem-Storage Mapping/Status Reporting/Real-Time/

### Record

IP Address Configuration (PD\_IAC)

Table 1.19 Report Data for IP Address Configuration (Real-Time Report)

Fields	
Field Name	Description
IP Address	IP Address
Subnet Mask	Subnet Mask

## 1.7.7 Server Summary (Daily Historical Report)

### Overview

The Server Summary report displays server summary information over the past month.

### Storage Location

Reports/Filesystem-Storage Mapping/Monthly Trend/

### Record

System Configuration Detail (PD)

Table 1.20 Report Data for Server Summary (Daily Historical Report)

Fields	
Field Name	Description
IP Address	IP Address
OS Name	OS Name
OS Version	OS Version

## 1.7.8 Server Summary (Hourly Historical Report)

### Overview

The Server Summary report displays server summary information over the past 24 hours.

### Storage Location

Reports/Filesystem-Storage Mapping/Status Reporting/Daily Trend/

### Record

System Configuration Detail (PD)

Table 1.21 Report Data for Server Summary (Hourly Historical Report)

Fields	
Field Name	Description
IP Address	IP Address
OS Name	OS Name
OS Version	OS Version

## 1.7.9 Server Summary (Real-Time Report)

### Overview

The Server Summary report displays server summary information in real time.

### Storage Location

Reports/Filesystem-Storage Mapping/Status Reporting/Real-Time/

### Record

System Configuration Detail (PD)

Table 1.22 Report Data for Server Summary (Real-Time Report)

Fields	
Field Name	Description
IP Address	IP Address
OS Name	OS Name
OS Version	OS Version

## 1.8 Agent for Platform (Windows) Reports

Table 1.23 lists the reports that are defined in the solution set.

**Table 1.23 Agent for Platform (Windows) Reports**

Report Name	Contents	Storage Location
Access Failure Status (real-time report on system access errors)	Number of errors that occurred during attempts to access the system	Reports/Windows/Operating System/Status Reporting/Real-Time/
Access Failure Status (historical report on system access errors)	Cumulative value for the errors that occurred during attempts to access the system over the past 24 hours (on an hourly basis)	Reports/Windows/Operating System/Status Reporting/Daily Trend/
CPU Status (Multi-Agent)	Summary of CPU usage for multiple agents over the past 24 hours (on an hourly basis)	Reports/Windows/Operating System/Status Reporting/Daily Trend/
CPU Trend	CPU usage in which threads were executed in user mode and privilege mode over the past month (on a daily basis)	Reports/Windows/Operating System/Monthly Trend/
CPU Trend (Multi-Agent)	CPU usage of multiple systems over the past month (on a daily basis)	Reports/Windows/Operating System/Monthly Trend/
CPU Usage - Top 10 Processes	Top 10 processes in terms of CPU usage	Reports/Windows/Operating System/Troubleshooting/Real-Time/
CPU Usage Summary	Summary of CPU usage over the past hour (on a minute-by-minute basis)	Reports/Windows/Operating System/Troubleshooting/Recent Past/
Disk Time - Top 10 Logical Drives	Top 10 logical drives in terms of disk utilization factor	Reports/Windows/Operating System/Troubleshooting/Real-Time/
File System I/O Summary	Summary of I/O usage over the past hour (on a minute-by-minute basis)	Reports/Windows/Operating System/Troubleshooting/Recent Past/
Free Megabytes - Logical Drive Status	Information about available space on the logical disk	Reports/Windows/Operating System/Status Reporting/Real-Time/
Free Space - Low 10 Logical Drives	Bottom 10 logical drives in terms of free space	Reports/Windows/Operating System/Troubleshooting/Real-Time/
Free Space - Top 10 Logical Drives	Top 10 logical drives in terms of free space	Reports/Windows/Operating System/Troubleshooting/Real-Time/
Logical Drive Detail	Details about a specified logical drive	Reports/Windows/Operating System/Troubleshooting/Real-Time/Drilldown Only/

Report Name	Contents	Storage Location
Memory Available Trend (Multi-Agent)	Physical memory available to multiple systems over the past month (on a daily basis)	Reports/Windows/Operating System/Monthly Trend/
Memory Paging	Rate of paging over the past hour (on a minute-by-minute basis)	Reports/Windows/Operating System/Troubleshooting/Recent Past/
Memory Paging Status (Multi-Agent)	Summary of statuses occurring for memory page faults for multiple agents over the past 24 hours (on an hourly basis)	Reports/Windows/Operating System/Status Reporting/Daily Trend/
OS Memory Usage Status (real-time report on memory usage)	Free physical memory	Reports/Windows/Operating System/Status Reporting/Real-Time/
OS Memory Usage Status (historical report on memory usage)	Summary of free physical memory in the system over the past 24 hours (on an hourly basis)	Reports/Windows/Operating System/Status Reporting/Daily Trend/
Page Faults - Top 10 Processes	Top 10 processes in terms of page fault frequency	Reports/Windows/Operating System/Troubleshooting/Real-Time/
Process Detail	Details about the system resources used by a specified process	Reports/Windows/Operating System/Troubleshooting/Real-Time/Drilldown Only/
Process Trend	Number of processes executed by the system over the past month (on a daily basis)	Reports/Windows/Operating System/Monthly Trend/
Server Activity Detail	Information about the communication status between networks	Reports/Windows/Operating System/Troubleshooting/Real-Time/Drilldown Only/
Server Activity Summary (Multi-Agent)	Summary of the communication status between networks for multiple agents over the past 24 hours (on an hourly basis)	Reports/Windows/Operating System/Status Reporting/Daily Trend/
Server Activity Summary (real-time report on the communication status between networks)	Information about the communication status between networks	Reports/Windows/Operating System/Troubleshooting/Real-Time/
Server Activity Summary (historical report on the communication between networks)	Communication status between networks over the past hour (on a minute-by-minute basis)	Reports/Windows/Operating System/Troubleshooting/Recent Past/
Server Activity Summary Trend (Multi-Agent)	Operating status of the data that multiple system servers sent or received between networks over the past month (on a daily basis)	Reports/Windows/Operating System/Monthly Trend/
Server Sessions Trend (Multi-Agent)	Number of active sessions on multiple system servers over the past month (on a daily basis)	Reports/Windows/Operating System/Monthly Trend/
System Memory Detail	Details about physical memory in the system over the past hour (on a minute-by-minute basis)	Reports/Windows/Operating System/Troubleshooting/Recent Past/

Report Name	Contents	Storage Location
System Overview (real-time report for a system overview)	Overview of the entire system	Reports/Windows/Operating System/Troubleshooting/Real-Time/
System Overview (historical report for a system overview)	System overview over the past hour (on a minute-by-minute basis)	Reports/Windows/Operating System/Troubleshooting/Recent Past/
System Utilization Status	Status of sending and receiving operations that the server performed between networks	Reports/Windows/Operating System/Status Reporting/Real-Time/
Workload Status	System workload-related data	Reports/Windows/Operating System/Status Reporting/Real-Time/
Workload Status (Multi-Agent)	Summary of workload-related data on multiple systems over the past 24 hours (on an hourly basis)	Reports/Windows/Operating System/Status Reporting/Daily Trend/

## 1.8.1 Access Failure Status (Real-Time Report on System Access Errors)

### Overview

The Access Failure Status report displays, in real-time, the number of errors that occurred during attempts to access the system. This report displays a line graph.

### Storage Location

Reports/Windows/Operating System/Status Reporting/Real-Time/

### Record

System Overview (PI)

Table 1.24 Report Data for Access Failure Status (Real-Time Report on System Access Errors)

Fields	
Field Name	Description
Errors Access Permissions	Number of times <code>STATUS_ACCESS_DENIED</code> has occurred since the OS started, due to a file open error caused by users who (as clients) attempted to access files that were not appropriately protected. #1
Errors Granted Access	Number of times access has been denied since the OS started, due to user attempts to access normally open files although the users were not granted permission for the files. #1
Errors Logon	Number of times attempts to log on to the server has failed since the OS started. This type of failure suggests that a password guessing program was used in an attempt to break the server's security. #1

## 1.8.2 Access Failure Status (Historical Report on System Access Errors)

### Overview

The Access Failure Status report displays the cumulative value for errors that occurred during attempts to access the system over the past 24 hours (on an hourly basis). This report displays a line graph.

### Storage Location

Reports/Windows/Operating System/Status Reporting/Daily Trend/

### Record

System Overview (PI)

Table 1.25 Report Data for Access Failure Status (Historical Report on System Access Errors)

Fields	
Field Name	Description
Errors Access Permissions	Number of times <code>STATUS_ACCESS_DENIED</code> has occurred since the OS started, due to a file open error caused by users who (as clients) attempted to access files that were not appropriately protected. If this field is summarized in a historical report, the maximum value is displayed. #1
Errors Granted Access	Number of times access has been denied since the OS started, due to user attempts to access normally open files although the users were not granted permission for the files. If this field is summarized in a historical report, the maximum value is displayed. #1
Errors Logon	Number of times attempts to log on to the server failed since the OS started. This type of failure suggests that a password guessing program was used in an attempt to break the server's security. If this field is summarized in a historical report, the maximum value is displayed. #1

### 1.8.3 CPU Status (Multi-Agent)

#### Overview

The CPU Status (Multi-Agent) report displays a summary of CPU usage for multiple agents over the past 24 hours (on an hourly basis). This report displays a table and line graph.

#### Storage Location

Reports/Windows/Operating System/Status Reporting/Daily Trend/

#### Record

System Overview (PI)

Table 1.26 Report Data for CPU Status (Multi-Agent)

Fields	
Field Name	Description
% Total Interrupt Time	Percentage of time spent by the processor to process interrupts from hardware components (system clock, mouse, disk driver, data communication line, NIC, and other peripheral devices that can raise interrupts).  The maximum is 100 regardless of whether a single-processor or multiprocessor environment is in use.
Agent Instance # <sup>3</sup>	Agent name
Context Switches/sec	Rate (num./second) at which context switches occurred in all the process threads (when the execution thread releases any processor, when the processor is interrupted by a thread with a higher priority, or when a context is switched from user mode to privilege mode or vice versa to use Executive or subsystem services).
CPU %	Processor usage. Percentage (%) of the elapsed time during which the processor executed non-idle threads. The maximum is 100 regardless of whether a single-processor or multiprocessor environment is in use.
Privileged CPU %	Percentage (%) of threads executed by the processor in privilege mode. This is the percentage of the elapsed time during which the processor executed non-idle threads in privilege mode. The maximum is 100 regardless of whether a single-processor or multiprocessor environment is in use.
Processor Queue Length	Number of requests in the processor queue that are ready for execution and are waiting for processor time. Usually, if the queue length continuously exceeds 2, it indicates that the processor is congested. # <sup>1</sup>
System Calls/sec	Rate (num./second) at which system service routines called by the process are executed by the processor.
User CPU %	Percentage (%) of threads executed by the processor in user mode. This is the percentage of the elapsed time during which the processor executed non-idle threads in user mode. The maximum is 100 regardless of whether a single-processor or multiprocessor environment is in use.

## 1.8.4 CPU Trend

### Overview

The CPU Trend report displays the CPU usage in which threads were executed in user mode and privilege mode over the past month (on a daily basis). This report displays a line graph.

### Storage Location

Reports/Windows/Operating System/Monthly Trend/

### Record

System Overview (PI)

Table 1.27 Report Data for CPU Trend

Fields	
Field Name	Description
Privileged CPU %	Percentage (%) of threads executed by the processor in privilege mode. This is the percentage of the elapsed time during which the processor executed non-idle threads in privilege mode. The maximum is 100 regardless of whether a single-processor or multiprocessor environment is in use.
User CPU %	Percentage (%) of threads executed by the processor in user mode. This is the percentage of the elapsed time during which the processor executed non-idle threads in user mode. The maximum is 100 regardless of whether a single-processor or multiprocessor environment is in use.

## 1.8.5 CPU Trend (Multi-Agent)

### Overview

The CPU Trend (Multi-Agent) report displays the CPU usage of multiple systems over the past month (on a daily basis). This report displays a line graph.

### Storage Location

Reports/Windows/Operating System/Monthly Trend/

### Record

System Overview (PI)

### Field

Name: CPU%

Description: Processor usage. Percentage (%) of the elapsed time during which the processor executed non-idle threads. The maximum is 100 regardless of whether a single-processor or multiprocessor environment is in use.

## 1.8.6 CPU Usage - Top 10 Processes

### Overview

The CPU Usage - Top 10 Processes report displays in real-time the top 10 processes in terms of CPU usage. This report displays a bar graph.

### Storage Location

Reports/Windows/Operating System/Troubleshooting/Real-Time/

### Record

Process Detail Interval (PD\_PDI)

Table 1.28 Report Data for CPU Usage - Top 10 Processes

Fields	
Field Name	Description
CPU %	Percentage (%) of the elapsed time during which processes used the processor. In a multi-processor environment, usage where <i>number of processors</i> * 100% is the maximum value is displayed. To display the Process Detail report, choose this field.
PID	Process ID. Unique identifier of the process being executed.
Program	Executing program name.
Drilldown Report (Field Level)	
Report Name	Description
Process Detail	Displays details about the system resources that are used by the selected process. To display this report, choose the CPU % field.

## 1.8.7 CPU Usage Summary

### Overview

The CPU Usage Summary report displays a summary of CPU usage over the past hour (on a minute-by-minute basis). This report displays a table and line graph.

### Storage Location

Reports/Windows/Operating System/Troubleshooting/Recent Past/

### Record

System Overview (PI)

Table 1.29 Report Data for CPU Usage Summary

Fields	
Field Name	Description
% Total Interrupt Time	Percentage of time spent by the processor to process interrupts from hardware components (system clock, mouse, disk driver, data communication line, NIC, and other peripheral devices that can raise interrupts). The maximum is 100 regardless of whether a single-processor or multiprocessor environment is in use.
Context Switches/sec	Rate (num./second) at which context switches occurred in all the process threads (when the execution thread releases any processor, when the processor is interrupted by a thread with a higher priority, or when a context is switched from user mode to privilege mode or vice versa to use Executive or subsystem service).
CPU %	Processor usage. Percentage (%) of the elapsed time during which the processor executed non-idle threads. The maximum is 100 regardless of whether a single-processor or multiprocessor environment is in use.
Privileged CPU %	Percentage (%) of threads executed by the processor in privilege mode. This is the percentage of the elapsed time during which the processor executed non-idle threads in privilege mode. The maximum is 100 regardless of whether a single-processor or multiprocessor environment is in use. This field is a component of the CPU % field.
Processor Queue Length	Number of requests in the processor queue that are ready for execution and are waiting for processor time. Usually, if the queue length continuously exceeds 2, it indicates that the processor is congested. #1
System Calls/sec	Rate (num./second) of system service routines called by a process being executed by the processor.
Total Interrupts/sec	Rate (num./second) at which interrupts were received by the processor from hardware components (system clock, mouse, disk driver, data communication line, NIC, and other peripheral devices that can raise interrupts).  DPC (deferred procedure call) interrupts are not included. Usually, if this value is extraordinarily high when there is no system activity, it suggests a hardware problem, including the presence of a slow device.

Fields	
Field Name	Description
User CPU %	Percentage (%) of threads executed by the processor in user mode. This is the percentage of the elapsed time during which the processor executed non-idle threads in user mode. The maximum is 100 regardless of whether a single-processor or multiprocessor environment is in use. This field is a component of the CPU % field.

## 1.8.8 Disk Time - Top 10 Logical Drives

### Overview

The Disk Time - Top 10 Logical Drives report displays in real-time the top 10 logical drives in terms of disk usage. This report displays a bar graph.

**Note:** To display this report in Windows 2000, execute the `diskperf -y` command at the Windows Command Prompt, and restart the system.

### Storage Location

Reports/Windows/Operating System/Troubleshooting/Real-Time/

### Record

Logical Disk Overview (PI\_LOGD)

Table 1.30 Report Data for Disk Time - Top 10 Logical Drives

Fields	
Field Name	Description
% Disk Time	Percentage (%) of the elapsed time during which the disk was busy processing a read or write request. Usually, if this rate is continuously near 100%, it indicates that the disk is being used excessively. To display the Logical Drive Detail report, choose this field.
ID	Logical disk volume name.
Drilldown Report (Field Level)	
Report Name	Description
Logical Drive Detail	Displays details about the selected logical drive. To display this report, choose the % Disk Time field.

## 1.8.9 File System I/O Summary

### Overview

The File System I/O Summary report displays a summary of I/O usage on a minute-by-minute basis over the past hour. This report displays a table and line graph.

### Storage Location

Reports/Windows/Operating System/Troubleshooting/Recent Past/

### Record

System Overview (PI)

Table 1.31 Report Data for File System I/O Summary

Fields	
Field Name	Description
File Control Ops/sec	Rate (num./second) at which the processor performed operations other than operations to read data from or write data to the file system.
File Data Ops/sec	Rate (num./second) at which the processor performed operations to read data from or write data to the file system.
File Read Ops/sec	Rate (num./second) at which the processor performed operations to read data from the file system.
File Write Ops/sec	Rate (num./second) at which the processor performed operations to write data to the file system.
Page Reads/sec	Rate (num./second) at which pages were paged in when a page fault occurred.
Page Writes/sec	Rate (num./second) at which pages were paged out when a page fault occurred.
Pages Input/sec	Rate (num./second) at which page-in operations were performed when a page fault occurred.
Pages Output/sec	Rate (num./second) at which page-out operations were performed when a page fault occurred.

## 1.8.10 Free Megabytes - Logical Drive Status

### Overview

The Free Megabytes - Logical Drive Status report displays, in real-time, information about available space on the logical disk. This report displays a table and bar graph.

**Note:** To display this report in Windows 2000, execute the `diskperf -y` command at the Windows Command Prompt, and restart the system.

### Storage Location

Reports/Windows/Operating System/Status Reporting/Real-Time/

### Record

Logical Disk Overview (PI\_LOGD)

Table 1.32 Report Data for Free Megabytes - Logical Drive Status

Fields	
Field Name	Description
% Free Space	Available free disk space as a percentage (%) of the entire usable area. #1
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	Unused area (in megabytes) in the entire usable area. #1
ID	Logical disk volume name.
Page File Size Mbytes	Physical size (in megabytes) of the valid paging file allocated to the drive. #1, #2
Total Size Mbytes	Disk size (in megabytes). #1, #2

## 1.8.11 Free Space - Low 10 Logical Drives

### Overview

The Free Space - Low 10 Logical Drives report displays in real-time the bottom 10 logical drives in terms of free space. This report displays a bar graph.

**Note:** To display this report in Windows 2000, execute the `diskperf -y` command at the Windows Command Prompt, and restart the system.

### Storage Location

Reports/Windows/Operating System/Troubleshooting/Real-Time/

### Record

Logical Disk Overview (PI\_LOGD)

Table 1.33 Report Data for Free Space - Low 10 Logical Drives

Fields	
Field Name	Description
% Free Space	Available free disk space as a percentage (%) of the entire usable area. #1 To display the Logical Drive Detail report, choose this field.
ID	Logical disk volume name.
Drilldown Report (Field Level)	
Report Name	Description
Logical Drive Detail	Displays details about the selected logical drive. To display this report, choose the % Free Space field.

## 1.8.12 Free Space - Top 10 Logical Drives

### Overview

The Free Space - Top 10 Logical Drives report displays in real-time the top 10 logical drives in terms of free space. This report displays a bar graph.

**Note:** To display this report in Windows 2000, execute the `diskperf -y` command at the Windows Command Prompt, and restart the system.

### Storage Location

Reports/Windows/Operating System/Troubleshooting/Real-Time/

### Record

Logical Disk Overview (PI\_LOGD)

Table 1.34 Report Data for Free Space Top 10 Logical Drives

Fields	
Field Name	Description
% Free Space	Available free disk space as a percentage (%) of the entire usable area. #1. To display the Logical Drive Detail report, choose this field.
ID	Logical disk volume name.
Drilldown Report (Field Level)	
Report Name	Description
Logical Drive Detail	Displays details about the selected logical drive. To display this report, choose the % Free Space field.

## 1.8.13 Logical Drive Detail

### Overview

The Logical Drive Detail report displays in real-time the details about a specified logical drive. This report displays a list. This is a drilldown report.

**Note:** To display this report in Windows 2000, execute the `diskperf -y` command at the Windows Command Prompt, and restart the system.

### Storage Location

Reports/Windows/Operating System/Troubleshooting/Real-Time/Drilldown Only/

### Record

Logical Disk Overview (PI\_LOGD)

Table 1.35 Report Data for Logical Drive Detail

Fields	
Field Name	Description
% Disk Read Time	Percentage (%) of the elapsed time during which the disk was busy processing a read request.
% Disk Write Time	Percentage (%) of the elapsed time during which the disk was busy processing a write request.
% Free Space	Available free disk space as a percentage (%) of the entire usable area. #1
Avg Disk Bytes/Read	Average rate (bytes/read operation) at which data was transferred from the disk during read processing.
Avg Disk Bytes/Write	Average rate (bytes/write operation) at which data was transferred to the disk during write processing.
Avg Disk Read Queue Length	Average number of read requests placed in the disk queue.
Avg Disk Secs/Read	Average time (in seconds) required to read data from the disk.
Avg Disk Secs/Write	Average time (in seconds) required to write data to the disk.
Avg Disk Write Queue Length	Average number of write request placed in the disk queue.
Current Disk Queue Length	Number of queue requests waiting for processing or being processed and remaining on the disk. Usually, if the queue length continuously exceeds 2, it indicates that the disk is congested. #1
Disk Read Bytes/sec	Rate (bytes/second) at which data is transferred from the disk during read processing.
Disk Reads/sec	Rate (num./second) of operations to read data from the disk.
Disk Write Bytes/sec	Rate (bytes/second) at which data is transferred to the disk during write processing.
Disk Writes/sec	Rate (num./second) of operations to write data to the disk.

Fields	
Field Name	Description
Disk Xfers/sec	Rate (num./second) of operations to read data from or write data to the disk.
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	Unused area (in megabytes) in the entire usable disk area. #1
ID	Logical disk volume name.
Page File Size Mbytes	Physical size (in megabytes) of the valid paging file allocated to the drive. #1, #2
Total Size Mbytes	Disk size (in megabytes) #1, #2

## 1.8.14 Memory Available Trend (Multi-Agent)

### Overview

The Memory Available Trend (Multi-Agent) report displays the amount of free physical memory available to multiple systems over the past month (on a daily basis). This report displays a line graph.

### Storage Location

Reports/Windows/Operating System/Monthly Trend/

### Record

System Overview (PI)

### Field

Name: Available Mbytes

Description: Size (in megabytes) of unused physical memory. This value is the sum of zero memory, free memory, and standby memory (cached) to be allocated to the process or that can be immediately used by the system. Usually, if this size is continuously less than 5% of the Total Physical Mem Mbytes field, it indicates excessive paging. <sup>#1</sup>

## 1.8.15 Memory Paging

### Overview

The Memory Paging report displays the rate of paging over the past hour (on a minute-by-minute basis). This report displays a table and line graph.

### Storage Location

Reports/Windows/Operating System/Troubleshooting/Recent Past/

### Record

System Overview (PI)

Table 1.36 Report Data for Memory Paging

Fields	
Field Name	Description
Page Faults/sec	Rate (num./second) at which page faults occurred. Usually, if this rate continuously exceeds 5, it indicates a memory bottleneck.
Page Reads/sec	Rate (num./second) at which pages were paged in when a page fault occurred.
Page Writes/sec	Rate (num./second) at which pages were paged out when a page fault occurred.
Pages Input/sec	Rate (num./second) at which page-in operations were performed when a page fault occurred.
Pages Output/sec	Rate (num./second) at which page-out operations were performed when a page fault occurred.
Transition Faults/sec	Rate (num./second) at which pages were not paged even if a page used by another shared process or a page in the updated page listing or standby listing was recovered when a page fault occurred.

## 1.8.16 Memory Paging Status (Multi-Agent)

### Overview

The Memory Paging Status (Multi-Agent) report displays a summary of the statuses occurring for memory page faults for multiple agents over the past 24 hours (on an hourly basis). This report displays a table and line graph.

### Storage Location

Reports/Windows/Operating System/Status Reporting/Daily Trend/

### Record

System Overview (PI)

Table 1.37 Report Data for Memory Paging Status (Multi-Agent)

Fields	
Field Name	Description
Agent Instance # <sup>3</sup>	Agent name
Page Faults/sec	Rate (num./second) at which page faults occurred. Usually, if this rate continuously exceeds 5, it indicates a memory bottleneck.
Page Reads/sec	Rate (num./second) at which pages were paged in when a page fault occurred.
Page Writes/sec	Rate (num./second) at which pages were paged out when a page fault occurred.
Pages Input/sec	Rate (num./second) at which page-in operations were performed when a page fault occurred.
Pages Output/sec	Rate (num./second) at which page-out operations were performed when a page fault occurred.
Pages/sec	Rate (num./second) at which paged operations were performed when a page fault occurred. This value is the sum of the Pages Input/sec and Pages Output/sec fields. Usually, if this field continuously exceeds 5, memory may have entered a system bottleneck.
Transition Faults/sec	Rate (num./second) at which pages were not paged even if a page used by another shared process or a page in the updated page listing or standby listing was recovered when a page fault occurred.

## 1.8.17 OS Memory Usage Status (Real-Time Report on Memory Usage)

### Overview

The OS Memory Usage Status report displays, in real-time, free physical memory. This report displays a list and line graph.

### Storage Location

Reports/Windows/Operating System/Status Reporting/Real-Time/

### Record

System Overview (PI)

Table 1.38 Report Data for OS Memory Usage Status (Real-Time Report on Memory Usage)

Fields	
Field Name	Description
Available Mbytes	Size (in megabytes) of unused physical memory. This value is the sum of zero memory, free memory, and standby memory (cached) to be allocated to the process or that can be immediately used by the system. Usually, if this size is continuously less than 5% of the Total Physical Mem Mbytes field, it indicates excessive paging. #1
Cache Faults/sec	Rate (num./second) at which page faults occurred in the file system cache.
Cache Mbytes	Size (in megabytes) being used by the file system cache. #1
Page Faults/sec	Rate (num./second) at which page faults occurred. Usually, if this rate continuously exceeds 5, it indicates a memory bottleneck.
Pages/sec	Rate (num./second) at which paged operations were performed when a page fault occurred. This value is the sum of the Pages Input/sec and Pages Output/sec fields. Usually, if this field continuously exceeds 5, memory may have entered a system bottleneck.

## 1.8.18 OS Memory Usage Status (Historical Report on Memory Usage)

### Overview

The OS Memory Usage Status report displays a summary of free physical memory in the system over the past 24 hours (on an hourly basis). This report displays a table and line graph.

### Storage Location

Reports/Windows/Operating System/Status Reporting/Daily Trend/

### Record

System Overview (PI)

Table 1.39 Report Data for OS Memory Usage Status (Historical Report on Memory Usage)

Fields	
Field Name	Description
Available Mbytes	Size (in megabytes) of unused physical memory. This value is the sum of zero memory, free memory, and standby memory (cached) to be allocated to the process or that can be immediately used by the system. Usually, if this size is continuously less than 5% of the Total Physical Mem Mbytes field, it indicates excessive paging. #1
Cache Faults/sec	Rate (num./second) at which page faults occurred in the file system cache.
Cache Mbytes	Size (in megabytes) of memory being used by the file system cache. #1
Page Faults/sec	Rate (num./second) at which page faults occurred. Usually, if this rate continuously exceeds 5, it indicates a memory bottleneck.
Pages/sec	Rate (num./second) at which paged operations were performed when a page fault occurred.  This value is the sum of the Pages Input/sec and Pages Output/sec fields. Usually, if this field continuously exceeds 5, memory may have entered a system bottleneck.

## 1.8.19 Page Faults - Top 10 Processes

### Overview

The Page Faults - Top 10 Processes report displays, in real-time, the top 10 processes in terms of page fault frequency. This report displays a bar graph.

### Storage Location

Reports/Windows/Operating System/Troubleshooting/Real-Time/

### Record

Process Detail Interval (PD\_PDI)

Table 1.40 Report Data for Page Faults - Top 10 Processes

Fields	
Field Name	Description
Page Faults/sec	Rate (num./second) at which page faults occurred in a process. To display the Process Detail report, choose this field.
PID	Process ID. Unique identifier of the process being executed.
Program	Executing program name.
Drilldown Report (Field Level)	
Report Name	Description
Process Detail	Displays details about the system resources that are used by the selected process. To display this report, choose the Page Faults/sec field.

## 1.8.20 Process Detail

### Overview

The Process Detail report displays in real-time the details about the system resources used by a specified process. This report displays a list. This is a drilldown report.

### Storage Location

Reports/Windows/Operating System/Troubleshooting/Real-Time/Drilldown Only/

### Record

Process Detail Interval (PD\_PDI)

Table 1.41 Report Data for Process Detail

Fields	
Field Name	Description
CPU %	Percentage (%) of the elapsed time during which the process used the processor. In a multi-processor environment, usage where <i>number of processors</i> * 100% is the maximum value is displayed.
Handle Count	Number of handles opened by the process. #1
Page Faults/sec	Rate (num./second) at which page faults occurred in a process.
Page File Kbytes	Size (in kilobytes) of virtual memory used by the process in the paging file. #1
PID	Process ID. Unique identifier of the process being executed.
Pool Nonpaged Kbytes	Size (in kilobytes) of unpageable memory used by the process. #1
Pool Paged Kbytes	Size (in kilobytes) of pageable memory used by the process. #1
Priority Base	Base priority of the process. The larger the value, the higher the base priority. The values are follows: <ul style="list-style-type: none"><li>▪ 24: Real-time</li><li>▪ 13: High</li><li>▪ 10: Greater than normal</li><li>▪ 8: Normal</li><li>▪ 6: Less than normal</li><li>▪ 4: Low</li></ul>
Private Kbytes	Size (in kilobytes) of memory allocated by the process so that other processes cannot share it. #1
Privileged CPU %	Percentage (%) of the elapsed time during which the process used the processor in privilege mode. In a multi-processor environment, usage where <i>number of processors</i> * 100% is the maximum value is displayed.
Program	Executing program name.

Fields	
Field Name	Description
Thread Count	Number of threads (unit for instruction execution) in the process. If a process is executed, at least one thread is started. #1
User	Name of the user who executed the process. If the account name corresponding to the security ID of the process is not found, <code>NONE_MAPPED</code> is stored. If this user name cannot be obtained from the process ID, <code>UNKNOWN</code> is stored.
User CPU %	Percentage (%) of the elapsed time during which the process used the processor in user mode. In a multi-processor environment, usage where <i>number of processors</i> * 100% is the maximum value is displayed.
Virtual Kbytes	Size (in kilobytes) of virtual address space used by the process. #1
Working Set Kbytes	Size (in kilobytes) of memory (this usage indicates the total amount of memory or the amount of memory that can be referenced without a page fault occurring and is also called a <i>working set</i> ) used by the process. #1

## 1.8.21 Process Trend

### Overview

The Process Trend report displays the number of processes executed by the system over the past month (on a daily basis). This report displays a line graph.

### Storage Location

Reports/Windows/Operating System/Monthly Trend/

### Record

System Overview (PI)

### Field

Name: Processes

Description: Number of active processes in memory <sup>#1</sup>

## 1.8.22 Server Activity Detail

### Overview

The Server Activity Detail report displays, in real-time, information about the communication status between networks. This report displays a list. This is a drilldown report.

### Storage Location

Reports/Windows/Operating System/Troubleshooting/Real-Time/Drilldown Only/

### Record

System Overview (PI)

**Table 1.42 Report Data for Server Activity Detail**

Fields	
Field Name	Description
Bytes Rcvd/sec	Rate (bytes/second) at which the server received data from the network.
Bytes Total/sec	Rate (bytes/second) at which the server sent data to or received data from the network.
Bytes Xmitd/sec	Rate (bytes/second) at which the server sent data to the network.
Net Errors/sec	Rate (num./second) at which unexpected errors occurred due to a serious communication failure between the Redirector and server.
Pkts Rcvd/sec	Rate (num./second) at which the Redirector received packets (also called <i>server message blocks</i> [SMB]).
Pkts Xmitd/sec	Rate (num./second) at which the Redirector sent packets (also called <i>server message blocks</i> [SMB]).
Pkts/sec	Rate (num./second) at which the Redirector processed packets (also called <i>server message blocks</i> [SMB]).
Redir Bytes Rcvd/sec	Rate (bytes/second) at which the Redirector received data from the network.
Redir Bytes Total/sec	Rate (bytes/second) at which the Redirector sent data to or received data from the network.
Redir Bytes Xmitd/sec	Rate (bytes/second) at which the Redirector sent data to the network.
Redir File Data Ops/sec	Rate (num./second) at which the Redirector performed data operations.
Redir File Read Ops/sec	Rate (num./second) at which an application requested the Redirector for data.
Redir File Write Ops/sec	Rate (num./second) at which an application sent data to the Redirector.
Redir Server Sessions	Number of security object sessions managed by the Redirector since the OS started. # <sup>1</sup>

Fields	
Field Name	Description
Server Disconnects	Number of times the server disconnected from the Redirector since the OS started. #1
Server Reconnects	Number of times the Redirector needed to reconnect to the server to complete a new active request since the OS started. #1
Server Sessions	Number of active sessions on the server. #1
Server Sessions Hung	Number of active sessions that could not continue processing because a timeout occurred (the remote server made no reply). #1

## 1.8.23 Server Activity Summary (Multi-Agent)

### Overview

The Server Activity Summary (Multi-Agent) report displays a summary of the communication status between networks for multiple agents over the past 24 hours (on an hourly basis). This report displays a table and line graph.

### Storage Location

Reports/Windows/Operating System/Status Reporting/Daily Trend/

### Record

System Overview (PI)

Table 1.43 Report Data for Server Activity Summary (Multi-Agent)

Fields	
Field Name	Description
Agent Instance #3	Agent name
Bytes Total/sec	Rate (bytes/second) at which the server sent data to or received data from the network.
Net Errors/sec	Rate (num./second) at which unexpected errors occurred due to serious communication failures between the Redirector and server.
Pkts/sec	Rate (num./second) at which the Redirector processed packets (also called <i>server message blocks</i> [SMB]).
Redir Bytes Total/sec	Rate (bytes/second) at which the Redirector sent data to or received data from the network.
Redir File Data Ops/sec	Rate (num./second) at which the Redirector performed data operations.
Redir Server Sessions	Number of security object sessions managed by the Redirector since the OS started. #1
Server Sessions	Number of active sessions on the server. #1

## 1.8.24 Server Activity Summary (Real-time Report on the Communication Status between Networks)

### Overview

The Server Activity Summary report displays, in real-time, information about the communication status between networks. This report displays a list and line graph.

### Storage Location

Reports/Windows/Operating System/Troubleshooting/Real-Time/

### Record

System Overview (PI)

**Table 1.44 Report Data for Server Activity Summary (Real-Time Report on the Communication Status between Networks)**

Fields	
Field Name	Description
Bytes Total/sec	Rate (bytes/second) at which the server sent data to or received data from the network. To display the Server Activity Detail report, choose this field.
Net Errors/sec	Rate (num./second) at which unexpected errors occurred due to serious communication failures between the Redirector and server.
Pkts/sec	Rate (num./second) at which the Redirector processed packets (also called <i>server message blocks</i> [SMB]).
Redir Bytes Total/sec	Rate (bytes/second) at which the Redirector sent data to or received data from the network.
Redir File Data Ops/sec	Rate (num./second) at which the Redirector performed data operations.
Redir Server Sessions	Number of security object sessions managed by the Redirector since the OS started. #1
Server Sessions	Number of active sessions on the server. #1
Drilldown Report (Field Level)	
Report Name	Description
Server Activity Detail	Displays details about the server operating status. To display this report, choose the Bytes Total/sec field.

## 1.8.25 Server Activity Summary (Historical Report on the Server and Redirector Components)

### Overview

The Server Activity Summary report displays the communication status between networks over the past hour (on a minute-by-minute basis). This report displays a table and line graph.

### Storage Location

Reports/Windows/Operating System/Troubleshooting/Recent Past/

### Record

System Overview (PI)

Table 1.45 Report Data for Server Activity Summary (Historical Report on the Server and Redirector Components)

Fields	
Field Name	Description
Bytes Total/sec	Rate (bytes/second) at which the server sent data to or received data from the network.
Net Errors/sec	Rate (num./second) at which unexpected errors occurred due to serious communication failures between the Redirector and server.
Pkts/sec	Rate (num./second) at which the Redirector processed packets (also called <i>server message blocks</i> [SMB]).
Redir Bytes Total/sec	Rate (bytes/second) at which the Redirector sent data to or received data from the network.
Redir File Data Ops/sec	Rate (num./second) at which the Redirector performed data operations.
Redir Server Sessions	Number of security object sessions managed by the Redirector since the OS started. #1
Server Sessions	Number of active sessions on the server. #1

## 1.8.26 Server Activity Summary Trend (Multi-Agent)

### Overview

The Server Activity Summary Trend (Multi-Agent) report displays the operating status of the data that multiple system servers sent or received between networks over the past month (on a daily basis). This report displays a line graph.

### Storage Location

Reports/Windows/Operating System/Monthly Trend/

### Record

System Overview (PI)

### Field

Name: Bytes Total/sec

Description: Rate (bytes/second) at which the server sent data to or received data from the network

## 1.8.27 Server Sessions Trend (Multi-Agent)

### Overview

The Server Sessions Trend (Multi-Agent) report displays the number of active sessions on multiple system servers over the past month (on a daily basis). This report displays a line graph.

### Storage Location

Reports/Windows/Operating System/Monthly Trend/

### Record

System Overview (PI)

### Field

Name: Server Sessions

Description: Number of active sessions on the server <sup>#1</sup>

## 1.8.28 System Memory Detail

### Overview

The System Memory Detail report displays details about physical memory in the system over the past hour (on a minute-by-minute basis). This report displays a table.

### Storage Location

Reports/Windows/Operating System/Troubleshooting/Recent Past/

### Record

System Overview (PI)

**Table 1.46 Report Data for System Memory Detail**

Fields	
Field Name	Description
Available Mbytes	Size (in megabytes) of unused physical memory. This value is the sum of zero memory, free memory, and standby memory (cached) to be allocated to the process or that can be immediately used by the system. Usually, if this size is continuously less than 5% of the Total Physical Mem Mbytes field, it indicates excessive paging. #1
Cache Faults/sec	Rate (num./second) at which page faults occurred in the file system cache.
Cache Mbytes	Size (in megabytes) of memory being used by the file system cache. #1
Copy Read Hits %	Percentage (%) of read requests from the file system cache pages.
Copy Reads/sec	Rate (num./second) of read operations from file system cache pages, including memory copy processing from cache to the application buffer.
Pages/sec	Rate (num./second) at which page faults occurred in page operations. This value is the sum of the Pages Input/sec and Pages Output/sec fields. Usually, if this field continuously exceeds 5, memory may have entered a system bottleneck.
Pool Nonpaged Bytes	Size (in kilobytes) of the physical memory that cannot be paged out, the area allocated when the system component executed the task. Usually, if this field is constantly on the increase although the server active status is not on the increase, a process where a memory leak occurred may be being executed. #1
Pool Paged Bytes	Size (in kilobytes) of the physical memory that can be paged out, the area allocated when the system component executed the task. #1
System Cache Resident Bytes	Size (in bytes) of pageable physical memory in the file system cache used by OS code (file system read by Ntoskrnl.exe, Hal.dll, boot driver, or Ntldr/osloader). #1

## 1.8.29 System Overview (Real-Time Report on the System Overview)

### Overview

The System Overview report displays in real-time an overview of the entire system. This report displays a list and line graph.

### Storage Location

Reports/Windows/Operating System/Troubleshooting/Real-Time/

### Record

System Overview (PI)

**Table 1.47 Report Data for System Overview (Real-Time Report on the System Overview)**

Fields	
Field Name	Description
Available Mbytes	Size (in megabytes) of unused physical memory. This value is the sum of zero memory, free memory, and standby memory (cached) to be allocated to the process or that can be immediately used by the system.  Usually, if this size is continuously less than 5% of the Total Physical Mem Mbytes field, it indicates excessive paging. #1
Bytes Total/sec	Rate (bytes/second) at which the server sent data to or received data from the network. To display the Server Activity Summary report, choose this field.
CPU %	Processor usage. Percentage (%) of the elapsed time during which the processor executed non-idle threads. The maximum is 100 regardless of whether a single-processor or multiprocessor environment is in use. To display the CPU Usage - Top 10 Processes report, choose this field.
File Control Ops/sec	Rate (num./second) at which the processor performed operations other than operations to read data from or write data to the file system.
File Data Ops/sec	Rate (num./second) at which the processor performed operations to read data from or write data to the file system.  To display the Disk Time - Top 10 Logical Drives report, choose this field.
Page Faults/sec	Rate (num./second) at which page faults occurred. Usually, if this rate continuously exceeds 5, it indicates a memory bottleneck. To display the Page Faults - Top 10 Processes report, choose this field.
Pages/sec	Rate (num./second) at which page faults occurred in page operations.  This value is the sum of the Pages Input/sec and Pages Output/sec fields. Usually, if this field continuously exceeds 5, memory may have entered a system bottleneck.
Transition Faults/sec	Rate (num./second) at which pages were not paged even if a page used by another shared process or a page in the updated page listing or standby listing was recovered when a page fault occurred.

<b>Drilldown Reports (Report Level)</b>	
<b>Report Name</b>	<b>Description</b>
Free Space - Top 10 Logical Drives	Displays the amount of available space on drives.
Network Segment Summary	Displays the network segments' operating status.
<b>Drilldown Reports (Field Level)</b>	
<b>Report Name</b>	<b>Description</b>
CPU Usage - Top 10 Processes	Displays the top 10 processes in terms of CPU usage. To display this report, choose the CPU % field.
Disk Time - Top 10 Logical Drives	Displays the usage of the top 10 logical drives. To display this report, choose the File Data Ops/sec field.
Page Faults - Top 10 Processes	Displays the top 10 processes in terms of number of page faults. To display this report, choose the Page Faults/sec field.
Server Activity Summary	Displays network information for server components. To display this report, choose the Bytes Total/sec field.

### 1.8.30 System Overview (Historical Report on the System Overview)

#### Overview

The System Overview report displays a system overview on a minute-by-minute basis over the past hour. This report displays a table and line graph.

#### Storage Location

Reports/Windows/Operating System/Troubleshooting/Recent Past/

#### Record

System Overview (PI)

Table 1.48 Report Data for System Overview (Historical Report on the System Overview)

Fields	
Field Name	Description
Bytes Total/sec	Rate (bytes/second) at which the server sent data to or received data from the network. Choose this field to display the Activity Summary report.
CPU %	Processor usage. Percentage (%) of the elapsed time during which the processor executed non-idle threads. The maximum is 100 regardless of whether a single-processor or multiprocessor environment is in use. Choose this field to display the CPU Usage Summary report.
File Control Ops/sec	Rate (num./second) at which the processor performed operations other than operations to read data from or write data to the file system.
File Data Ops/sec	Rate (num./second) at which the processor performed operations to read data from or write data to the file system. Choose this field to display the File System I/O Summary report.
Page Faults/sec	Rate (num./second) at which page faults occurred. Usually, if this rate continuously exceeds 5, it indicates a memory bottleneck. Choose this field to display the CPU Usage Summary report.
Pages/sec	Rate (num./second) at which page faults occurred in page operations. This value is the sum of the Pages Input/sec and Pages Output/sec fields. Usually, if this field continuously exceeds 5, memory may have entered a system bottleneck.
Transition Faults/sec	Rate (num./second) at which pages were not paged even if a page used by another shared process or a page in the updated page listing or standby listing was recovered when a page fault occurred.

Drilldown Report (Report Level)	
Report Name	Description
System Memory Detail	Displays details about minute-by-minute memory usage by the operating system over the past hour.
Drilldown Reports (Field Level)	
Report Name	Description
CPU Usage Summary	Displays minute-by-minute CPU usage over the past hour. To display this report, choose the CPU % field.
File System I/O Summary	Displays minute-by-minute file system status over the past hour. To display this report, choose the File Data Ops/sec field.
Memory Paging	Displays the details about minute-by-minute page fault and paging status over the past hour. To display this report, choose the Page Faults/sec field.
Server Activity Summary	Displays network information for the server component. To display this report, choose the Bytes Total/sec field.

## 1.8.31 System Utilization Status

### Overview

The System Utilization Status report displays, in real-time, the status of sending and receiving operations that the server performed between networks. This report displays a list and line graph.

### Storage Location

Reports/Windows/Operating System/Status Reporting/Real-Time/

### Record

System Overview (PI)

Table 1.49 Report Data for System Utilization Status

Fields	
Field Name	Description
Bytes Total/sec	Rate (bytes/second) at which the server sent data to or received data from the network.
CPU %	Processor usage. Percentage (%) of the elapsed time during which the processor executed non-idle threads. The maximum is 100 regardless of whether a single-processor or multiprocessor environment is in use.
Processor Queue Length	Number of requests in the processor queue that are ready for execution and are waiting for processor time.  Usually, if the queue length continuously exceeds 2, it indicates that the processor is congested. #1
Redir Bytes Total/sec	Rate (bytes/second) at which the Redirector sent data to or received data from the network.
Server Sessions	Number of active sessions on the server. #1

## 1.8.32 Workload Status

### Overview

The Workload Status report displays in real-time data related to the system workload. This report displays a list and line graph.

### Storage Location

Reports/Windows/Operating System/Status Reporting/Real-Time/

### Record

System Overview (PI)

Table 1.50 Report Data for Workload Status

Fields	
Field Name	Description
Bytes Total/sec	Rate (bytes/second) at which the server sent data to or received data from the network.
Context Switches/sec	Rate (num./second) at which context switches occurred in all the process threads (when the execution thread releases any processor, when the processor is interrupted by a thread with a higher priority, or when a context is switched from user mode to privilege mode or vice versa to use Executive or subsystem service).
CPU %	Processor usage. Percentage (%) of the elapsed time during which the processor executed non-idle threads. The maximum is 100 regardless of whether a single-processor or multiprocessor environment is in use.
Processes	Number of active processes on memory. #1
Processor Queue Length	Number of requests in the processor queue that are ready for execution and are waiting for processor time. Usually, if the queue length continuously exceeds 2, it indicates that the processor is congested. #1
Server Sessions	Number of active sessions on the server. #1
System Calls/sec	Rate (num./second) at which system service routines were called by processes being executed by the processor.

### 1.8.33 Workload Status (Multi-Agent)

#### Overview

The Workload Status (Multi-Agent) report displays a summary of workload-related data on multiple systems over the past 24 hours (on an hourly basis). This report displays a table and line graph.

#### Storage Location

Reports/Windows/Operating System/Status Reporting/Daily Trend/

#### Record

System Overview (PI)

Table 1.51 Report Data for Workload Status (Multi-Agent)

Fields	
Field Name	Description
Agent Instance #3	Agent name
Bytes Total/sec	Rate (bytes/second) at which the server sent data to or received data from the network.
Context Switches/sec	Rate (num./second) at which context switches occurred in all the process threads (when the execution thread releases any processor, when the processor is interrupted by a thread with a higher priority, or when a context is switched from user mode to privilege mode or vice versa to use Executive or subsystem service).
CPU %	Processor usage. Percentage (%) of the elapsed time during which the processor executed non-idle threads. The maximum is 100 regardless of whether a single-processor or multiprocessor environment is in use.
Processes	Number of active processes on memory. #1
Processor Queue Length	Number of requests in the processor queue that are ready for execution and are waiting for processor time. Usually, if the queue length continuously exceeds 2, it indicates that the processor is congested. #1
Server Sessions	Number of active sessions on the server. #1
System Calls/sec	Rate (num./second) at which system service routines were called by processes being executed by the processor.

## 1.9 Agent for Platform (UNIX) Reports

Table 1.52 lists the reports that are defined in the solution set in alphabetical order:

**Table 1.52 Agent for Platform (UNIX) Reports**

Report Name	Displayed Information	Storage Location
Avg Service Time - Top 10 Devices	Real-time information on the top 10 devices in terms of average service time	Reports/UNIX/Troubleshooting/Real-Time/
Avg Service Time Status - Top 10 Devices	Real-time information on the top 10 devices in terms of average service time	Reports/UNIX/Status Reporting/Real-Time/
Console Messages	Historical data on console messages over the past hour (on a per-minute basis) This information is not available in Linux.	Reports/UNIX/Troubleshooting/Recent Past/Advanced/
CPU Per Processor Status	Real-time information on processor status	Reports/UNIX/Status Reporting/Real-Time/
CPU Per Processor Usage	Real-time information on CPU usage of each processor	Reports/UNIX/Troubleshooting/Real-Time/
CPU Status	Real-time information on CPU usage	Reports/UNIX/Status Reporting/Real-Time/
CPU Status (Multi-Agent)	Historical data on CPU usage for multiple hosts over the past 24 hours (on an hourly basis)	Reports/UNIX/Status Reporting/Daily Trend/
CPU Trend	Historical data on CPU usage for a specific host over the past month (on a daily basis)	Reports/UNIX/Monthly Trend/
CPU Trend (Multi-Agent)	Historical data on CPU usage for multiple hosts over the past month (on a daily basis)	Reports/UNIX/Monthly Trend/
CPU Usage - Top 10 Processes	Real-time information on the top 10 processes in terms of CPU usage	Reports/UNIX/Troubleshooting/Real-Time/
CPU Usage Summary	Historical data on CPU usage over the past hour (on a per-minute basis)	Reports/UNIX/Troubleshooting/Recent Past/
Device Detail	Real-time information on a selected device	Reports/UNIX/Troubleshooting/Real-Time/Drilldown Only/
Device Usage Status	Real-time information on device usage	Reports/UNIX/Status Reporting/Real-Time/
Device Usage Status (Multi-Agent)	Historical data on device usage for multiple hosts over the past 24 hours (on an hourly basis)	Reports/UNIX/Status Reporting/Daily Trend/Advanced/
Free Space Mbytes - Top 10 Local File Systems	Real-time information on the 10 local file systems that have the most free space.	Reports/UNIX/Status Reporting/Real-Time/

Report Name	Displayed Information	Storage Location
I/O Activity - Top 10 Processes	Real-time information on the top 10 processes in terms of the number of I/O operations. This information is not available in HP-UX, AIX, and Linux.	Reports/UNIX/Troubleshooting/Real-Time/
I/O Overview	Historical data on the number of I/O operations over the past hour (on a per-minute basis). This information is not available in Linux.	Reports/UNIX/Troubleshooting/Recent Past/
Local File System Detail	Real-time information on a selected local file system	Reports/UNIX/Troubleshooting/Real-Time/Drilldown Only/
Major Page Faults - Top 10 Processes	Real-time information on the top 10 processes in terms of the number of page faults that cause physical I/Os	Reports/UNIX/Troubleshooting/Real-Time/
Memory Paging	Historical data on memory usage over the past hour (on a per-minute basis) This information is not available in Linux.	Reports/UNIX/Troubleshooting/Recent Past/
Memory Paging Status	Real-time information on memory and paging This information is not available in Linux.	Reports/UNIX/Status Reporting/Real-Time/
Memory Paging Status (Multi-Agent)	Historical data on memory usage for multiple hosts over the past 24 hours (on an hourly basis) This information is not available in Linux.	Reports/UNIX/Status Reporting/Daily Trend/
Network Interface Detail	Real-time information on the network usage status of a selected system	Reports/UNIX/Troubleshooting/Real-Time/Drilldown Only/
Network Interface Summary (real-time report on network usage)	Real-time information on network usage	Reports/UNIX/Troubleshooting/Real-Time/
Network Interface Summary (historical report on the network usage status)	Historical data on network usage over the past hour (on a per-minute basis)	Reports/UNIX/Troubleshooting/Recent Past/Advanced/
Network Overview	Historical data on network usage over the past hour (on a per-minute basis)	Reports/UNIX/Troubleshooting/Recent Past/
Network Status	Real-time information on network usage	Reports/UNIX/Status Reporting/Real-Time/
Network Status (Multi-Agent)	Historical data on network usage for multiple hosts over the past 24 hours (on an hourly basis)	Reports/UNIX/Status Reporting/Daily Trend/
NFS Activity Overview	Historical data on the operating status of NFS clients and the NFS server over the past hour (on a per-minute basis) This information is not available in Linux.	Reports/UNIX/Troubleshooting/Recent Past/

Report Name	Displayed Information	Storage Location
NFS Client Detail	Real-time information on a selected NFS client This information is not available in Solaris 10 and Linux.	Reports/UNIX/Troubleshooting/Real-Time/Drilldown Only/
NFS Load Trend	Historical data on the operating status of NFS clients and the NFS server over the past month (on a daily basis) This information is not available in Linux.	Reports/UNIX/Monthly Trend/
NFS Server Detail	Real-time information on a selected NFS server This information is not available in Solaris 10 and Linux.	Reports/UNIX/Troubleshooting/Real-Time/Drilldown Only/
NFS Usage Status	Real-time information on the operating status of NFS clients and the NFS server This information is not available in Linux.	Reports/UNIX/Status Reporting/Real-Time/
NFS Usage Status (Multi-Agent)	Historical data on the operating status of NFS clients and the NFS server for multiple hosts over the past 24 hours (on an hourly basis) This information is not available in Linux.	Reports/UNIX/Status Reporting/Daily Trend/
Paging Trend (Multi-Agent)	Historical data on page scans for multiple hosts over the past month (on a daily basis) This information is not available in Linux.	Reports/UNIX/Monthly Trend/
Process Detail	Real-time information on a selected host process	Reports/UNIX/Troubleshooting/Real-Time/Drilldown Only/
Process Overview	Historical data on process activity over the past hour (on a per-minute basis)	Reports/UNIX/Troubleshooting/Recent Past/Advanced/
Process Summary Status	Real-time information on the operating status of processes	Reports/UNIX/Status Reporting/Real-Time/
Process Trend	Historical data on the number of processes over the past month (on a daily basis)	Reports/UNIX/Monthly Trend/
Remote File System Detail	Real-time information on a selected remote file system	Reports/UNIX/Troubleshooting/Real-Time/Drilldown Only/
Space Usage - Top 10 Local File Systems	Real-time information on the top 10 local file systems in terms of space usage	Reports/UNIX/Troubleshooting/Real-Time/
Space Usage - Top 10 Remote File Systems	Real-time information on the top 10 remote file systems in terms of space usage	Reports/UNIX/Troubleshooting/Real-Time/
System Overview (real-time report on the system operating status)	Real-time information on the operating status of the system	Reports/UNIX/Troubleshooting/Real-Time/
System Overview (historical report on the system activity status)	Historical data on system activity over the past hour (on a per-minute basis)	Reports/UNIX/Troubleshooting/Recent Past/

Report Name	Displayed Information	Storage Location
System Utilization Status	Real-time information on the operating status of the system	Reports/UNIX/Status Reporting/Real-Time/
Workload Status	Real-time information on the system workload	Reports/UNIX/Status Reporting/Real-Time/
Workload Status (Multi-Agent)	Historical data on the system workload for multiple hosts over the past 24 hours (on an hourly basis)	Reports/UNIX/Status Reporting/Daily Trend/

## 1.9.1 Avg Service Time - Top 10 Devices

### Overview

The Avg Service Time - Top 10 Devices report displays real-time information on the top 10 devices in terms of average operation time. The display format is a bar graph.

### Storage Location

Reports/UNIX/Troubleshooting/Real-Time/

### Record

Device Detail (PI\_DEVD)

Table 1.53 Report Data for Avg Service Time - Top 10 Devices

Fields	
<b>Field Name</b>	<b>Description</b>
Avg Service Time	Average I/O operation time (in seconds) on a device. To display a Device Detail report, choose this field.
Device Name	Device name
<b>Drilldown Report (Report Level)</b>	
<b>Report Name</b>	<b>Description</b>
I/O Activity - Top 10 Processes	Displays real-time information on the top 10 processes in terms of the number of I/O operations. This report is not available for HP-UX, AIX, or Linux.
<b>Drilldown Report (Field Level)</b>	
<b>Report Name</b>	<b>Description</b>
Device Detail	Displays real-time information on a selected device. To display this report, choose the Avg Service Time field.

## 1.9.2 Avg Service Time Status - Top 10 Devices

### Overview

The Avg Service Time Status - Top 10 Devices report displays real-time information on the top 10 devices in terms of average operation time. The display consists of a table and a bar graph.

### Storage Location

Reports/UNIX/Status Reporting/Real-Time/

### Record

Device Detail (PI\_DEVD)

Table 1.54 Report Data for Avg Service Time Status - Top 10 Devices

Fields	
Field Name	Description
Avg Service Time	Average I/O operation time (in seconds) on a device
Device Name	Device name
I/O Mbytes	Total transfer size (in megabytes) of I/O processes
Mbytes Xferd/sec	Average I/O speed (megabytes per second)
Total I/O Ops/sec	Frequency at which I/O processes occurred (times per second)

## 1.9.3 Console Messages

### Overview

The Console Messages report displays historical data on console messages on a per-minute basis over the past hour. This report does not support Japanese-language data. The display format is a table.

**Note:** This report is not available for Linux.

### Storage Location

Reports/UNIX/Troubleshooting/Recent Past/Advanced/

### Record

Logged Messages (PL\_MESS)

For details about this record, see the chapter that describes collecting log information, in the *HiCommand Tuning Manager Agent Administration Guide*.

**Note:** Messages in this record do not support Japanese-language data.

### Field

Name: Message Text

Description: Message text (consists of one line of information taken from the log file).

## 1.9.4 CPU Per Processor Status

### Overview

The CPU Per Processor Status report displays real-time information on processor status. The display format is a stacked bar graph.

### Storage Location

Reports/UNIX/Status Reporting/Real-Time/

### Record

CPU - Per Processor Detail (PI\_CPUP)

Table 1.55 Report Data for CPU Per Processor Status

Fields	
Field Name	Description
Idle %	Percentage (%) of time the processor was idle
Processor ID	Processor identifier
System %	Percentage (%) of time the system operated in kernel mode
User %	Percentage (%) of time the processor operated in user mode
Wait %	Percentage of time (%) the processor was waiting for I/Os

## 1.9.5 CPU Per Processor Usage

### Overview

The CPU Per Processor Usage report displays real-time information on CPU usage of each processor. The display format is a stacked bar graph.

### Storage Location

Reports/UNIX/Troubleshooting/Real-Time/

### Record

CPU - Per Processor Detail (PI\_CPUP)

Table 1.56 Report Data for CPU Per Processor Usage

Fields	
Field Name	Description
Idle %	Percentage (%) of time the processor was idle
Processor ID	Processor identifier
System %	Percentage (%) of time the system operated in kernel mode
User %	Percentage (%) of time the processor operated in user mode
Wait %	Percentage of time (%) the processor was waiting for I/Os

## 1.9.6 CPU Status

### Overview

The CPU Status report displays real-time information on CPU usage. The display consists of a list and a line graph.

### Storage Location

Reports/UNIX/Status Reporting/Real-Time/

### Record

System Summary Overview (PI)

Table 1.57 Report Data for CPU Status

Fields	
Field Name	Description
1-Minute Run Queue Avg	Average number of processes that were queued in the execution queue within the last 1 minute. In HP-UX, Solaris, and AIX, this value does not include the number of threads waiting for I/Os. In Linux, this value includes the number of threads waiting for I/Os.
15-Minute Run Queue Avg	Average number of processes that were queued in the execution queue within the last 15 minutes. In HP-UX, Solaris, and AIX, this value does not include the number of threads waiting for I/Os. In Linux, this value includes the number of threads waiting for I/Os.
5-Minute Run Queue Avg	Average number of processes that were queued in the execution queue within the last 5 minutes. In HP-UX, Solaris, and AIX, this value does not include the number of threads waiting for I/Os. In Linux, this value includes the number of threads waiting for I/Os.
CPU %	CPU usage rate (%). This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning). Click this field to display the CPU Per Processor Status report.
Context Switches	Number of times context switch was executed
Idle %	Percentage (%) of time the system was idle. This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning).
Kernel CPU %	Percentage (%) of time the system was operating in kernel mode. This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning).
Record Time	Time at which the record was created (GMT)
System Calls	Number of system calls that occurred
User CPU %	Percentage (%) of time the processor operated in user mode. This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning).

<b>Fields</b>	
<b>Field Name</b>	<b>Description</b>
Wait %	Percentage (%) of time the processor was idle waiting for I/Os. This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning).
<b>Drilldown Report (Field Level)</b>	
<b>Report Name</b>	<b>Description</b>
CPU Per Processor Status	Displays real-time information on the processor status. To display this report, choose the CPU % field.

## 1.9.7 CPU Status (Multi-Agent)

### Overview

The CPU Status (Multi-Agent) report displays historical data on CPU usage for multiple hosts, on an hourly basis over the past 24 hours. The display consists of a table and a line graph.

### Storage Location

Reports/UNIX/Status Reporting/Daily Trend/

### Record

System Summary Overview (PI)

Table 1.58 Report Data for CPU Status (Multi-Agent)

Fields	
Field Name	Description
1-Minute Run Queue Avg	Average number of processes that were queued in the execution queue within the last 1 minute. In HP-UX, Solaris, and AIX, this value does not include the number of threads waiting for I/Os. In Linux, this value includes the number of threads waiting for I/Os.
Agent Instance See <i>Note</i>	Name of the host where Agent for Platform is running
CPU %	CPU usage rate (%). This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning).
Context Switches	Number of times context switch was executed
Kernel CPU %	Percentage (%) of time the system was operating in kernel mode. This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning).
System Calls	Number of system calls that occurred
User CPU %	Percentage (%) of time the processor operated in user mode. This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning).
Wait %	Percentage (%) of time the processor was idle waiting for I/Os. This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning).

*Note:* This field is added only when data is stored in the Store database. For details, see section 2.5.

## 1.9.8 CPU Trend

### Overview

The CPU Trend report displays historical data on CPU usage at a specific host on a daily basis over the past month. The display format is a line graph.

### Storage Location

Reports/UNIX/Monthly Trend/

### Record

System Summary Overview (PI)

Table 1.59 Report Data for CPU Trend

Fields	
Field Name	Description
CPU %	CPU usage rate (%). This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning).
Kernel CPU %	Percentage (%) of time the system was operating in kernel mode. This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning).
User CPU %	Percentage (%) of time the processor operated in user mode. This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning).

## 1.9.9 CPU Trend (Multi-Agent)

### Overview

The CPU Trend (Multi-Agent) report displays historical data on CPU usage for multiple hosts on a daily basis over the past month. The display format is a line graph.

### Storage Location

Reports/UNIX/Monthly Trend/

### Record

System Summary Overview (PI)

Table 1.60 Report Data for CPU Trend (Multi-Agent)

Fields	
Field Name	Description
Agent Instance See <i>Note</i>	Name of the host where Agent for Platform is running
CPU %	CPU usage rate (%). This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning). To display the CPU Trend report, choose this field.
<b>Drilldown Reports (Report Level)</b>	
Report Name	Description
CPU Trend	Displays historical data on CPU usage for a specific host, on a daily basis over the past month. To display this report, choose the CPU % field.

*Note:* This field is added only when data is stored in the Store database. For details, see section 2.5.

## 1.9.10 CPU Usage - Top 10 Processes

### Overview

The CPU Usage - Top 10 Processes report displays real-time information on the top 10 processes in terms of CPU usage. The display format is a bar graph.

### Storage Location

Reports/UNIX/Troubleshooting/Real-Time/

### Record

Process Detail Interval (PD\_PDI)

Table 1.61 Report Data for CPU Usage - Top 10 Processes

Fields	
Field Name	Description
CPU %	Average CPU usage rate (%) for a process per processor (in AIX 5L V5.3, processors logically partitioned by micro-partitioning). To display the <code>Process Detail</code> report, choose this field.
PID	Process ID
Program	Name of executing program
<b>Drilldown Report (Report Level)</b>	
Report Name	Description
CPU Per Processor Usage	Displays real-time information on CPU usage per processor.
<b>Drilldown Report (Field Level)</b>	
Report Name	Description
Process Detail	Displays real-time information on a selected host process. To display this report, choose the CPU % field.

## 1.9.11 CPU Usage Summary

### Overview

The CPU Usage Summary report displays historical data on CPU usage on a per-minute basis over the past hour. The display consists of a table and a line graph.

### Storage Location

Reports/UNIX/Troubleshooting/Recent Past/

### Record

System Summary Overview (PI)

Table 1.62 Report Data for CPU Usage Summary

Fields	
Field Name	Description
15-Minute Run Queue Avg	Average number of processes that were queued in the execution queue within the last 15 minutes. In HP-UX, Solaris, and AIX, this value does not include the number of threads waiting for I/Os. In Linux, this value includes the number of threads waiting for I/Os.
CPU %	CPU usage rate (%). This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning).
Context Switches	Number of times context switch was executed
Idle %	Percentage (%) of time the system was idle. This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning).
Interrupts	Number of interrupts that occurred
Kernel CPU %	Percentage (%) of time the system was operating in kernel mode. This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning).
Run Queue	Number of processes waiting in the queue
System Calls	Number of system calls that occurred
User CPU %	Percentage (%) of time the processor operated in user mode. This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning).
Wait %	Percentage (%) of time the processor was idle waiting for I/Os. This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning).

## 1.9.12 Device Detail

### Overview

The Device Detail report displays real-time information on a selected device. This information is displayed as a list in a drilldown report.

### Storage Location

Reports/UNIX/Troubleshooting/Real-Time/Drilldown Only/

### Record

Device Detail (PI\_DEVD)

Table 1.63 Report Data for Device Detail

Fields	
Field Name	Description
Avg Service Time	Average I/O operation time (in seconds) on a device
Avg Wait Time	Average I/O wait time (in seconds) on a device
Device Name	Device name
I/O Mbytes	Total transfer size (in megabytes) of I/O processes
Mbytes Xferd/sec	Average I/O speed (megabytes per second)
Queue Length	Device queue length. One unit of this value is one second of I/O operations.
Read Mbytes	Transfer size of read operations (in megabytes)
Reads/sec	Frequency at which read operations occurred (times per second)
Total I/O Ops	Number of I/O processes that occurred
Total I/O Ops/sec	Frequency at which I/O operations occurred (times per second)
Total Service Time	Total operating time of processes on a device (in seconds). This value includes wait time.  In HP-UX, this value is the total operation time of all I/Os. If operations are continuously performed on a device, this value might greatly exceed the <code>Interval</code> value. In the same situation on other OSs, this value might also exceed the <code>Interval</code> value.
Write Mbytes	Transfer size of write processes (in megabytes)
Writes/sec	Frequency at which write operations occurred (times per second)

## 1.9.13 Device Usage Status

### Overview

The Device Usage Status report displays real-time information on device usage. The display consists of a list and a line graph.

### Storage Location

Reports/UNIX/Status Reporting/Real-Time/

### Record

Device Summary (PI\_DEVS)

**Table 1.64 Report Data for Device Usage Status**

Fields	
Field Name	Description
Avg Service Time/op	Average I/O operation time on a device (in seconds)
Devices	Number of devices
I/O Mbytes	Total transfer size of I/O processes (in megabytes)
Mbytes Xferd/sec	Average speed of I/O processes (in megabytes per second)
Read Ops %	Percentage of I/O processes that were read processes (%)
Record Time	Time at which the record was created (GMT)
Total I/O Ops	Number of I/O processes that occurred
Total I/O Ops/sec	Frequency at which I/O operations occurred (times per second)
Write Ops %	Percentage (%) of I/O processes that were write processes

## 1.9.14 Device Usage Status (Multi-Agent)

### Overview

The Device Usage Status (Multi-Agent) report displays historical data on device usage for multiple hosts on an hourly basis over the past 24 hours. The display format is a table.

### Storage Location

Reports/UNIX/Status Reporting/Daily Trend/Advanced/

### Record

Device Summary (PI\_DEVS)

Table 1.65 Report Data for Device Usage Status (Multi-Agent)

Fields	
Field Name	Description
Agent Instance See <i>Note</i>	Name of the host where Agent for Platform is running
Avg Service Time/op	Average processing time for devices (in seconds)
Devices	Number of devices
I/O Mbytes	Total transfer size of I/O processes (in megabytes)
Mbytes Xferd/sec	Average speed of I/O processes (in megabytes per second)
Total I/O Ops	Number of I/O processes that occurred
Total I/O Ops/sec	Frequency at which I/O processes occurred (times per second)

*Note:* This field is added only when data is stored in the Store database. For details, see section 2.5.

## 1.9.15 Free Space Mbytes - Top 10 Local File Systems

### Overview

The Free Space Mbytes - Top 10 Local File Systems report displays real-time information on the 10 local file systems that have the most free space. The display format is a table.

### Storage Location

Reports/UNIX/Status Reporting/Real-Time/

### Record

File System Detail - Local (PD\_FSL)

Table 1.66 Report Data for Free Space Mbytes - Top 10 Local File Systems

Fields	
Field Name	Description
File System	Mount point of the file system
Mbytes Free	Amount of space (in megabytes) not in use
Mbytes Rsvd	Amount of space (in megabytes) reserved for superusers
Mbytes in Use	Amount of space (in megabytes) used by general users
Record Time	Time at which the record was created (GMT)
Total Inodes Available	Number of i-nodes available to general users
Total Size Mbytes	Size of the file system (in megabytes)

## 1.9.16 I/O Activity - Top 10 Processes

### Overview

The I/O Activity - Top 10 Processes report displays real-time information on the top 10 processes in terms of the number of I/O operations. The display format is a bar graph.

*Note:* This report is not available for HP-UX, AIX, or Linux.

### Storage Location

Reports/UNIX/Troubleshooting/Real-Time/

### Record

Process Detail (PD)

Table 1.67 Report Data for I/O Activity - Top 10 Processes

Fields	
Field Name	Description
PID	Process ID
Program	Name of program that is executing
Total I/O Ops/sec	Frequency at which I/O processes occurred (times per second). To display the <code>Process Detail</code> report, choose this field.
<b>Drilldown Report (Field Level)</b>	
Report Name	Description
<code>Process Detail</code>	Displays real-time information on a selected host process. To display this report, choose the <code>Total I/O Ops/sec</code> field.

## 1.9.17 I/O Overview

### Overview

The I/O Overview report displays historical data on the number of I/O operations on a per-minute basis over the past hour. The display consists of a table and a line graph.

**Note:** This report is not available for Linux.

### Storage Location

Reports/UNIX/Troubleshooting/Recent Past/

### Record

System Summary Overview (PI)

**Table 1.68** Report Data for I/O Overview

Fields	
Field Name	Description
Block Ops	Number of block I/O processes that occurred
Block Reads	Number of block read processes that occurred
Block Writes	Number of block write processes that occurred
Logical I/O Ops	Number of logical I/O processes that occurred
Logical Reads	Number of logical read processes that occurred
Logical Writes	Number of logical write processes that occurred
Physical I/O Ops	Number of physical I/O processes that occurred
Physical Reads	Number of physical read processes that occurred
Physical Writes	Number of physical write processes that occurred

## 1.9.18 Local File System Detail

### Overview

The Local File System Detail report displays real-time information on a selected local file system. The display format is a list. This is a drilldown report.

### Storage Location

Reports/UNIX/Troubleshooting/Real-Time/Drilldown Only/

### Record

File System Detail - Local (PD\_FSL)

Table 1.69 Report Data for Local File System Detail

Fields	
Field Name	Description
Available Space %	Percentage (%) of space (in megabytes) available to general users
Available Space Blocks	Number of logical blocks available to general users
Available Space Mbytes	Amount of space (in megabytes) available to general users
Block Size	Logical block size (in bytes)
Blocks in Use	Number of logical blocks in use
File System	Mount point of the file system
Mbytes Free	Percentage (%) of space (in megabytes) not in use
Mbytes Rsvd	Amount of space (in megabytes) reserved for superusers
Mbytes in Use	Amount of space (in megabytes) used by general users
Mbytes in Use %	Percentage (%) of space (in megabytes) used by general users
Total Inodes	Number of file system i-nodes
Total Inodes Available %	Percentage (%) of i-nodes available to general users
Total Inodes Free %	Percentage (%) of i-nodes not in use
Total Inodes Rsvd %	Percentage (%) of i-nodes reserved for superuser
Total Inodes in Use %	Percentage (%) of i-nodes in use
Total Size Blocks	Number of logical blocks in the file system

## 1.9.19 Major Page Faults - Top 10 Processes

### Overview

The Major Page Faults - Top 10 Processes report displays real-time information on the top 10 processes in terms of the number of page faults that cause physical I/Os. The display format is a bar graph.

### Storage Location

Reports/UNIX/Troubleshooting/Real-Time/

### Record

Process Detail Interval (PD\_PDI)

Table 1.70 Report Data for Major Page Faults - Top 10 Processes

Fields	
Field Name	Description
Major Faults	Number of page faults that did not cause a physical I/O To display the Process Detail report, choose this field.
PID	Process ID
Program	Name of executing program
<b>Drilldown Report (Field Level)</b>	
Report Name	Description
Process Detail	Displays real-time information on a selected host process. To display this report, choose the Major Faults field.

## 1.9.20 Memory Paging

### Overview

The Memory Paging report displays historical data on memory usage on a per-minute basis over the past hour. The display consists of a table and a line graph.

*Note:* This report is not available for Linux.

### Storage Location

Reports/UNIX/Troubleshooting/Recent Past/

### Record

System Summary Overview (PI)

Table 1.71 Report Data for Memory Paging

Fields	
Field Name	Description
Alloc Swap %	Percentage (%) of swap region megabytes in use
Cache Read %	This is the percentage (%) of reading operations that were cache reading operations.
Cache Write %	This is the percentage (%) of writing operations that were cache writing operations.
Free Mem %	Percentage (%) of the amount of real memory (in megabytes) not in use
Major Faults	Number of page faults that caused a physical I/O
Minor Faults	Number of page faults that did not cause a physical I/O
Page Ops/sec	Frequency at which the page in and page out processes occurred (times per second)
Swap-In Ops	Number of swap-in processes that occurred
Swap-Out Ops	Number of swap-out processes that occurred
Total Page Scans	Number of pages checked by page scan
Total Swaps	Number of swap processes that occurred

## 1.9.21 Memory Paging Status

### Overview

The Memory Paging Status report displays real-time information on memory and paging. The display consists of a list and a line graph.

**Note:** This report is not available for Linux.

### Storage Location

Reports/UNIX/Status Reporting/Real-Time/

### Record

System Summary Overview (PI)

**Table 1.72** Report Data for Memory Paging Status

Fields	
Field Name	Description
Free Swap %	Percentage (%) of the amount of the swap region (in megabytes) not in use
Free Swap Mbytes	Amount of the swap region (in megabytes) not in use
Major Faults/sec	Frequency of page faults that caused a physical I/O (times per second)
Minor Faults/sec	Frequency of page faults that did not cause a physical I/O (times per second)
Page Scans/sec	Frequency at which page scans occurred (times per second)
Pages In/sec	Frequency at which the page-in process fetched pages (in pages per second)
Pages Out/sec	Frequency at which the page out process output pages (in pages per second)
Record Time	Time at which the record was created (GMT)

## 1.9.22 Memory Paging Status (Multi-Agent)

### Overview

The Memory Paging Status (Multi-Agent) report displays historical data on memory usage for multiple hosts, on an hourly basis over the past 24 hours. The display consists of a table and a line graph.

**Note:** This report is not available for Linux.

### Storage Location

Reports/UNIX/Status Reporting/Daily Trend/

### Record

System Summary Overview (PI)

Table 1.73 Report Data for Memory Paging Status (Multi-Agent)

Fields	
Field Name	Description
Agent Instance See <i>Note</i>	Name of the host where Agent for Platform is running
Free Swap %	Percentage (%) of the amount of the swap region (in megabytes) not in use
Free Swap Mbytes	Amount of the swap region (in megabytes) not in use
Major Faults/sec	Frequency of page faults that caused a physical I/O (times per second)
Page Scans/sec	Frequency at which page scans occurred (times per second)
Pages In/sec	Frequency at which the page-in process fetched pages (in pages per second)
Pages Out/sec	Frequency at which the page out process output pages (in pages per second)

**Note:** This field is added only when data is stored in the Store database. For details, see section 2.5.

## 1.9.23 Network Interface Detail

### Overview

The Network Interface Detail report displays real-time information on the network usage status for the selected system. The display format is a list. This is a drilldown report.

**Note:** The following interface flags are set in the Flags (FLAGS) field and can be judged.

- HP-UX  
UP, LOOPBACK
- Solaris  
UP, BROADCAST, DEBUG, LOOPBACK, POINTOPOINT, NOTRAILERS, RUNNING, NOARP, PROMISC, ALLMULTI, INTELLIGENT, MULTICAST, MULTI\_BCAST, UNNUMBERED, PRIVATE
- AIX  
UP, BROADCAST, DEBUG, LOOPBACK, POINTOPOINT, NOTRAILERS, RUNNING, NOARP, PROMISC, ALLMULTI, OACTIVE, SIMPLEX, MULTICAST
- Linux  
UP, BROADCAST, DEBUG, LOOPBACK, POINTOPOINT, NOTRAILERS, RUNNING, NOARP, PROMISC, ALLMULTI, MULTICAST, MASTER, SLAVE, PORTSEL, AUTOMEDIA, DYNAMIC

### Storage Location

Reports/UNIX/Troubleshooting/Real-Time/Drilldown Only/

### Record

Network Interface Detail (PI\_NIND)

Table 1.74 Report Data for Network Interface Detail

Fields	
Field Name	Description
Flags	Interface flag settings. If the field contains 80 or more characters, only the first 79 characters are displayed, and > is added as the 80th character. In HP-UX, the values of this field include all the flags that indicate the interface status (the <code>ifconfig</code> command is able to display only some of the flags).
IP Address	First IP address found (displayed in Internet address format)
Interface	Interface name
Max Transmission Unit	Maximum packet size (in bytes)
Network Mask	Subnet mask of the first IP address found (displayed in Internet address format)

Fields	
Field Name	Description
Network Name	Network name. Network names larger than 1,027 bytes cannot be used. If the network name is 40 bytes or longer, only the first 39 bytes are displayed. Under HP-UX, AIX, and Linux, if NIS is operating and there are no entries in the NIS database for network addresses, the result of masking performed on the first IP address found for the interface is displayed.
Record Time	Time at which the record was created (GMT)
Type	Interface type

## 1.9.24 Network Interface Summary (Real-Time Report on Network Usage)

### Overview

The Network Interface Summary report displays real-time information on network usage. The display consists of a table and a line graph.

### Storage Location

Reports/UNIX/Troubleshooting/Real-Time/

### Record

Network Interface Summary (PI\_NINS)

Table 1.75 Report Data for Network Interface Summary (Real-Time Report on Network Usage)

Fields	
Field Name	Description
Interface Count	Number of interfaces. To display the <i>Network Interface Detail</i> report, choose this field.
Pkt Collisions	Number of packet collisions that occurred
Pkt Receive Errors	Number of errors during packet reception
Pkt Xmit Errors	Number of errors during packet transmission
Pkts Rcvd	Number of packets received
Pkts Rcvd/sec	Frequency at which packets were received (packets per second)
Pkts Xmitd	Number of packets transmitted
Pkts Xmitd/sec	Frequency at which packets were transmitted (packets per second)
Drilldown Report (Field Level)	
Report Name	Description
Network Interface Detail	Displays real-time information on the network usage status for the selected system. To display this report, choose the Interface Count field.

## 1.9.25 Network Interface Summary (Historical Report on the Network Usage Status)

### Overview

The Network Interface Summary report displays historical data on network usage on a per-minute basis over the past hour. The display consists of a table and a line graph.

### Storage Location

Reports/UNIX/Troubleshooting/Recent Past/Advanced/

### Record

Network Interface Summary (PI\_NINS)

Table 1.76 Report Data for Network Interface Summary (Historical Report on the Network Usage Status)

Fields	
Field Name	Description
Interface Count	Number of interfaces
Pkt Collisions	Number of packet collisions that occurred
Pkt Receive Errors	Number of errors during packet reception
Pkt Xmit Errors	Number of errors during packet transmission
Pkts Rcvd	Number of packets received
Pkts Rcvd/sec	Frequency at which packets were received (packets per second)
Pkts Xmitd	Number of packets transmitted
Pkts Xmitd/sec	Frequency at which packets were transmitted (packets per second)

## 1.9.26 Network Overview

### Overview

The Network Overview report displays historical data on network usage on a per-minute basis over the past hour. The display consists of a table and a line graph.

### Storage Location

Reports/UNIX/Troubleshooting/Recent Past/

### Record

System Summary Overview (PI)

Table 1.77 Report Data for Network Overview

Fields	
Field Name	Description
ICMP Pkts In	Number of IPv4 ICMP packets received. Total number of local packets, remote packets, and packets resulting in errors.
ICMP Pkts Out	Number of IPv4 ICMP packets sent. Total number of local packets, remote packets, and packets resulting in errors.
IP Pkts In	Number of IPv4 IP packets received. Total number of local and remote packets. This value does not include the packets resulting in errors.
IP Pkts Out	Number of IPv4 IP packets sent. Total number of local and remote packets. This value does not include the packets resulting in errors.
TCP Pkts In	Number of IPv4 TCP packets received. Total number of local packets, remote packets, and packets resulting in errors.
TCP Pkts Out	Number of IPv4 TCP packets sent. Total number of local packets, remote packets, and packets resulting in errors.
Total Pkts In	Total number of IPv4 TCP, IPv4 UDP, and IPv4 ICMP packets received
UDP Pkts In	Number of IPv4 UDP packets received. Total number of local packets, remote packets, and packets resulting in errors.
UDP Pkts Out	Number of IPv4 UDP packets sent. Total number of local packets, remote packets, and packets resulting in errors.

## 1.9.27 Network Status

### Overview

The Network Status report displays real-time information on network usage. The display consists of a list and a line graph.

### Storage Location

Reports/UNIX/Status Reporting/Real-Time/

### Record

System Summary Overview (PI)

Table 1.78 Report Data for Network Status

Fields	
Field Name	Description
ICMP Pkts In	Number of IPv4 ICMP packets received. Total number of local packets, remote packets, and packets resulting in errors.
ICMP Pkts Out	Number of IPv4 ICMP packets sent. Total number of local packets, remote packets, and packets resulting in errors.
IP Pkts In	Number of IPv4 IP packets received. Total number of local and remote packets. This value does not include the packets resulting in errors.
IP Pkts Out	Number of IPv4 IP packets sent. Total number of local and remote packets. This value does not include the packets resulting in errors.
Record Time	Time at which the record was created (GMT)
TCP Pkts In	Number of IPv4 TCP packets received. Total number of local packets, remote packets, and packets resulting in errors.
TCP Pkts Out	Number of IPv4 TCP packets sent. Total number of local packets, remote packets, and packets resulting in errors.
UDP Pkts In	Number of IPv4 UDP packets received. Total number of local packets, remote packets, and packets resulting in errors.
UDP Pkts Out	Number of IPv4 UDP packets sent. Total number of local packets, remote packets, and packets resulting in errors.

## 1.9.28 Network Status (Multi-Agent)

### Overview

The Network Status (Multi-Agent) report displays historical data on network usage at multiple hosts on an hourly basis over the past 24 hours. The display consists of a table and a line graph.

### Storage Location

Reports/UNIX/Status Reporting/Daily Trend/

### Record

System Summary Overview (PI)

Table 1.79 Report Data for Network Status (Multi-Agent)

Fields	
Field Name	Description
Agent Instance (see <i>Note</i> )	Name of the host where Agent for Platform is running
ICMP Pkts In	Number of IPv4 ICMP packets received. Total number of local packets, remote packets, and packets resulting in errors.
ICMP Pkts Out	Number of IPv4 ICMP packets sent. Total number of local packets, remote packets, and packets resulting in errors.
IP Pkts In	Number of IPv4 IP packets received. Total number of local and remote packets. This value does not include the packets resulting in errors.
IP Pkts Out	Number of IPv4 IP packets sent. Total number of local and remote packets. This value does not include the packets resulting in errors.
Kernel CPU %	Percentage (%) of time the system was operating in kernel mode. This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning).
TCP Pkts In	Number of IPv4 TCP packets received. Total number of local packets, remote packets, and packets resulting in errors.
TCP Pkts Out	Number of IPv4 TCP packets sent. Total number of local packets, remote packets, and packets resulting in errors.
UDP Pkts In	Number of IPv4 UDP packets received. Total number of local packets, remote packets, and packets resulting in errors.
UDP Pkts Out	Number of IPv4 UDP packets sent. Total number of local packets, remote packets, and packets resulting in errors.

**Note:** This field is added only when data is stored in the Store database. For details, see section 2.5.

## 1.9.29 NFS Activity Overview

### Overview

The NFS Activity Overview report displays historical data on the operating status of NFS clients and the NFS server, on a per-minute basis over the past hour. The display consists of a table and a line graph.

*Note:* This report is not available for Linux.

### Storage Location

Reports/UNIX/Troubleshooting/Recent Past/

### Record

System Summary Overview (PI)

Table 1.80 Report Data for NFS Activity Overview

Fields	
Field Name	Description
NFS Client Lookup Ops	Number of lookup processes that occurred on the NFS client
NFS Client Total Bad Ops	Total number of processes that failed on the NFS client
NFS Client Total Ops	Total number of processes that occurred on the NFS client
NFS Server Lookup Ops	Number of lookup processes that occurred on the NFS server
NFS Server Total Bad Ops	Number of processes that failed on the NFS server
NFS Server Total Ops	Number of processes that occurred on the NFS server

## 1.9.30 NFS Client Detail

### Overview

The NFS Client Detail report displays real-time information on a selected NFS client. The display consists of a list and a line graph. This is a drilldown report.

**Note:** This report is not available for Solaris 10 or Linux.

### Storage Location

Reports/UNIX/Troubleshooting/Real-Time/Drilldown Only/

### Record

NFS Client Overview (PI\_NCO)

Table 1.81 Report Data for NFS Client Detail

Fields	
Field Name	Description
Avg Ops/sec	Frequency at which processes occurred on the NFS client (times per second)
Create Ops %	Percentage (%) of all processes occurring on the NFS client that were <code>create</code> processes
Credential Ops	Number of processes occurring on the NFS client that queried and set up file properties
Data-In Ops	Number of times data input processes occurred on the NFS client
Data-Out Ops	Number of times data output processes occurred on the NFS client
Getattr Ops %	Percentage (%) of all processes occurring on the NFS client that were <code>getattr</code> processes
Internal Ops	Number of times internal processes occurred on the NFS client
Lookup Ops %	Percentage (%) of all processes occurring on the NFS client that were <code>lookup</code> processes
Null Ops %	Percentage (%) of all processes occurring on the NFS client that were <code>null</code> processes
Read Ops %	Percentage (%) of all processes occurring on the NFS client that were <code>read</code> processes
Record Time	Time at which the record was created (GMT)
Remove Ops %	Percentage (%) of all processes occurring on the NFS client that were <code>remove</code> processes
Root Ops V2 %	Percentage (%) of all processes occurring on the NFS client (Version 2.0) that were <code>root</code> processes
Setattr Ops %	Percentage (%) of all processes occurring on the NFS client that were <code>setattr</code> processes

Fields	
Field Name	Description
Stats Ops %	Percentage (%) of all processes occurring on the NFS client that were <code>stats</code> processes
Total Bad Ops	Total number of NFS client processes that failed
Total Ops	Total number of processes that occurred on the NFS client
Total Sleep count	Number of times NFS client processes waited for release of a handle
Write Ops %	Percentage (%) of all processes occurring on the NFS client that were <code>write</code> processes
Writecache Ops %	Percentage (%) of all processes occurring on the NFS client that were <code>writecache</code> processes

## 1.9.31 NFS Load Trend

### Overview

The NFS Load Trend report displays historical data on the operating status of NFS clients and the NFS server, on a daily basis over the past month. The display format is a line graph.

*Note:* This report is not available for Linux.

### Storage Location

Reports/UNIX/Monthly Trend/

### Record

System Summary Overview (PI)

Table 1.82 Report Data for NFS Load Trend

Fields	
Field Name	Description
NFS Client Ops/sec	Frequency at which processes occurred on the NFS client (times per second)
NFS Server Ops/sec	Frequency at which processes occurred on the NFS server (times per second)

## 1.9.32 NFS Server Detail

### Overview

The NFS Server Detail report displays real-time information on a selected NFS server. The display consists of a list and a line graph. This is a drilldown report.

*Note:* This report is not available for Solaris 10 or Linux.

### Storage Location

Reports/UNIX/Troubleshooting/Real-Time/Drilldown Only/

### Record

NFS Server Overview (PI\_NSO)

Table 1.83 Report Data for NFS Server Detail

Fields	
Field Name	Description
Avg Ops/sec	Frequency at which processes occurred on the NFS server (times per second)
Create Ops %	Percentage (%) of all processes that occurred on the NFS server that were create processes
Data-In Ops	Number of times data input processes occurred on the NFS server
Data-Out Ops	Number of times data output processes occurred on the NFS server
Getattr Ops %	Percentage (%) of all processes occurring on the NFS server that were getattr processes
Internal Ops	Number of times internal processes occurred on the NFS server
Lookup Ops %	Percentage (%) of all processes occurring on the NFS server that were lookup processes
Null Ops %	Percentage (%) of all processes occurring on the NFS server that were null processes
Read Ops %	Percentage (%) of all processes occurring on the NFS server that were read processes
Record Time	Time at which the record was created (GMT)
Remove Ops %	Percentage (%) of all processes occurring on the NFS server that were remove processes
Root Ops V2 %	Percentage (%) of all processes occurring on the NFS server (Version 2.0) that were root processes
Setattr Ops %	Percentage (%) of all processes occurring on the NFS server that were setattr processes
Statfs Ops %	Percentage (%) of all processes occurring on the NFS server that were statfs processes
Total Bad Ops	Total number of NFS server processes that failed

Fields	
Field Name	Description
Total Ops	Total number of processes that occurred on the NFS server
Write Ops %	Percentage (%) of all processes occurring on the NFS server that were write processes
Writecache Ops %	Percentage (%) of all processes occurring on the NFS server that were writecache processes

### 1.9.33 NFS Usage Status

#### Overview

The NFS Usage Status report displays real-time information on the operating status of NFS clients and the NFS server. The display consists of a list and a line graph.

*Note:* This report is not available for Linux.

#### Storage Location

Reports/UNIX/Status Reporting/Real-Time/

#### Record

System Summary Overview (PI)

Table 1.84 Report Data for NFS Usage Status

Fields	
Field Name	Description
NFS Client Lookup Ops	Number of lookup processes that occurred on the NFS client
NFS Client Total Bad Ops	Total number of processes that failed on the NFS client
NFS Client Total Ops	Total number of processes that occurred on the NFS client
NFS Server Lookup Ops	Number of lookup processes that occurred on the NFS server
NFS Server Total Bad Ops	Number of processes that failed on the NFS server
NFS Server Total Ops	Number of processes that occurred on the NFS server
Record Time	Time at which the record was created (GMT)

## 1.9.34 NFS Usage Status (Multi-Agent)

### Overview

The NFS Usage Status (Multi-Agent) report displays historical data on the operating status of NFS clients and the NFS server for multiple hosts, on an hourly basis over the past 24 hours. The display consists of a table and a line graph.

**Note:** This report is not available for Linux.

### Storage Location

Reports/UNIX/Status Reporting/Daily Trend/

### Record

System Summary Overview (PI)

Table 1.85 Report Data for NFS Usage Status (Multi-Agent)

Fields	
Field Name	Description
Agent Instance See <i>Note</i>	Name of the host where Agent for Platform is running
NFS Client Lookup Ops	Number of lookup processes that occurred on the NFS client
NFS Client Total Bad Ops	Total number of processes that failed on the NFS client
NFS Client Total Ops	Total number of processes that occurred on the NFS client
NFS Server Lookup Ops	Number of lookup processes that occurred on the NFS server
NFS Server Total Bad Ops	Number of processes that failed on the NFS server
NFS Server Total Ops	Number of processes that occurred on the NFS server

**Note:** This field is added only when data is stored in the Store database. For details, see section 2.5.

## 1.9.35 Paging Trend (Multi-Agent)

### Overview

The Paging Trend (Multi-Agent) report displays historical data on page scans for multiple hosts, on a daily basis over the past month. The display format is a line graph.

*Note:* This report is not available for Linux.

### Storage Location

Reports/UNIX/Monthly Trend/

### Record

System Summary Overview (PI)

### Field

Name: Page Scans/sec

Description: Frequency at which page scans occurred (number per second).

## 1.9.36 Process Detail

### Overview

The Process Detail report displays real-time information on a selected host process. The display format is a list. This is a drilldown report.

### Storage Location

Reports/UNIX/Troubleshooting/Real-Time/Drilldown Only/

### Record

Process Detail Interval (PD\_PDI)

**Table 1.86 Report Data for Process Detail**

Fields	
Field Name	Description
CPU %	Average CPU usage rate (%) for a process per processor (in AIX 5L V5.3, processors logically partitioned by micro-partitioning)
Executable Text Kbytes	Text size (in kilobytes) being used under Solaris, the SAUNIXPMAP environment variable must have been set in order to collect this field; set this variable by executing the following command from the command line: # SAUNIXPMAP=1 # export SAUNIXPMAP
Major Faults	Number of page faults that caused a physical I/O
Minor Faults	Number of page faults that did not cause a physical I/O
PID	Process ID
Parent PID	Process ID of the parent process
Program	Name of executing program
Reads	AIX: Number of RAW read operations that occurred. Solaris: Number of Block read operations that occurred.
Real Mem Kbytes	Amount of real memory (in kilobytes) in use.
Record Time	Time at which the record was created (GMT)
Shared Mem Kbytes	Amount of the shared memory in use (in kilobytes)
Stack Kbytes	Size of the stack in use (in kilobytes)
Start Time	Process start time
Swaps	Number of swaps that occurred
System CPU	Length of time (in seconds) the CPU operated in kernel mode
Total I/O Kbytes	Total transfer size (in kilobytes) of I/O processes
Total I/O Ops	Number of I/O processes that occurred

Fields	
Field Name	Description
Total Process Kbytes	Process size in kilobytes. In AIX, this value is the same as the value displayed in the <code>sz</code> column obtained by the <code>ps -l</code> command. In HP-UX, and Solaris, this value is the same as the result of multiplying the page size by the value displayed in the <code>sz</code> column (obtained by the <code>ps -l</code> command). In Linux, this value is the same as the value displayed in the <code>SIZE</code> column (obtained by the <code>top</code> command).
User	Effective user name of the process
User CPU	Operating time in user mode (in seconds)
Writes	AIX: Number of <code>RAW</code> write operations that occurred. Solaris: Number of <code>Block</code> write operations that occurred.

## 1.9.37 Process Overview

### Overview

The Process Overview report displays historical data on process activity on a per-minute basis over the past hour. The display consists of a table and a line graph.

### Storage Location

Reports/UNIX/Troubleshooting/Recent Past/Advanced/

### Record

Process Summary (PD\_PDS)

Table 1.87 Report Data for Process Overview

Fields	
Field Name	Description
Active System Processes	Number of active system processes. In the first real-time report, 0 is displayed.
Active User Processes	Number of active user processes. In the first real-time report, 0 is displayed. In AIX, and Linux, this field displays the total number of active system processes and active user processes.
Active Users	Number of users executing processes, counted as the number of active system processes or active user processes. In the first real-time report, 0 is displayed.
New Processes	Number of new processes. This field displays the difference between the previous process information and the current process information. For the first real-time report, 0 is displayed.
Processes	Number of processes in the system
Runnable Processes	Number of executable processes
Sleeping Processes	Number of sleeping processes
Stopped Processes	Number of stopped processes
Swapped Processes	Number of processes swapped out (checks the process table for the number of processes that are not in the core)
Terminated Processes	Number of terminated processes. This field displays the difference between the previous process information and the current process information. For the first real-time report, 0 is displayed.
Zombie Processes	Number of zombie processes

## 1.9.38 Process Summary Status

### Overview

The Process Summary Status report displays real-time information on the operating status of processes. The display consists of a list and a line graph.

### Storage Location

Reports/UNIX/Status Reporting/Real-Time/

### Record

Process Summary (PD\_PDS)

Table 1.88 Report Data for Process Summary Status

Fields	
Field Name	Description
Active System Processes	Number of active system processes. In the first real-time report, 0 is displayed.
Active User Processes	Number of active user processes. In the first real-time report, 0 is displayed. In AIX, and Linux, this field displays the total number of active system processes and active user processes.
Processes	Number of processes in the system
Record Time	Time at which the record was created (GMT)
Sleeping Processes	Number of sleeping processes
Swapped Processes	Number of processes swapped out (checks the process table for the number of processes that are not in the core)
Users	Number of actual users
Zombie Processes	Number of zombie processes

## 1.9.39 Process Trend

### Overview

The Process Trend report displays historical data on the number of processes on a daily basis over the past month. The display format is a line graph.

### Storage Location

Reports/UNIX/Monthly Trend/

### Record

System Summary Overview (PI)

### Field

Name: Processes

Description: Number of processes in the system.

## 1.9.40 Remote File System Detail

### Overview

The Remote File System Detail report displays real-time information on a selected remote file system. The display format is a list. This is a drilldown report.

### Storage Location

Reports/UNIX/Troubleshooting/Real-Time/Drilldown Only/

### Record

File System Detail - Remote (PD\_FSR)

Table 1.89 Report Data for Remote File System Detail

Fields	
Field Name	Description
Available Blocks	Number of logical blocks available to general users
Available Space %	Percentage (%) of space (in megabytes) available to general users
Available Space Mbytes	Amount of space (in megabytes) available to general users
Block Size	Logical block size (in bytes)
Blocks in Use	Number of logical blocks in use
File System	Mount point of the file system
Host	Host name where the file system resides
Mbytes Free	Amount of space (in megabytes) not in use
Mbytes Rsvd	Amount of space (in megabytes) reserved for superusers
Mbytes in Use	Amount of space (in megabytes) used by general users
Mbytes in Use %	Percentage (%) of space (in megabytes) used by general users
Remote File System	Remote file system name
Total Size Blocks	Number of logical blocks in the file system

## 1.9.41 Space Usage - Top 10 Local File Systems

### Overview

The Space Usage - Top 10 Local File Systems report displays real-time information on the top 10 local file systems in terms of space usage. The display format is a bar graph.

### Storage Location

Reports/UNIX/Troubleshooting/Real-Time/

### Record

File System Detail - Local (PD\_FSL)

Table 1.90 Report Data for Space Usage - Top 10 Local File Systems

Fields	
Field Name	Description
File System	Mount point of the file system
Mbytes in Use %	Percentage (%) of space (in megabytes) used by general users. To display the Local File System Detail report, choose this field.
Total Size Mbytes	Size of the file system (in megabytes)
Drilldown Report (Field Level)	
Report Name	Description
Local File System Detail	Displays real-time information on a selected local file system. To display this report, choose the Mbytes in Use % field.

## 1.9.42 Space Usage - Top 10 Remote File Systems

### Overview

The Space Usage - Top 10 Remote File Systems report displays real-time information on the top 10 remote file systems in terms of space usage. The display format is a bar graph.

### Storage Location

Reports/UNIX/Troubleshooting/Real-Time/

### Record

File System Detail - Remote (PD\_FSR)

Table 1.91 Report Data for Space Usage - Top 10 Remote File Systems

Fields	
Field Name	Description
Mbytes in Use %	Percentage (%) of space (in megabytes) used by general users. To display the Remote File System Detail report, choose this field.
Remote File System	Remote file system name
Total Size Mbytes	Size of the file system (in megabytes)
Drilldown Report (Field Level)	
Report Name	Description
Remote File System Detail	Displays real-time information on a selected remote file system. To display this report, choose the Mbytes in Use % field.

## 1.9.43 System Overview (Real-Time Report on the System Operating Status)

### Overview

The System Overview report displays real-time information on the operating status of the system. The display consists of a list and a line graph.

### Storage Location

Reports/UNIX/Troubleshooting/Real-Time/

### Record

System Summary Overview (PI)

**Table 1.92 Report Data for System Overview (Real-Time Report on the System Operating Status)**

Fields	
Field Name	Description
CPU %	CPU usage rate (%). This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning). To display the <code>CPU Usage - Top 10 Processes</code> report, choose this field.
Free Swap %	Percentage (%) of the amount of the swap region (in megabytes) not in use
Kernel CPU %	Percentage (%) of time the system was operating in kernel mode. This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning).
Logical I/O Ops	Number of logical I/O processes that occurred. To display the <code>I/O Activity - Top 10 Processes</code> report, choose this field.
Major Faults/sec	Frequency of page faults that caused a physical I/O (times per second). To display the <code>Major Page Faults - Top 10 Processes</code> report, choose this field.
Minor Faults/sec	Frequency of page faults that did not cause a physical I/O (times per second)
NFS Client Total Bad Ops	Total number of processes that failed on the NFS client. To display the <code>NFS Client Detail</code> report, choose this field.
NFS Server Total Bad Ops	Number of processes that failed on the NFS server. To display the <code>NFS Server Detail</code> report, choose this field.
Physical I/O Ops	Number of physical I/O processes that occurred. To display the <code>Avg Service Time - Top 10 Devices</code> report, choose this field.
Record Time	Time at which the record was created (GMT)
Run Queue	Number of processes waiting in the queue
Swapped-In Pages	Number of pages swapped in by swap
Swapped-Out Pages	Number of pages swapped out by swap
Total Page Scans	Number of pages checked by page scans

Fields	
Field Name	Description
Total Pkts In	Total number of IPv4 TCP, IPv4 UDP, and IPv4 ICMP packets received. To display the <i>Network Interface Summary</i> report, choose this field.
User CPU %	Percentage (%) of time the processor operated in user mode. This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning).
Wait %	Percentage (%) of time the processor was idle waiting for I/Os. This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning).
Drilldown Reports (Report Level)	
Report Name	Description
Space Usage - Top 10 Local File Systems	Displays real-time information on the top 10 local file systems in terms of usage rates.
Space Usage - Top 10 Remote File Systems	Displays real-time information on the top 10 remote file systems in terms of usage rates.
Drilldown Reports (Field Level)	
Report Name	Description
Avg Service Time - Top 10 Devices	Displays real-time information on the top 10 devices in terms of average operation time. To display this report, choose the Physical I/O Ops field.
CPU Usage - Top 10 Processes	Displays real-time information on the top 10 processes in terms of CPU usage. To display this report, choose the CPU % field.
I/O Activity - Top 10 Processes	Displays real-time information on the top 10 processes in terms of the number of I/O operations. To display this report, choose the Logical I/O Ops field. This information is not available for HP-UX, AIX, or Linux.
Major Page Faults - Top 10 Processes	Displays real-time information on the top 10 processes in terms of the number of page faults that caused a physical I/O. To display this report, choose the Major Faults/sec field.
Network Interface Summary	Displays information on network usage. To display this report, choose the Total Pkts In field.
NFS Client Detail	Displays real-time information on a selected NFS client. To display this report, choose the NFS Client Total Bad Ops field. This report is not available in Linux.
NFS Server Detail	Displays real-time information on a selected NFS server. To display this report, choose the NFS Server Total Bad Ops field. This report is not available in Linux.

## 1.9.44 System Overview (Historical Report on the System Activity Status)

### Overview

The System Overview report displays historical data on system activity on a per-minute basis over the past hour. The display consists of a table and a line graph.

### Storage Location

Reports/UNIX/Troubleshooting/Recent Past/

### Record

System Summary Overview (PI)

Table 1.93 Report Data for System Overview (Historical Report on the System Activity Status)

Fields	
Field Name	Description
Block Reads	Number of block read processes that occurred. Choose this field to display the <i>I/O Overview</i> report.
CPU %	CPU usage rate (%). This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning). Choose this field to display the <i>CPU Usage Summary</i> report.
Major Faults	Number of page faults that caused a physical I/O. Choose this field to display the <i>Memory Paging</i> report.
NFS Client Total Bad Ops	Total number of processes that failed on the NFS client. Choose this field to display the <i>NFS Activity Overview</i> report.
Swapped-In Pages/sec	Frequency at which swap-in processes swapped in pages (pages per second). In AIX, frequency at which swap-in processes swapped in as many pages as constitutes the paging area (pages per second)
Swapped-Out Pages/sec	Frequency at which swap-out processes swapped out pages (pages per second). In AIX, frequency at which swap-out processes swapped out as many pages as constitutes the paging area (pages per second)
Total Pkts In	Total number of IPv4 TCP, IPv4 UDP, and IPv4 ICMP packets received. Choose this field to display the <i>Network Overview</i> report.
Wait %	Percentage (%) of time the processor was idle waiting for I/Os. This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning).

Drilldown Reports (Field Level)	
Report Name	Description
CPU Usage Summary	Displays historical data on CPU usage on a per-minute basis over the past hour. To display this report, choose the CPU % field.
I/O Overview	Displays historical data on the number of I/O operations on a per-minute basis over the past hour. To display this report, choose the Block Reads field. This report is not available in Linux.
Memory Paging	Displays historical data on memory usage on a per-minute basis over the past hour. To display this report, choose the Major Faults field. This report is not available in Linux.
Network Overview	Displays historical data on network usage on a per-minute basis over the past hour. To display this report, choose the Total Pkts In field.
NFS Activity Overview	Displays historical data on the operating status of NFS clients and the NFS server, on a per-minute basis over the past hour. To display this report, choose the NFS Client Total Bad Ops field. This report is not available in Linux.

## 1.9.45 System Utilization Status

### Overview

The System Utilization Status report displays real-time information on the operating status of the system. The display consists of a list and a line graph.

### Storage Location

Reports/UNIX/Status Reporting/Real-Time/

### Record

System Summary Overview (PI)

Table 1.94 Report Data for System Utilization Status

Fields	
Field Name	Description
15-Minute Run Queue Avg	Average number of processes that were queued in the execution queue within the last 15 minutes. In HP-UX, Solaris, and AIX, this value does not include the number of threads waiting for I/Os. In Linux, this value includes the number of threads waiting for I/Os.
Boot Time	Time of the last boot
CPU %	CPU usage rate (%). This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning).
Free Swap %	Percentage (%) of the amount of the swap region (in megabytes) not in use
NFS Client Total Bad Ops	Total number of processes that failed on the NFS client
NFS Server Total Bad Ops	Number of processes that failed on the NFS server
Page Scans/sec	Frequency at which page scans occurred (times per second)
Record Time	Time at which the record was created (GMT)
Total Pkts In	Total number of IPv4 TCP, IPv4 UDP, and IPv4 ICMP packets received

## 1.9.46 Workload Status

### Overview

The Workload Status report displays real-time information on the system workload. The display consists of a list and a line graph.

### Storage Location

Reports/UNIX/Status Reporting/Real-Time/

### Record

System Summary Overview (PI)

Table 1.95 Report Data for Workload Status

Fields	
Field Name	Description
5-Minute Run Queue Avg	Average number of processes that were queued in the execution queue within the last 5 minutes. In HP-UX, Solaris, and AIX, this value does not include the number of threads waiting for I/Os. In Linux, this value includes the number of threads waiting for I/Os.
CPU %	CPU usage rate (%). This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning).
Context Switches/sec	Frequency at which context switch was executed (times per second)
NFS Client Total Bad Ops	Number of processes that failed on the NFS client
NFS Server Total Bad Ops	Number of processes that failed on the NFS server
Processes	Number of processes in the system
Record Time	Time at which the record was created (GMT)
System Calls/sec	Frequency at which system calls occurred (times per second)
Users	Number of actual users

## 1.9.47 Workload Status (Multi-Agent)

### Overview

The Workload Status (Multi-Agent) report displays historical data on the system workload for multiple hosts, on an hourly basis over the past 24 hours. The display consists of a table and a line graph.

### Storage Location

Reports/UNIX/Status Reporting/Daily Trend/

### Record

System Summary Overview (PI)

Table 1.96 Report Data for Workload Status (Multi-Agent)

Fields	
Field Name	Description
1-Minute Run Queue Avg	Average number of processes that were queued in the execution queue within the last 1 minute. In HP-UX, Solaris, and AIX, this value does not include the number of threads waiting for I/Os. In Linux, this value includes the number of threads waiting for I/Os.
Agent Instance See <i>Note</i>	Name of the host where Agent for Platform is running
CPU %	CPU usage rate (%). This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning).
Context Switches/sec	Frequency at which context switch was executed (times per second)
Free Swap %	Amount of the swap region (in megabytes) not in use
Page Scans/sec	Frequency at which page scans occurred (times per second)
Processes	Number of processes in the system
System Calls/sec	Frequency at which system calls occurred (times per second)
Users	Number of actual users

**Note:** This field is added only when data is stored in the Store database. For details, see section 2.5.



## Chapter 2 Working with Records

This chapter describes the contents of the records collected by Agents. You can use Performance Reporter to view the records collected by an Agent, using predefined solution set reports or user-defined reports. For details about the solution set reports provided by each Agent, see Chapter 1.

- Data Model Version (see section 2.1)
- Format of Record Explanations (see section 2.2)
- List of Common Key Fields (see section 2.3)
- Field Values (see section 2.4)
- Fields Added at the Time Data is Stored in the Store Database (see section 2.5)
- Notes on Collecting Records (see section 2.6)
- Agent for RAID Map Records (see section 2.7)
- Agent for Platform (Windows) Records (see section 2.8)
- Agent for Platform (UNIX) Records (see section 2.9)

## 2.1 Data Model Version

The definitions of an Agent's records and fields are collectively called a *data model*. There is a specific version number for each Agent and its data model, as listed in the following table.

Table 2.1 Version Numbers for Each Agent and Its Data Model

Agent Name	Agent Version	Data Model Version
Agent for RAID Map	5.5	4.0
Agent for Platform (Windows)	5.5	5.0
Agent for Platform (UNIX)	5.5	5.1

For details about the data model version that corresponds to an Agent whose product version is 5.1 or earlier, see the appendix in the *HiCommand Tuning Manager Agent Administration Guide*. For details about the data model, see the chapter in the *HiCommand Tuning Manager Agent Administration Guide* that provides an overview of the data handled by the Tuning Manager series programs.

## 2.2 Format of Record Explanations

This chapter describes the records for the Agents in alphabetical order. Each record explanation contains the following items. Explanations and items specific to each Agent are provided under the Agent name.

### Function

Provides an overview of the performance data that is stored in the record and includes important notes.

### Default and Changeable Values

Consists of a table listing default values of the performance data collection conditions that are defined for the record, and indicating whether the user can change the values. You can use Performance Reporter's `jpcasrec output` command to output, to a file, the values of data collection conditions for each record. You can also use Performance Reporter's `jpcasrec update` command to change the value of data collection conditions. For details about the `jpcasrec output` and `jpcasrec update` commands, see the *HiCommand Tuning Manager Command Line Interface Guide*.

The *Default and Changeable Values* table for each record consists of the following items:

- Collection Interval

Indicates the performance data collection interval (in seconds). The default value is recommended. Specify one of the following if you wish to change the value:

- 0
- A value from 60 to 3,600 that is a multiple of 60, and is also a whole divisor of 3,600
- A value from 3,600 to 86,400 that is a multiple of 3,600, and is also a whole divisor of 86,400

If a value other than those described above is specified, performance data might not be stored properly. If 0 is set, performance data will not be collected.

- Collection Offset

Indicates the offset value (in seconds) used to shift the start time for collecting performance data for each record. If a number of records collect data at the same time, the load on the hardware and programs to be monitored may greatly increase. This offset value can be used to disperse the load caused by the collection. If you wish to change this value, specify a value from 0 to 32,767 (in seconds, and within the range specified in Collection Interval), considering the load caused by the collection processing.

- Log
 

Indicates whether to collect performance data to be stored in the Store database. Specify one of the following values:

  - Yes: Collect (however, if Collection Interval is set to 0, performance data is not collected)
  - No: Do not collect
- LOGIF
 

Indicates conditions for storing collected performance data in the Store database.
- Sync Collection With (in Agent for Platform (UNIX))
 

Indicates a record with which performance data, collected at a point in time, is to be synchronized. **Note:** When Sync Collection With is displayed, Collection Interval and Collection Offset are not displayed. For details, see the chapter that describes management of the Store database, in the *HiCommand Tuning Manager Agent Administration Guide*.

### Key Fields

Indicates the field that works as a key to identify an instance of a multi-instance record, in *view-name (manager-name)* format. There are two types of key fields: those common to all records, and those unique to a record. *Key fields* indicates the key fields unique to a record. For details about key fields common to all records, see section 2.3.

### Lifetime

Indicates the period during which consistency is guaranteed for the performance data that is collected in the record. For details about the lifetime, see the chapter that provides an overview of the data handled by the Tuning Manager series programs, in the *HiCommand Tuning Manager Agent Administration Guide*.

### Record Size

Indicates the amount of performance data that can be collected and stored in a record at one time. In a multi-instance record, values are given for both the fixed part and variable part. In a record other than a multi-instance record, the value for the variable part is always 0. Estimate the Store database size by using these values. For details about how to calculate this size, see the *HiCommand Tuning Manager Agent Administration Guide*.

### Fields

Provides a table that describes the fields of each record. The table contains the following items:

- View Name (Manager Name)
  - View Name
 

The field name displayed by Performance Reporter.
  - Manager Name
 

The field name used in the programs of the Tuning Manager series.

- Description

Explanation of the value stored in the field.

Agent for Platform (Windows), #<sup>1</sup> through #<sup>3</sup> in tables mean the following:

#1

The value in this field is the newest monitored value returned from the OS during collection.

#2

If this field is displayed in a historical report, the *View-name* (Total) field is added.

#3

If this field is summarized in a historical report, the last collected value is displayed.

In each field, the following types of performance data are calculated:

- Averages and rates calculated from the data collected this time and the data collected in previous intervals
- Data to be calculated solely from the data collected this time (including the values accumulated internally by the OS. Data indicated by #<sup>1</sup> in tables correspond to these values.)
- Data sourced from other fields (see *Data source* in field tables for each record)

Unless otherwise indicated, performance data is the values to be calculated from the data collection interval.

If records of the PI record type in a historical report are summarized when a value other than *minutes* is specified as the report interval, the following types of values are displayed:

- Average value of the summarized intervals
- Last collected value
- Total value
- Minimum value
- Maximum value

Unless otherwise indicated, the average value of the summarized intervals is displayed as a field value.

- Format

Data type of the field value, such as `char` or `float`. For details about data types, see section 2.4.1.

- Delta

If this item is `YES`, you can switch the display of the real-time report from a differential value to a cumulative value. If this item is `NO`, you cannot switch the value. For details about delta, see section 2.4.2.

- Supported OS (in Agent for RAID Map)

Indicates the platforms supported by the field.

- Supported Storage (in Agent for RAID Map)

Indicates the storage models supported by the field.

- Thunder 9200: Indicates that the Thunder 9200 is supported.
  - Thunder 9500V: The following storage products are supported:
    - Thunder 9520V
    - Thunder 9530V
    - Thunder 9570V
    - Thunder 9580V
    - Thunder 9585V
  - TagmaStore AMS: The following storage products are supported:
    - TagmaStore AMS200
    - TagmaStore AMS500
    - TagmaStore AMS1000
    - TagmaStore WMS100
  - Lightning 9900: Indicates that the following storage products are supported.
    - Lightning 9910
    - Lightning 9960
  - Lightning 9900V: The following storage products are supported:
    - Lightning 9970V
    - Lightning 9980V
  - TagmaStore USP: The following storage products are supported:
    - TagmaStore USP 100
    - TagmaStore USP 600
    - TagmaStore USP 1100
    - TagmaStore NSC55
  - All: All storage products are supported.
- Supported Version (in Agent for Platform (Windows))
- Indicates the Windows version supported by the field:
- 2000: Windows 2000 is supported by the field.
  - 2003: Windows Server™ 2003 (x86) is supported by the field. Windows Server 2003 (x64) is supported except for the following records:
    - AppleTalk Overview (PI\_APLE)
    - Network Link IPX Overview (PI\_LIPX)
    - Network Link NetBIOS Overview (PI\_LBIO)
    - Network Link SPX Overview (PI\_LSPX)
    - WINS Server Overview (PI\_WINS)
  - 2003 (IPF): Windows Server 2003 (IPF) is supported by the field.
  - Not Applicable: The field does not support any Windows version.

- Not Supported (in Agent for Platform (UNIX))

Indicates the platforms or platform versions supported by the field.

Two hyphens (--) indicate a field that can be used by all platforms supported by Agent for Platform (UNIX). "All" indicates a field that cannot be used by any platform supported by Agent for Platform (UNIX).

- Data Source

Source of the obtained value. If the field value is the result of a calculation based on the values of other fields, the formula used is shown in the Data Source column. For example, if the Data Source column of a field shows `READ_IO_COUNT/INTERVAL`, the value of `READ_IO_COUNT` field of this record is divided by the value of `INTERVAL` field (of the same record), and the resulting value is stored in this field.

- "--" means that the method used to obtain the field value or the source of the value is not disclosed.
- "ReturnValue" displays unmodified performance data (in Agent for Platform (Windows)).
- (T1) indicates data collected for the current interval and (T0) indicates the value collected during the previous interval (in Agent for Platform (Windows)).

## 2.3 List of Common Key Fields

Table 2.2 lists key fields that are common to all records. For details about key fields specific to a particular record, see the description of each record.

Table 2.2 Common Key Fields

View Name (Manager Name)	Description
Agent Host (DEVICEID)	Name of the host on which the Agent is running
Agent Instance (PROD_INST)	Name of the host on which the Agent is running
Agent Type (PROPID)	Product ID of the Agent
Date (DATE)	Record creation date (GMT)
Date and Time (DATETIME)	Combination of the DATE and TIME fields
Drawer Type (DRAWER_TYPE)	Drawer type. Valid values are as follows: m: Minute H: Hour D: Day w: Week M: Month Y: Year
Record Type (INPUT_RECORD_TYPE)	A 4-byte identifier indicating the record type.
Time (TIME)	The time when the record was created (GMT)

## 2.4 Field Values

This section describes the values stored in the fields.

### 2.4.1 List of Data Types

Table 2.3 lists the data types for field values and the corresponding C and C++ data types. The values shown in the **Format** column of the each field table are those shown below in the **Field** column under **Data Type**.

Table 2.3 Data Types

Data Type		Bytes	Description
Field	C or C++		
char ( <i>n</i> )	char ( )	1	Character data (0x20 to 0x7e)
double	double	8	Numeric value (1.7E±308 (15 digits))
float	float	4	Numeric value (3.4E±38 (7 digits))
long	long	4	Numeric value (-2,147,483,648 to 2,147,483,647)
short	short	2	Numeric value (-32,768 to 32,767)
string ( <i>n</i> )	char [ ]	Number in parentheses	Character string with a length of <i>n</i> bytes (characters other than 7-bit ASCII characters cannot be stored). The last character is null.
time_t	unsigned long	4	Numeric value (0 to 4,294,967,295)
timeval	Structure	8	Numeric value (first 4 bytes are seconds, next 4 bytes are microseconds)
ulong	unsigned long	4	Numeric value (0 to 4,294,967,295)
utime	Structure	8	Numeric value (first 4 bytes are seconds, next 4 bytes are microseconds)
word	unsigned short	2	Numeric value (0 to 65,535)

## 2.4.2 Delta

Displaying the difference between the values of the previously collected data and currently collected data for the performance data of a field is called **delta**. The data source of the field is the information which is managed as cumulative values.

For example, suppose a field whose data source is a counter for I/O processing, where the counter value obtained during the first collection is 3 and the counter value obtained during the second collection is 7. The output value of this field at the second collection is 7 (the counter value at the second collection) if the delta attribute is not applied to the field, or 4 (the difference between the first value and the second value) if the delta attribute is applied to the field.

Data displayed with Performance Reporter varies as follows.

### 2.4.2.1 Agent for RAID Map and Agent for Platform (Windows)

The following table lists and describes the data that is displayed with Performance Reporter for the Agent for RAID Map and Agent for Platform (Windows).

*Note:* One of the following settings is made in Performance Reporter:

- The **Indicate delta value** checkbox is selected in the New Report > Indication Settings (Realtime) window.
- The **Indicate delta value** checkbox is selected in the Show Options window for a real-time report.
- TRUE is assigned to the `indicate-delta-value` attribute of `realtime-indication-settings`, in the parameter file passed in an argument to the `jpcrdef create` command.

**Table 2.4 Data Displayed with Performance Reporter (Agent for RAID Map and Agent for Platform (Windows))**

Record Type	Delta	Data Type	Delta Display Option (see <i>Note</i> )	Record Value
PI record type	Yes	Not applicable	Not applicable	Not applicable
	No	Real-time data	Yes	The displayed value is the actual value at the time of data collection.
			No	The displayed value is the actual value at the time of data collection.
		<ul style="list-style-type: none"> <li>▪ Historical data</li> <li>▪ Data monitored by alarms</li> </ul>	Not applicable	The displayed value is the actual value at the time of data collection.
PD record type	Yes	Not applicable	Not applicable	Not applicable
	No	Real-time data	Yes	The displayed value is the actual value at the time of data collection.
			No	The displayed value is the actual value at the time of data collection.
		<ul style="list-style-type: none"> <li>▪ Historical data</li> <li>▪ Data monitored by alarms</li> </ul>	Not applicable	The displayed value is the actual value at the time of data collection.

Please review the following points about the collection of performance data:

Agent for RAID Map:

When you collect performance data, values are displayed from when the data was first collected (in a real-time report). For reports that need previous data, however, the first value is displayed as 0. The value displayed from the next time the data is collected varies depending on the report.

Agent for Platform (Windows):

Performance data for the first historical report stored in Agent for Platform is generated on the basis of current data plus the last data collected. Thus, after historical reporting commences, the time until the first performance data is generated may be up to twice the designated data collection interval.

With a real-time report, the time from when historical reporting starts until the first performance data is generated is at least five seconds, except for the following records:

- Device Detail (PD\_DEV)
- Event Log (PD\_ELOG)
- Service Process Detail (PD\_SVC)

### 2.4.2.2 Agent for Platform (UNIX)

The following table lists and describes the data displayed with Performance Reporter or the data evaluated by alarm monitoring, for the Agent for Platform (UNIX).

*Note:* In the title of Table 2.5, “the Delta Value Is Set to Be Displayed” indicates that one of the following settings is made in Performance Reporter:

- The **Indicate delta value** checkbox is selected in the New Report > Indication Settings (Realtime) window.
- The **Indicate delta value** checkbox is selected in the Show Options window for a real-time report.
- TRUE is assigned to the `indicate-delta-value` attribute of `realtime-indication-settings`, in the parameter file passed in an argument to the `jpcrdef create` command.

The values listed in Table 2.5 will be subject to evaluation when operations are monitored using alarms.

**Table 2.5 Values Displayed in Performance Reporter (For Real-Time Reports for Which the Delta Value Is Set to Be Displayed or Historical Reports)**

Record Type	Delta	Data Source	Does the Data Source Include Fields for Which (Delta = Yes)?	Displayed Value or the Value Evaluated by Alarm Monitoring
PI record type	Yes	Not available	Not applicable	Difference
		Available	No	Difference in the results calculated based on the value at the time of collection
			Yes	Results of calculation based on difference
	No	Not available	Not applicable	Value at the time of collection
		Available	No	Result of calculation based on the value at the time of collection
			Yes	Results of calculation based on difference
PD record type	Yes	Not available	Not applicable	Difference For the historical reports and alarms of the Process Detail (PD) records, cumulative value
		Available	No	Not applicable

Record Type	Delta	Data Source	Does the Data Source Include Fields for Which (Delta = Yes)?	Displayed Value or the Value Evaluated by Alarm Monitoring
PD record type			Yes	Result of calculation based on difference  For the historical reports and alarms of the Process Detail (PD) records, result of calculation based on the cumulative value
	No	Not available	Not applicable	Value at the time of collection
		Available	No	Result of calculation based on the value at the time of collection
			Yes	Result of calculation based on difference  For Process Detail (PD) records, result of calculation based on the cumulative value
PL record type	No	Not available	Not applicable	The value calculated based on the difference between data collection intervals

**Note:** In the title of Table 2.6, “the Delta Value Is Not Set to Be Displayed” indicates that one of the following settings is made in Performance Reporter:

- The **Indicate delta value** checkbox is not selected in the New Report > Indication Settings(Realtime) window.
- The **Indicate delta value** checkbox is not selected in the Show Options window for a real-time report.
- FALSE is assigned to the `indicate-delta-value` attribute of `realtime-indication-settings`, in the parameter file passed in an argument to the `jpcredef create` command.

**Table 2.6 Values Displayed in Performance Reporter (For Real-Time Reports for Which the Delta Value Is Not Set to Be Displayed)**

Record Type	Delta	Data Source	Does the Data Source Include Fields for Which (Delta = Yes)?	Displayed Value
PI record type	Yes	Not available	Not applicable	Value at the time of collection
		Available	No	Result of calculation based on the value at the time of collection
			Yes	Result of calculation based on the cumulative value
	No	Not available	Not applicable	Value at the time of collection
		Available	No	Result of calculation based on the value at the time of collection
			Yes	Result of calculation based on the cumulative value
PD record type	Yes	Not available	Not applicable	Cumulative value
		Available	No	Not applicable
			Yes	Result of calculation based on the cumulative value
	No	Not available	Not applicable	Value at the time of collection
		Available	No	Result of calculation based on the value at the time of collection
			Yes	Result of calculation based on the cumulative value
PL record type	No	Not available	Not applicable	Cumulative information from the service startup time to the current time

Please review the following points about the collection of performance data:

Agent for Platform (UNIX):

- At the time you use Performance Reporter's `jpcasrec update` command to set Collection Interval, performance data is not collected.
- Since historical data of the PI record type includes data (such as delta values) that requires differences from data obtained during the previous collection, data from two or more collections is required. This means that the time required to store historical data into the Store database (from the time the Agent service started or the time that Collection Interval is set by executing the `jpcasrec update` command) is, at a maximum, twice the time that is set in Collection Interval.

For example, if you start, at 6:32 PM, the Agent whose performance data collection interval is set to 300 seconds (5 minutes), the first data collection will start at 6:35 PM. However, the record to be stored in the Store database is not created at this time because the data required for calculating the difference does not exist. At the next data collection (that starts at 6:40 PM), historical data will be created based on the data collected at 6:35 PM and 6:40 PM, and stored in the Store database.

- Starting with the first collection, a real-time report displays data values. Note, however, that 0 is displayed as the first collected value in reports requiring previously collected data. The values displayed from the second and subsequent data collections vary depending on the report.

### 2.4.3 Value of the Interval field

The value of the Interval field varies depending on the report type or record type collected by the Agent.

#### 2.4.3.1 Agent for RAID Map

Table 2.7 Value of the Interval Field (Agent for RAID Map)

Report type	Description
Real-time report	<p>The value of the Interval is 0 for the first record. One of the following values set by Performance Reporter is applied to records collected at subsequent intervals:</p> <ul style="list-style-type: none"><li>▪ The value specified in Initial value of <b>Refresh interval</b> in the <b>New Report &gt; Indication Settings (Realtime)</b> window.</li><li>▪ The value specified in the initial-value attribute of refresh-interval in the parameter file that is specified with the <code>jpcrdef create</code> command as an argument.</li></ul> <p>The following formula is used to determine the value:</p> $\text{INTERVAL} = \text{RECORD\_TIME} - \text{RECORD\_TIME-for-the-previous-collection}$
Historical report	<p>The value of the Interval field is the same as the value specified in Collection Interval. The following formula is used to determine the value:</p> $\text{INTERVAL} = \text{RECORD\_TIME} - \text{RECORD\_TIME-for-the-previous-collection}$

### 2.4.3.2 Agent for Platform (Windows)

Table 2.8 Value of the Interval Field (Agent for Platform (Windows))

Record Type	Instance Type	Report Type	Description	
			Interval ( <b>INTERVAL</b> )	Interval2 ( <b>INTERVAL2</b> )
PI record type	Multi-instance record	Real-time report	The initial value is 5. Thereafter, the value specified in the report as the <i>refresh interval</i> is displayed (in seconds). See <b>Note</b>	
		Historical report	The value specified in the report as the <i>refresh interval</i> is displayed (in seconds). See <b>Note</b> In a summary, the last collected value is displayed.	The value specified in the report as the <i>refresh interval</i> is displayed (in seconds). See <b>Note</b> In a summary, the total for the summarized records is displayed.
	Single-instance record	Real-time report	The initial value is 5. Thereafter, the value specified in the report as the <i>refresh interval</i> is displayed (in seconds). See <b>Note</b>	Not Applicable
		Historical report	The value specified in the report as the <i>refresh interval</i> is displayed (in seconds). See <b>Note</b> In a summary, the total for the summarized records is displayed.	Not Applicable
PD record type	Multi-instance record	Real-time report	The initial value is 5. Thereafter, the value specified in the report as the <i>refresh interval</i> is displayed (in seconds). See <b>Note</b>  This is always 0 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>	Not Applicable

Record Type	Instance Type	Report Type	Description	
			Interval ( <b>INTERVAL</b> )	Interval2 ( <b>INTERVAL2</b> )
		Historical report	The value specified in the report as the <i>refresh interval</i> is displayed (in seconds). See <i>Note</i> This is always 0 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>	Not Applicable
	Single-instance record	Real-time report	Not Applicable	Not Applicable
		Historical report	Not Applicable	Not Applicable

*Note:* The *refresh interval* is calculated as follows:

$$\text{Interval field value} = \text{Record Time field value} - \text{previous Record Time field value}$$

### 2.4.3.3 Agent for Platform (UNIX)

Table 2.9 Value of the Interval Field (Agent for Platform (UNIX))

Record Type	Description
PI record type	<p><b>For real-time reports:</b></p> <p>If a delta value is set to be displayed in Performance Reporter, the value of the interval is 0 for the first record. In the subsequent interval records, a value is specified in the initial-value attribute of refresh-interval, in the parameter file that is specified as an argument with the <code>jpcrdef create</code> command.</p> <p>The following formula is used to determine the value:</p> $\text{INTERVAL} = \text{RECORD\_TIME} - \text{RECORD\_TIME-for-the-previous-collection}$ <p>If a delta value is not set to be displayed in Performance Reporter, the value of the interval for the first record is obtained by subtracting the service startup time from the current time.</p> <p>The following formula is used to determine the value:</p> $\text{INTERVAL} = \text{RECORD\_TIME} - \text{service-startup-time}$ <p><b>For historical reports:</b></p> <p>Same as the value of Collection Interval, which is obtained from the following formula:</p> $\text{INTERVAL} = \text{RECORD\_TIME} - \text{RECORD\_TIME-for-the-previous-collection}$
PD record type	Always 0
PL record type	

## 2.5 Fields Added at the Time Data Is Stored in the Store Database

The following table lists the fields that are added at the time data is stored in the Store database. These fields are supported by all monitored targets of each Agent.

Table 2.10 Fields that Are Added at the Time Data Is Stored in the Store Database

View Name (Manager Name)	Description	Format	Delta
Agent Host (DEVICEID)	Names of the host on which the Agent is running	string(256)	No
Agent Instance (PROD_INST)	Names of the host on which the Agent is running	string(256)	No
Agent Type (PROPID)	Product ID of the Agent (1-byte identifier)	char	No
Date (DATE)	Record creation date (GMT) See <i>Note 1</i> and <i>Note 2</i>	char(3)	No
Date and Time (DATETIME)	Combination of the Date (DATE) and Time (TIME) fields See <i>Note 1</i>	char(6)	No
Drawer Type (DRAWER_TYPE)	For a record of the PI record type, the data summarization type	char	No
GMT Offset (GMT_ADJUST)	Difference (in seconds) between GMT and local time	long	No
Time (TIME)	Record creation time (GMT) See <i>Note 1</i> and <i>Note 2</i>	char(3)	No

**Note 1:** When the performance data is displayed in the Performance Reporter reports, the Date field is displayed in *YYYYMMDD* format, the Date and Time field is displayed in *YYYYMMDD hh:mm:ss* format, and the Time field is displayed in *hh.mm.ss* format.

**Note 2:** Records of the PI record type summarize data from a specified period of time. The value set in this field indicates the beginning of that period. The following table lists the values set for each record type.

**Table 2.11 Values Set for Each PI Record Type**

Type	Values Set for Each Record Type
Minute	The beginning (0 second) of the minute for which the record was created.
Hour	The beginning (0 minute and 0 second) of the hour for which the record was created.
Day	The beginning (0 hour, 0 minute, and 0 second, AM) of the day for which the record was created.
Week	The beginning (0 hour, 0 minute, and 0 second, AM on Monday) of the week for which the record was created.
Month	The beginning (0 hour, 0 minute, and 0 second, AM on the 1 <sup>st</sup> ) of the month for which the record was created.
Year	The beginning (0 hour, 0 minute, and 0 second, AM on January 1 <sup>st</sup> ) of the year for which the record was created.

## 2.6 Notes on Collecting Records

Notes on collecting records are as follows:

### 2.6.1 Agent for RAID Map

#### 2.6.1.1 Record Generation Result When Data Cannot Be Obtained

The following describes record creation results in cases where the data to be stored in a field cannot be obtained: If an error occurs during performance data collection, or if a field that is not supported by the monitored system is included in the created record, the record creation results are as follows:

- Records are not created.  
Records are not created when Agent for RAID Map cannot:
  - Acquire the performance data to be stored in a field that is defined as a key field.
  - Generate a record within the time set for Collection Interval.
- Records are created containing blank fields.  
If Agent for RAID Map fails to acquire data of the character type, a record having a blank field is generated.
- Records are created containing fields with the value 0.  
If Agent for RAID Map fails to acquire data of the numeric type, a record with a field whose value is 0 is generated.

### 2.6.2 Agent for Platform (Windows)

#### 2.6.2.1 Before Collecting Performance Information

##### Configuring the Environment for Record Collection

In order to collect performance data in a network environment set up for the Agent for Platform (Windows), the network services, protocol, servers and products used to monitor performance information must be installed prior to launching the Agent Collector service. If the environment is not configured properly for the installed products, or if the services added in the installation are stopped, even if records are collected it may not be possible to acquire data or the field value may be displayed as 0.

In order to collect performance data for specific records in Agent for Platform (Windows), the prerequisites listed in the table below must be satisfied prior to launching the Agent Collector service. The table does not show standard services such as Event Log [*service-name*: Eventlog] that are required by the OS.

Table 2.12 shows the prerequisite requirements for record collection.

Table 2.12 Prerequisites for Record Collection

Category	Record Name (Record ID)	Field Name (View Name)	Required Condition
OS	All records	All fields	Remote Registry Service [ <i>service-name</i> : RemoteRegistry] must be running. <b>Note:</b> This condition applies to Windows 2000 only.
	Logical Disk Overview (PI_LOGD)	Page File Size Mbytes (PAGE_FILE_SIZE_BYTES)	Windows Management Instrumentation [ <i>service-name</i> : WinMgmt] must be running.
	System Overview(PI)	System Type (SYSTEM_TYPE)	<b>Note:</b> This condition applies only to Windows 2000 and Windows Server 2003.
Disk	Physical Disk Overview (PI_PHYD)	All fields	diskperf -y command must be executed at the Command Prompt, and the OS must be restarted.
	Logical Disk Overview(PI_LOGD)		<b>Note:</b> This condition applies to Windows 2000 only.
Network service	Browser Overview (PI_BRSR)	All fields	Computer Browser [ <i>service-name</i> : Browser] must be running.
	WINS Server Overview(PI_WINS)	All fields	Windows Internet Naming Service (WINS) must be installed, and the services added after the installation must be running.
	Server Work Queues Overview(PI_SVRQ)	All fields	Server [ <i>service-name</i> : LanmanServer] must be running.
	System Overview(PI)	Blocking Reqs Rejected(BLOCKING_REQUESTS_REJECTED)	
Bytes Rcvd/sec(BYTES_RECEIVED_PER_SEC)			
Bytes Total/sec(BYTES_TOTAL_PER_SEC)			

Category	Record Name (Record ID)	Field Name (View Name)	Required Condition
Network service	System Overview(PI)	Bytes Xmitd/sec(BYTES_TRANSMITTED_PER_SEC)	Server [ <i>service-name</i> : LanmanServer] must be running.
		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(FILE_OPEN)	
		Files Opened Total(FILE_OPENED_TOTAL)	
		Logon Total(LOGON_TOTAL)	
		Logon/sec(LOGON_PER_SEC)	
		Pool Nonpaged Failures(POL_NONPAGED_FAILURES)	
		Pool Nonpaged Peak(POL_NONPAGED_PEAK)	
		Pool Paged Failures(POL_PAGED_FAILURES)	
		Pool Paged Peak(POL_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)	

Category	Record Name (Record ID)	Field Name (View Name)	Required Condition
Network service	System Overview(PI)	Sessions Forced Off(SESSIONS_FORCED_OFF)	Server [ <i>service-name</i> : LanmanServer] must be running.
		Sessions Logged Off(SESSIONS_LOGGED_OFF)	
		Sessions Timed Out(SESSIONS_TIMED_OUT)	
		Work Item Shortages(WORK_ITEM_SHORTAGES)	
Protocol	AppleTalk Overview(PI_APLE)	All fields	The AppleTalk protocol must be installed.
	Network Link IPX Overview(PI_LIPX)	All fields	For Windows 2000 or Windows Server 2003, a transport protocol compatible with NWLink IPX/SPX/NetBIOS must be installed.
	Network Link SPX Overview(PI_LSPX)		
	Network Link NetBIOS Overview(PI_LBIO)		
Application server	Active Server Pages(PI_ASP2)	All fields	<p>IIS 5.0 or IIS 6.0 must be installed, and the services added after the installation must be running.</p> <p><b>Note:</b> the following records require optional services to be installed.</p> <ul style="list-style-type: none"> <li>▪ Active Server Pages (PI_ASP2): Active Server Pages (part of the Web service)</li> <li>▪ FTP Server Service Overview (PI_FTPM): FTP service</li> <li>▪ NNTP Commands (PI_NWSC): NNTP service</li> <li>▪ NNTP Server (PI_NWSS): NNTP service</li> <li>▪ SMTP Server Service Overview (PI_SMT2): SMTP service</li> <li>▪ Web Service Overview (PI_WEB): Web service</li> </ul>
	FTP Server Service Overview(PI_FTPM)		

Category	Record Name (Record ID)	Field Name (View Name)	Required Condition
Application server	Internet Info Server Global(PI_IIS)	All fields	
	NNTP Commands(PI_NWSC)		
	NNTP Server(PI_NWSS)		
	SMTP Server Service Overview(PI_SMT2)		
	Web Service Overview(PI_WEB)		
	Web Proxy Server Cache Overview(PI_WPSC)	All fields	Proxy Server 2.0 must be installed, and the services added after the installation must be running. <b>Note:</b> the WinSock Proxy Server Overview (PI_WSPTS) record requires the optional WinSock Proxy Service to be installed.
	Web Proxy Server Service(PI_WPSS)		
WinSock Proxy Server Overview(PI_WSPTS)			
Collaboration server	Exchange Conn for Lotus cc:Mail(PI_ECCM)	All fields	Exchange Server 5.5 must be installed, and the services added after the installation must be running.
	Exchange Dir Service Overview(PI_EDS)		
	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_EMIS)		
	Exchange Web Component Overview(PI_EWEB)		

Category	Record Name (Record ID)	Field Name (View Name)	Required Condition
Collaboration server	Exchange Info Store Perf Data(PI_EIPD)	All fields	Exchange Server 5.5 or Exchange Server 2000 must be installed, and the services added after the installation must be running.
	Exchange MTA Performance(PI_EMFTA)		
	Exchange MTA Connections(PI_EMTC)		

**Notes:**

- In the Windows 2000 environment, if the Remote Registry service (service name: RemoteRegistry) has not started, the Agent Collector service will generate the following message, then stop:  
KAVF11407-E Performance data cannot be collected because the Remote Registry service (service-name: RemoteRegistry) is not running. (rc = *return-code*)
- Different versions of IIS works with different operating systems (OSs):
  - IIS version 5.0 works with Windows 2000
  - IIS version 6.0 works with Windows Server 2003
- Different versions of Microsoft® Exchange Server work with different operating systems (OSs):
  - Microsoft Exchange Server version 5.5 works with Windows 2000
  - Microsoft Exchange Server version 2000 works with Windows 2000

**Required Commands**

The table below shows the command required to collect the indicated records in Agent for Platform (Windows). The command must be executed from the Command Prompt and the OS must be restarted.

**Table 2.13 The Command Required to Collect the Indicated Records**

Record ID	OS	Execution Command
PI_LOGD	Windows 2000	\$ diskperf -y
PI_PHYD		

## 2.6.2.2 Notes about Collecting Performance Information for Windows 2000 Service Pack 4 or Windows Server 2003

If there are more than 26 drives in a Windows 2000 system Service Pack 4, or more than 39 drives in a Windows Server 2003 system, performance data cannot be collected in the Logical Disk Overview (PI\_LOGD) and Physical Disk Overview (PI\_PHYD) records.

When the above limitation applies, performance data cannot be collected for the `LogicalDisk` and `PhysicalDisk` objects that are displayed in **System Monitor** and **Performance Log and Warning** in the Performance console.

### How to Check the Number of Drives in the System

The number of drives in the system is the sum of the number of disks and the number of volumes. The following method is used to obtain the numbers of disks and volumes:

- The numbers of disks and volumes are displayed by choosing **Computer Management** and then **Disk Management**
- Use `Dmdiag.exe`, which is provided in the Windows 2000 resource kit CD-ROM

For details about `Dmdiag.exe`, see the Help for the resource kit.

The following shows the formula for determining the number of drives in the system:

Number of drives in the system = actual number of HDDs (in RAID system, the number of logical units) + number of volumes (partitions)

#### *Example 1:*

When 1 HDD is connected and it has 1 volume

$$1 + 1 = 2$$

#### *Example 2:*

When 1 HDD is connected and it has 3 volumes

$$1 + 3 = 4$$

#### *Example 3:*

When 3 HDDs (HDD1, HDD2, and HDD3) are connected and each has 3 volumes:

For each HDD, calculate the number of drives in the system.

$$\text{HDD1: } 1 + 3 = 4$$

$$\text{HDD2: } 1 + 3 = 4$$

$$\text{HDD3: } 1 + 3 = 4$$

Total the results calculated for each HDD

$$4 + 4 + 4 = 12$$

If a path management software program is being used to manage a multipath environment, use that program to check the number of physical disks.

## How to Avoid This Problem:

This problem is caused by a program such as Windows `diskperf.dll`. For details about how to avoid this problem, check the following URL and then contact Microsoft Corporation.

For Windows 2000 Service Pack 4:

URL: <http://support.microsoft.com/kb/828603/>

For Windows Server 2003:

URL: <http://support.microsoft.com/kb/837126/>

### 2.6.2.3 Managing Record Instances that are not Uniquely Identified

Agent for Platform (Windows) references the most recent OS information at specific intervals when it collects performance data. If Agent for Platform cannot uniquely identify the record instance by using the information obtained from the operating system, it appends `#n` ( $n: 1, 2, 3, \dots$ ) at the end of the corresponding record field. The values in the performance data collected for such a record instance are correct, but the device corresponding to the instance (e.g. the NIC corresponding to Network Interface Overview (PI\_NETI)) cannot be identified. In addition, when the system environment is changed, the consistency of the record instance cannot be guaranteed. Therefore, real-time data cannot be updated correctly and the historical data cannot be summarized. Table 2.14 lists the record fields at the end of which such a number may be appended.

Table 2.14 Record Fields that May Not Be Uniquely Identified

Record Name (Record ID)	Field Name
AppleTalk Overview (PI_APLE)	Instance (INSTANCE)
Event Log (PD_ELOG)	Source Name (SOURCE_NAME)
FTP Server Service Overview (PI_FTPM)	Instance (INSTANCE)
Logical Disk Overview (PI_LOGD)	ID (INSTANCE)
NBT Overview (PI_NBT)	Instance (INSTANCE)
Network Interface Overview (PI_NETI)	
Network Link IPX Overview (PI_LIPX)	
Network Link NetBIOS Overview (PI_LBIO)	
Network Link SPX Overview (PI_LSPX)	
Page File Detail (PD_PAGEF)	
Physical Disk Overview (PI_PHYD)	ID (INSTANCE)
Process End Detail (PD_PEND)	Program (PROCESS_NAME)
Web Service Overview (PI_WEB)	Instance (INSTANCE)

## 2.6.2.4 Checking Data When Records Are Not Collected

In order to collect performance data for the following records in Agent for Platform (Windows), the Performance console must be in a state where objects can be monitored. (See *Note*)

The table below shows the object for each record, as well as the source (service) name output to the event log and the performance extended DLL.

*Note:* The object name for each record can be checked in the Windows Performance tool. Where an object for a record does not exist, use the procedure outlined in the Microsoft Knowledge Base to set up monitoring of the object.

**Table 2.15 Object, Source (Service) Name Output to the Event Log and the Performance Extended DLL for Each Record**

Category	Record Name (Record ID)	Object Name	Source [Service] Name Output to Event Log	Performance Extended DLL
Disk	Logical Disk Overview (PI_LOGD)	LogicalDisk	PerfDisk	PerfDisk.dll
	Physical Disk Overview (PI_PHYD)	PhysicalDisk		
Protocol	AppleTalk Overview (PI_APPLE)	Apple Talk	AppleTalk	atkctrs.dll
	Network Link IPX Overview (PI_LIPX)	NWLink IPX	NwlnkIpx	perfctrs.dll
	Network Link SPX Overview (PI_LSPX)	NWLink SPX	NwlnkSpx	
	Network Link NetBIOS Overview (PI_LBIO)	NWLink NetBIOS	NwlnkNb	
	ICMP Overview (PI_ICMP)	ICMP	Tcpip	
	IP Overview (PI_IP)	IP or IPv4		
	TCP Overview (PI_TCP)	TCP or TCPv4		
	UDP Overview (PI_UDP)	UDP or UDPv4		
Related to Network	Network Interface Overview (PI_NETI)	Network Interface		
	NBT Overview (PI_NBT)	NBT Connection		

Category	Record Name (Record ID)	Object Name	Source [Service] Name Output to Event Log	Performance Extended DLL
	Network Segment Overview (PI_NSEG)	Network Segment	bh	Bhmon.dll
	WINS Server Overview (PI_WINS)	WINS Server	Wins	winsctrs.dll
	Browser Overview (PI_BRSR)	Browser	PerfNet	perfnct.dll
	Server Work Queues Overview (PI_SVRQ)	Server Work Queues		
	System Overview (PI)	Redirector		
Server				
OS (processor, memory, etc)		Cache	PerfOS	PerfOS.dll
		Memory		
		Objects		
		System		
		Processor		
	Processor Overview (PI_PCSR)			
	Page File Detail (PD_PAGEF)	Paging File		
Related to process	Process Detail (PD)	Process	PerfProc	PerfProc.dll
	Process Detail Interval (PD_PDI)			
	Process End Detail (PD_PEND)			
Application server	Active Server Pages (PI_ASP2)	Active Server	ASP	aspperf.dll
	Active Server Pages Overview (PI_ASP)			
	FTP Server Service Overview (PI_FTPM)	FTP Service	MSFTPSVC	Ftpctrs2.dll
	Internet Info Server Global (PI_IIS)	Internet Information Services Global	InetInfo	InetInfo.dll

Category	Record Name (Record ID)	Object Name	Source [Service] Name Output to Event Log	Performance Extended DLL
	NNTP Commands (PI_NWSC)	NNTP Commands	NntpSvc	nntpctrs.dll
	NNTP Server (PI_NWSS)	NNTP Server		
	SMTP Server Overview (PI_SMTP)	SMTP Server	SMTPSVC	smtpctrs.dll
	SMTP Server Service Overview (PI_SMT2)			
	Web Service Overview (PI_WEB)	Web Service	W3SVC	w3ctrs.dll
	Content Index Detail (PD_CIND)	Content Index	ContentIndex	QPerf.dll
	Content Index Filter Detail (PD_CINF)	Content Index Filter	ContentFilter	
	HTTP Content Index Overview (PI_HTCI)	HTTP Content Index	ISAPISerch	
	WinSock Proxy Server Overview (PI_WSFS)	WinSock Proxy Server	W3Proxy	Mspmon.dll
	Web Proxy Server Cache Overview (PI_WPSC)	Web Proxy Server Cache	W3PCache	
	Web Proxy Server Service (PI_WPSS)	Web Proxy Server Service	WSPSrv	
Collaboration server	Exchange Conn for Lotus cc:Mail (PI_ECCM)	MSEExchangeCCMC	MSEExchangeCCMC	ccmperf.dll
	Exchange Dir Service Overview (PI_EDS)	MSEExchangeDS	MSEExchangeDS	perfdsa.dll
	Exchange Internet Protocols (PI_EINP)	MSEExchange Internet Protocols	MSEExchangeIS	mdbperf.dll
	Exchange Info Store Perf Data (PI_EIPD)	MSEExchangeIS		
	Exchange Info Store Private (PI_EIPR)	MSEExchangeIS Private		

Category	Record Name (Record ID)	Object Name	Source [Service] Name Output to Event Log	Performance Extended DLL
	Exchange Info Store Public (PI_EIPU)	MSEExchangeIS Public		
	Exchange Internet Mail Service (PI_EIMS)	MSEExchangeIMC	MSEExchangeIMC	imsperf.dll
	Exchange MTA Performance (PI_EMPTA)	MSEExchangeMTA	MSEExchangeMTA	mtaperf.dll
	Exchange MTA Connections (PI_EMTC)	MSEExchangeMTA Connections		
	Exchange MSMail Conn PC MTA Srv (PI_EMPTS)	MSEExchangePCMTA	MSEExchangePCMTA	xtnperf.dll
	Exchange MSMail Conn Interchange (PI_EMCI)	MSEExchangeMSMI	MSEExchangeMSMI	mtperf.dll
	Exchange Web Component Overview (PI_EWEB)	MSEExchangeWEB	MSEExchangeWEB	ewspanperf.dll
Others	Event Log (PD_ELOG)	Not applicable	Not applicable	
	Device Detail (PD_DEV)			
	Service Process Detail (PD_SVC)			

### 2.6.2.5 Application Event Logs that Prevent Collection of Records

If the application event log contains Perflib (Perflib is a source [service] name common to all objects) or the source (service) name of each object, then Agent for Platform (Windows) may not operate properly, or it may not be possible to collect the records corresponding to the service. If an application event log such as those listed in the table below is recorded, it must be removed from the environment either by reinstalling the source (service), or by following the procedure outlined in the Microsoft Knowledge Base for eliminating the root cause, or by seeking advice from the developer of the source (service). The table below provides examples of application event logs that can prevent Agent for Platform (Windows) from operating normally and/or prevent the collection of records for the required source (service).

For information about the records corresponding to the source (service), see section 2.6.2.4.

Table 2.16 Examples of Application Event Logs that Prevent Collection of Records

Event ID	Source	Event Log Contents
1008	Perflib (See <i>Note</i> )	The Open procedure for <i>service-name</i> service (DLL <i>DLL-name</i> ) failed. Performance data is not available for this service. The returned status code is data <code>DWORD 0</code> .
1009		An exception occurred during the Open procedure for the <i>service-name</i> service (DLL <i>DLL-name</i> ). Performance data is not available for this service. The returned exception code is data <code>DWORD 0</code> .
1010		Either an exception occurred during the Collect procedure for <i>service-name</i> service (DLL <i>DLL-name</i> ), or an invalid status was returned. The performance data returned by counter DLL was not returned to the performance data block. The returned exception or status code is data <code>DWORD 0</code> .
1011		The library file <i>DLL-name</i> specified for <i>service-name</i> service could not be opened. Performance data is not available for this service. The status code is data <code>DWORD 0</code> .
2001		Either the <i>service-name</i> service does not have the Performance subkey or the key could not be opened. The performance counter is not collected for this service. The Win32 error code is returned as data.
2002		The Open procedure for <i>service-name</i> service of DLL <i>DLL-name</i> took longer than the established wait time. There may be a problem with this extendable counter or the service collecting the data, or the system may have been busy when the call was attempted.
2000	PerfDisk	Logical volume information cannot be read from the system. The returned status code is the data <code>DWORD 0</code> .

**Note:** If Perflib outputs application event logs other than those listed above, refer to the Microsoft Knowledge Base.

### 2.6.2.6 Notes for Each Record

- The performance information of the following records cannot be collected in the Windows Server 2003 and Internet Protocol version 6 (IPv6) environments.
  - ICMP Overview (PI\_ICMP)
  - IP Overview (PI\_IP)
  - TCP Overview (PI\_TCP)
  - UDP Overview (PI\_UDP)
- Among multi-instance records, the values for the records whose instance names are indicated as *\_Total* are the sums or averages of all instances. The values may not be accurate if the instance information is changed during the collection interval.
- In the event of a change in the system resource during record collection, the Agent Collector service outputs the following message to the common message log and skips record collection twice:  
  
KAVF11406-W The system resources have been modified. (*record-ID*)
- Agent for Platform (Windows) does not accept values greater than the data type defined in the data model. If such a value is collected, the correct value not be displayed.

### 2.6.2.7 Notes on Using the Program Name of a Process

The program name of a process is obtained from the Windows performance registry. The case of the displayed name may not match the case of the name displayed by the Windows Task Manager or Performance Monitor. When you use the program name of a process to define a field display condition for a report or alarm definitions, you must specify the name in the correct case. Use the following procedure to check that the program name of a process is correct, with respect to the upper-case and lower-case characters in particular. After completing the procedure, you can then use the correct program name for settings such as the field display conditions for a report or monitoring processes in alarm definitions.

To check that upper-case and lower-case usage in program names is correct:

1. Start the Performance Reporter.
2. Start the Report Wizard.  
For details about how to start the Report Wizard, see the chapter that describes the definition and operations of reports in the *HiCommand Tuning Manager User's Guide*.
3. Define fields to be displayed in the report. Set the records and fields to be monitored in [New Report > Field] window:
  - Records: Process Detail (PD)
  - Field: Program (INSTANCE)
4. Finish the report creation according to the Report Wizard.
5. Display the created report.  
The program names of all the processes in the system will be displayed.

### 2.6.2.8 Record Generation Result When Data Cannot Be Obtained

The record generation result varies when the data to be stored in the field cannot be obtained. If an error occurred during the performance data collection or if the generated record contains a field that the monitored object does not support, the record generation result will be as follows:

- Records are not created.

Records are not created when Agent for Platform (Windows) cannot:

- Acquire the performance data to be stored in a field defined as a key field.
- Generate a record within the time set for Collection Interval.

- Records are created containing fields with the value `Unknown` or `UNKNOWN`.

If the data type for the field is a string, and the value obtained from the OS is `unknown` or the value cannot be obtained, a record that contains a field whose value is `Unknown` or `UNKNOWN` is generated.

## 2.6.3 Agent for Platform (UNIX)

### 2.6.3.1 Before Collecting Performance Information

#### Records that Require Patches

Agent for Platform (UNIX), you must apply patches depending on the records you want to collect. For details about the patches required for collecting specific records, see the appendix of the *HiCommand Tuning Manager Installation Guide*.

#### Records that Require Information about Remote File Systems

You must operate Agent for Platform (UNIX) such that it can reference information about remote file systems that are mounted (a status in which the `df` command executes normally). If no response is returned from a remote file system that is mounted, the Agent Collector service hangs up when it attempts to collect File System Detail - Local (PD\_FSL), File System Detail - Remote (PD\_FSR), or User File System Storage (PD\_UFSS) records and cannot continue collecting performance data.

If this happens, use the following procedure to restart the Agent Collector service:

If the `jpc_ufss` process is running:

1. Execute the `kill` command as follows to stop the `jpc_ufss` process.  
`kill -TERM (or KILL) "process-ID-of-jpc_ufss-process"`
2. Execute the `kill` command as follows to stop the `jpcagtu` process.  
`kill -TERM (or KILL) "process-ID-of-jpcagtu-process"`
3. Restart the NFS daemon to enable remote file systems to be mounted normally again.
4. Execute the `jpcstart` command as follows to start the Agent Collector service.  
`/opt/jplpc/tools/jpcstart agtu`

If the `jpc_ufss` process is not running:

1. Execute the `kill` command as follows to stop the `jpcagtu` process.  
`kill -TERM (or KILL) "process-ID-of-jpcagtu-process"`
2. Restart the NFS daemon to enable remote file systems to be mounted normally again.
3. Execute the `jpcstart` command as follows to start the Agent Collector service.  
`/opt/jplpc/tools/jpcstart agtu`

### 2.6.3.2 Notes about Performance Information When Changing System Resources

Please note the following points when changing system resources by using the DLPAR function of AIX 5L V5.2 (or later), vPars function of HP-UX 11i V1, or DR function of Solaris 8 (or later):

- When changing system resources, continuity between the data before the change and the data after the change is lost, regardless of whether a service of Agent for Platform (UNIX) is active. Therefore, the performance data before the change and the data after the change must be treated differently.

If necessary, you need to take action before changing system resources. For example, you can back up the Store database, clear it, and then start collecting new performance data. For details about how to back up the Store database, see the chapter that describes backup and disk management in the *HiCommand Tuning Manager Agent Administration Guide*.

- When changing system resources during startup of a service of Agent for Platform (UNIX), the performance data listed in Table 2.17 cannot be collected correctly. Stop all the services of Agent for Platform (UNIX) before changing system resources, then start the services after changing the system resources. For details about how to stop and start services, see the chapter that describes operations of Tuning Manager programs in the *HiCommand Tuning Manager Agent Administration Guide*.

Table 2.17 lists system resources that are affected by changing system resources during startup of a service of Agent for Platform (UNIX). To correctly display reports after the change, do the following:

- Redisplay the report (for a real-time report).
- Specify a time period that does not include a date and time when a system resource was changed (for an historical report).

**Table 2.17 System Resources Affected by Changing System Resources**

Target Record	Function and OS	System Resource Type
CPU - Per Processor Detail (PI_CPUP) See <b>Note 1</b>	<ul style="list-style-type: none"> <li>▪ The DLPAR function of AIX 5L V5.2 or later</li> <li>▪ The vPars function of HP-UX 11i V1</li> <li>▪ The DR function of Solaris 8 or later</li> </ul>	CPU
Device Detail (PI_DEVD) See <b>Note 1</b>	The DR function of Solaris 8 or later	Device
Device Summary (PI_DEVS) See <b>Note 1</b>		
Network Interface Detail (PI_NIND) See <b>Note 1</b>		LAN board
Network Interface Summary (PI_NINS) See <b>Note 1</b>		
System Summary Overview (PI) See <b>Note 2</b>	The DLPAR function of AIX 5L V5.2 or later	CPU and Memory
	The vPars function of HP-UX 11i V1	CPU
	The DR function of Solaris 8 or later	CPU and Memory

**Note 1:** Changing system resources affects all the fields except the following:

- Interval (INTERVAL)
- Record Time (RECORD\_TIME)
- Record Type (INPUT\_RECORD\_TYPE)
- Fields that were added when data was stored in the Store database

**Note 2:** Following are the fields affected by changing CPU resources:

- Active CPUs (NUMBER\_OF\_ACTIVE\_CPUS)
- Context Switches (CONTEXT\_SWITCHES)
- Context Switches/sec (CONTEXT\_SWITCHES\_PER\_SECOND)
- CPU % (KERNELMODE\_USERMODE\_PERCENT)
- Idle % (IDLE\_TIME\_PERCENT)
- Interrupts (INTERRUPTS)
- Interrupts/sec (INTERRUPTS\_PER\_SECOND)
- Kernel CPU % (KERNELMODE\_PERCENT)

- System Calls (SYSTEM\_CALLS)
- System Calls/sec (SYSTEM\_CALLS\_PER\_SECOND)
- Total Kernel-Mode Time (TOTAL\_KERNELMODE\_TIME)
- Total Idle Time (TOTAL\_IDLE\_TIME)
- Total User-Mode Time (TOTAL\_USERMODE\_TIME)
- Total Wait Time (TOTAL\_WAIT\_TIME)
- Traps (TRAPS)
- Traps/sec (TRAPS\_PER\_SECOND)
- User CPU % (USERMODE\_PERCENT)
- Wait % (WAIT\_TIME\_PERCENT)

Following are the fields affected by changing memory resources:

- Alloc Mem % (ALLOCATED\_MEMORY\_PERCENT)
- Alloc Mem Mbytes (ALLOCATED\_MEMORY\_MBYTES)
- Free Mem % (FREE\_MEMORY\_PERCENT)
- Free Mem Mbytes (FREE\_MEMORY\_MBYTES)
- Total Physical Mem Mbytes (TOTAL\_MEMORY\_MBYTES)

### 2.6.3.3 Performance Information about Logically Partitioned Resources

When micro-partitioning is used in AIX 5L V5.3, records are created for each logically partitioned processor. These logical resources do not affect performance information of each other, even when they are the same physical resource. For a single-instance record of the PI record type, the total of all resources, including logical resources, is displayed. Table 2.18 lists the records and fields that are affected by micro-partitioning.

**Table 2.18 Records and Fields Affected by Micro-partitioning**

Record Name	Field Name
CPU - Per Processor Detail (PI_CPUP)	All fields
Process Detail (PD)	CPU % (CPU_PERCENT_USED)
Process Detail Interval (PD_PDI)	
Program Summary (PD_PGM)	
System Summary Overview (PI)	Active CPUs (NUMBER_OF_ACTIVE_CPUS)
	CPU % (KERNELMODE_USERMODE_PERCENT)
	Idle % (IDLE_TIME_PERCENT)
	Kernel CPU % (KERNELMODE_PERCENT)
	Total Idle Time (TOTAL_IDLE_TIME)
	Total Kernel-Mode Time (TOTAL_KERNELMODE_TIME)
	Total User-Mode Time (TOTAL_USERMODE_TIME)
	User CPU % (USERMODE_PERCENT)
	Wait % (WAIT_TIME_PERCENT)
Terminal Summary (PD_TERM)	CPU % (CPU_PERCENT_USED)
User Summary (PD_USER)	
Workgroup Summary (PI_WGRP)	

#### **2.6.3.4 Note on Collecting the Performance Data**

Performance data about a terminated process cannot be collected.

#### **2.6.3.5 Record Generation Result When Data Cannot Be Obtained**

The following describes record creation results in cases where the data to be stored in a field cannot be obtained.

Records are not created when Agent for Platform (UNIX) cannot:

- Acquire the performance data to be stored in a field defined as a key field.
- Generate a record within the time set for Collection Interval.

## 2.7 Agent for RAID Map Records

Table 2.19 lists the records that can be collected by Agent for RAID Map and the information that is stored in each record.

Table 2.19 Agent for RAID Map Records

Record Name	Record ID	Information Stored in the Record
File System Configuration	ED_FSC	Performance data about the mapping configuration for file systems and logical devices
IP Address Configuration	ED_IAC	Performance data about the IP address configuration
Storage Map Summary	EI	This record cannot be used because it is reserved.
System Configuration Detail	ED	Performance data about the system configuration

## 2.7.1 File System Configuration (PD\_FSC)

### Function

The File System Configuration (PD\_FSC) record stores performance data about the mapping configuration for file systems and logical devices. This is a multi-instance record.

### Notes:

- Agent for RAID Map collects server-side configuration information on a disk device basis. Agent for RAID Map cannot collect the information for each slice in a logical device.
- In Windows, Agent for RAID Map monitors volumes that have been assigned drive letters. It does not support monitoring of volumes that have not been assigned drive letters.
- In Solaris, even if VxVM, SDS, or SVM volume groups are divided for each slice in a logical disk, Agent for RAID Map monitors only one volume group. Use Agent for RAID Map to manage disk devices in the same volume group.
- In a Sun Cluster environment, Agent for RAID Map does not support global devices mounted using a DID name. Therefore, the names of the file systems mounted on a global device (DID name) cannot be obtained.

Table 2.20 File System Configuration (PD\_FSC) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	3600	No
Collection Offset	0	
Log	Yes	
LOGIF	(Blank)	

### Key Fields

- Device Name (DEVICE\_NAME)
- File System Name (FILE\_SYSTEM\_NAME)
- Port ID (PORT\_ID)
- LDEV Number (LDEV\_NUMBER)
- Serial Number (SERIAL\_NUMBER)
- Unit ID (UNIT\_ID)

### Lifetime

From when the user builds the storage environment to when the user changes the configuration.

## Record Size

- Fixed part: 677 bytes
- Variable part: 1,794 bytes

Table 2.21 File System Configuration (PD\_FSC) Fields

File System Configuration (PD_FSC)						
View Name (Manager Name)	Description	Format	Delta	Supported OS	Supported Storage	Data Source
Device Name (DEVICE_NAME)	In Windows: Device special file name or disk number  In UNIX: Instance name	string(128)	No	Solaris, HP-UX, AIX, Linux, Windows	All	--
Disk Group Name (DISK_GROUP_NAME)	Disk group name (stores the value in effect when the user uses VERITAS Volume Manager or an operating system function to configure disk groups)	string(64)	No	Solaris, HP-UX, AIX, Linux	All	--
File System Name (FILE_SYSTEM_NAME)	File system mount point	string(1024)	No	Solaris, HP-UX, AIX, Linux, Windows	All	--
Interval (INTERVAL)	Interval (in seconds) at which information is collected	ulong	No	Solaris, HP-UX, AIX, Linux, Windows	All	--
LDEV Number (LDEV_NUMBER)	Logical device number	string(16)	No	Solaris, HP-UX, AIX, Linux, Windows	Thunder 9200, Thunder 9500V, TagmaStore AMS, Lightning 9900, Lightning 9900V, TagmaStore USP	--
LU Number (LU_NUMBER)	Logical unit number (LUN) of host	word	No	Solaris, HP-UX, AIX, Linux, Windows	All	--

File System Configuration (PD_FSC)						
View Name (Manager Name)	Description	Format	Delta	Supported OS	Supported Storage	Data Source
Node WWN (NODE_WWN)	World wide name (WWN) of host	string (32)	No	Solaris, HP-UX, AIX, Linux, Windows	Thunder 9200, Thunder 9500V, TagmaStorage AMS (See <i>Note 1</i> ), Lightning 9900, Lightning 9900V, TagmaStorage USP	--
P/S Volume (P_PAR_S_VOLUME)	Volume type (primary or secondary) (indicates whether a volume paired in setup for hot standby is the executing or standby volume)	string (64)	No	Solaris, HP-UX, AIX, Linux, Windows	Lightning 9900, Lightning 9900V, TagmaStorage USP	--
Port ID (PORT_ID)	Port number of disk array unit	string (8)	No	Solaris, HP-UX, AIX, Linux, Windows	Thunder 9200, Thunder 9500V, TagmaStorage AMS, Lightning 9900, Lightning 9900V, TagmaStorage USP	--
Port Name (PORT_NAME)	Port name of disk array unit	string (64)	No	Solaris, HP-UX, AIX, Linux, Windows	Thunder 9200, Thunder 9500V, TagmaStorage AMS, Lightning 9900, Lightning 9900V, TagmaStorage USP	--

File System Configuration (PD_FSC)						
View Name (Manager Name)	Description	Format	Delta	Supported OS	Supported Storage	Data Source
Port WWN (PORT_WWN)	World wide name (WWN) of host port	string(32)	No	Solaris, HP-UX, AIX, Linux, Windows	Thunder 9200, Thunder 9500V, TagmaStore AMS (See <i>Note 1</i> ), Lightning 9900, Lightning 9900V, TagmaStore USP	--
Product ID (PRODUCT_ID)	This field cannot be used (it is reserved).					
Product Name (PRODUCT_NAME)	Product name of disk array unit	string(64)	No	Solaris, HP-UX, AIX, Linux, Windows	Thunder 9200, Thunder 9500V (See <i>Note 2</i> ), TagmaStore AMS, Lightning 9900, Lightning 9900V, TagmaStore USP	--
RAID Group Number (RAID_GROUP_NUMBER)	Array group number of the logical device (See <i>Note 3</i> )	string(64)	No	Solaris, HP-UX, AIX, Linux, Windows	Thunder 9200, Thunder 9500V, TagmaStore AMS, Lightning 9900, Lightning 9900V, TagmaStore USP	--
RAID ID (RAID_ID)	This field cannot be used (it is reserved).					

File System Configuration (PD_FSC)						
View Name (Manager Name)	Description	Format	Delta	Supported OS	Supported Storage	Data Source
RAID Level (RAID_LEVEL)	RAID level of the logical device  (See <i>Note 4</i> )	unsigned char	No	Solaris, HP-UX, AIX, Linux, Windows	Thunder 9200, Thunder 9500V, TagmaStore AMS, Lightning 9900, Lightning 9900V, TagmaStore USP	--
Record Time (RECORD_TIME)	Record creation time (GMT)	time_t	No	Solaris, HP-UX, AIX, Linux, Windows	All	--
Record Type (INPUT_RECORD_TYPE)	Record name (always FSC)	string(8)	No	Solaris, HP-UX, AIX, Linux, Windows	All	--
Serial Number (SERIAL_NUMBER)	Serial number of disk array unit	string(32)	No	Solaris, HP-UX, AIX, Linux, Windows	Thunder 9200, Thunder 9500V, TagmaStore AMS, Lightning 9900, Lightning 9900V, TagmaStore USP	--
Target ID (TARGET_ID)	ID of target host	word	No	Solaris, HP-UX, Linux, Windows	All	--
Unit ID (UNIT_ID)	This field cannot be used (it is reserved).					
Vendor ID (VENDOR_ID)	Storage device's Vendor ID	string(64)	No	Solaris, HP-UX, AIX, Linux, Windows	All	--

**Note 1:** This field is not collected in the iSCSI connection environment.

**Note 2:** If the disk array unit is the Thunder 9585V, the value of in the Product Name field will be Thunder 9580V.

**Note 3:** If the logical device is externally connected, the value of the RAID Group Number field will be the group number that was specified when the logical device was defined.

**Note 4:** If the logical device is externally connected, the value of the RAID Level field will always be 16.

## 2.7.2 IP Address Configuration (PD\_IAC)

### Function

The IP Address Configuration (PD\_IAC) record stores performance data about the IP address configuration. This is a multi-instance record.

Table 2.22 IP Address Configuration (PD\_IAC) Default and Changeable Values

Item	Default	Changeable?
Collection Interval	3600	No
Collection Offset	0	
Log	Yes	
LOGIF	(Blank)	

### Key Fields

IP Address (IP\_ADDRESS)

### Lifetime

From when the user configures IP addresses to when the user changes the configuration.

### Record Size

- Fixed part: 677 bytes
- Variable part: 44 bytes

Table 2.23 IP Address Configuration (PD\_IAC) Fields

IP Address Configuration (PD_IAC)						
View Name (Manager Name)	Description	Format	Delta	Supported OS	Supported Storage	Data Source
Interval (INTERVAL)	Interval (in seconds) at which information is collected	ulong	No	Solaris, HP-UX, AIX, Linux, Windows	All	--
IP Address (IP_ADDRESS)	IP address	string (20)	No	Solaris, HP-UX, AIX, Linux, Windows	All	--
Record Time (RECORD_TIME)	Record creation time (GMT)	time_t	No	Solaris, HP-UX, AIX, Linux, Windows	All	--
Record Type (INPUT_RECORD_TYPE)	Record name (always IAC)	string (8)	No	Solaris, HP-UX, AIX, Linux, Windows	All	--
Sub Net Mask (SUB_NET_MASK)	Subnet mask	string (20)	No	Solaris, HP-UX, AIX, Linux, Windows	All	--

## 2.7.3 System Configuration Detail (PD)

### Function

The System Configuration Detail (PD) record stores performance data about the system configuration.

Table 2.24 System Configuration Detail (PD) Default and Changeable Values

Item	Default	Changeable?
Collection Interval	3600	No
Collection Offset	0	
Log	Yes	
LOGIF	(Blank)	

### Key Fields

None

### Lifetime

From when the user installs the Agent to when the user deletes the Agent.

### Record Size

- Fixed part: 829 bytes
- Variable part: 0 bytes

Table 2.25 System Configuration Detail (PD) Fields

System Configuration Detail (PD)						
View Name (Manager Name)	Description	Format	Delta	Supported OS	Supported Storage	Data Source
Interval (INTERVAL)	Interval (in seconds) at which information is collected	ulong	No	Solaris, HP-UX, AIX, Linux, Windows	All	--
IP Address (IP_ADDRESS)	IP address	string(20)	No	Solaris, HP-UX, AIX, Linux, Windows	All	--
OS Name (OS_NAME)	Operating system name	string(64)	No	Solaris, HP-UX, AIX, Linux, Windows	All	--
OS Version (OS_VERSION)	Operating system version	string(64)	No	Solaris, HP-UX, AIX, Linux, Windows	All	--
Record Time (RECORD_TIME)	Record creation time (GMT)	time_t	No	Solaris, HP-UX, AIX, Linux, Windows	All	--
Record Type (INPUT_RECORD_TYPE)	Record name (always PD)	string(8)	No	Solaris, HP-UX, AIX, Linux, Windows	All	--

## 2.8 Agent for Platform (Windows) Records

Table 2.26 lists the records that can be collected by Agent for Platform and the information that is stored in each record.

**Table 2.26 Agent for Platform (Windows) Records**

Record Name	Record ID	Information Stored in Record
Active Server Pages	PI_ASP2	Performance data, taken at specific intervals, about the Active Server Pages device responsible for processing the script language and ActiveX components in the Web service, which is a component of Microsoft Internet Information Services (IIS). This record is not available in Windows Server 2003 (IPF).
Active Server Pages Overview	PI_ASP	Reserved record (not available).
AppleTalk Overview	PI_APLE	Performance data, taken at specific intervals, about the AppleTalk protocol. This record is not available in Windows Server 2003 (x64) or Windows Server 2003 (IPF).
Broker Service - MSNLogon	PI_BRKS	Reserved record (not available).
Browser Overview	PI_BRSR	Performance data, taken at specific intervals, about the Windows Browser service. This record is not available in Windows Server 2003 (IPF).
Chat Service Overview	PI_CHAT	Reserved record (not available).
Content Index Detail	PD_CIND	Reserved record (not available).
Content Index Filter Detail	PD_CINF	Reserved record (not available).
Device Detail	PD_DEV	Performance data indicating the status (at a specific point in time) of the file system driver and kernel driver devices. This record is not available in Windows Server 2003 (IPF).
Event Log	PD_ELOG	Event log data for an application, system and security (at a specific point in time). Event log information stored in this record is as follows: <ul style="list-style-type: none"> <li>▪ Time of each event log</li> <li>▪ Event source</li> <li>▪ Type of event</li> <li>▪ Event ID</li> <li>▪ Description of event</li> </ul>
Exchange Conn for Lotus cc:Mail	PI_ECCM	Performance data, taken at specific intervals, about the number of directories, messages, messages awaiting distribution, and undeliverable messages sent between compatible Lotus cc:Mail Post Offices and Microsoft Exchange Servers. This record is not available in Windows Server 2003 and Windows Server 2003 (IPF).
Exchange Database Overview	PI_EDB	Reserved record (not available).

Record Name	Record ID	Information Stored in Record
Exchange Dir Service Overview	PI_EDS	Performance data, taken at specific intervals, about the status of client address book operations, speed of copying directories to other servers and speed of LDAP client searches in the Microsoft Exchange directory service.  This record is not available in Windows Server 2003 and Windows Server 2003 (IPF).
Exchange Info Store Perf Data	PI_EIPD	Performance data, taken at specific intervals, about the number of users logged in to the information store serving as the Microsoft Exchange service database, as well as the number of clients, maximum number of connections, and RPC status.  This record is not available in Windows Server 2003 and Windows Server 2003 (IPF).
Exchange Info Store Private	PI_EIPR	Performance data, taken at specific intervals, about the number of logins to the private information store holding all messages sent to mailboxes and distribution groups, as well as message status and number of queued messages.  This record is not available in Windows Server 2003 and Windows Server 2003 (IPF).
Exchange Info Store Public	PI_EIPU	Performance data, taken at specific intervals, about the number of logins to the public information store holding information stored in public folders, as well as message status and copying of messages at other servers and in public folders.  This record is not available in Windows Server 2003 and Windows Server 2003 (IPF).
Exchange Internet Mail Service	PI_EIMS	Performance data, taken at specific intervals, about Internet mail services used to send mail from clients that use an API such as MAPI, and to connect to SMTP systems.  This record is not available in Windows Server 2003 and Windows Server 2003 (IPF).
Exchange Internet Protocols	PI_EINP	Performance data, taken at specific intervals, about the number of clients connected to Microsoft Exchange Internet protocols (HTTP, LDAP, NNTP, POP3, IMAP4 and SMTP), as well as the status of transmission and reception queues.  This record is not available in Windows Server 2003 and Windows Server 2003 (IPF).
Exchange MSMail Conn Interchange	PI_EMCI	Performance data, taken at specific intervals, about Microsoft Mail Connector Interchange, which is the Microsoft Mail Connector component used for mail transmission between Microsoft Exchange Server and Microsoft Mail (PC) Post Office.  This record is not available in Windows Server 2003 and Windows Server 2003 (IPF).
Exchange MSMail Conn PC MTA Srv	PI_EMTS	Performance data, taken at specific intervals, about Microsoft Mail Connector (PC) MTA, which is the Microsoft Mail Connector component used for mail transmission between Microsoft Exchange Server and Microsoft Mail (PC) Post Office.  This record is not available in Windows Server 2003 and Windows Server 2003 (IPF).

Record Name	Record ID	Information Stored in Record
Exchange MTA Connections	PI_EMTC	Performance data, taken at specific intervals, about the number of messages sent or received between the message transfer agent (MTA) and connected entities (such as Internet Mail Connector, Private MDB and Public MDB), as well as connection speed and queue status.  This record is not available in Windows Server 2003 and Windows Server 2003 (IPF).
Exchange MTA Performance	PI_EMFTA	Performance data, taken at specific intervals, about the number of messages sent or received with the message transfer agent (MTA) via LAN, RAS and TCP/IP connections, as well as the number of connections and queue status.  This record is not available in Windows Server 2003 and Windows Server 2003 (IPF).
Exchange Web Component Overview	PI_EWEB	Performance data, taken at specific intervals, about the number of objects, message bodies and attached files connected via the Web to mailboxes and public folders by clients using Internet protocols.  This record is not available in Windows Server 2003 and Windows Server 2003 (IPF).
FTP Server Overview	PI_FTPTS	Reserved record (not available).
FTP Server Service Overview	PI_FTSP	Performance data, taken at specific intervals, about the FTP service, which is a component of Microsoft Internet Information Services (IIS).  This record is not available in Windows Server 2003 (IPF).
Gateway Service for NetWare	PI_GTWY	Reserved record (not available).
Generic Data Detail	PD_GEND	Reserved record (not available).
Generic Data Interval	PI_GENI	Reserved record (not available).
Gopher Service Overview	PI_GOPH	Reserved record (not available).
HTTP Content Index Overview	PI_HTCTI	Reserved record (not available).
HTTP Service Overview	PI_HTTP	Reserved record (not available).
ICMP Overview	PI_ICMP	Performance data, taken at specific intervals, about the rate of ICMP messages sent or received by systems using ICMP protocols, as well as the number of each type of ICMP errors.  This record is not available in Windows Server 2003 (IPF).
Image Detail	PD_IMAG	Reserved record (not available).
Internet Addon Services Global	PI_IASG	Reserved record (not available).
Internet Info Server Global	PI_IIS	Performance data, taken at specific intervals, about the overall FTP service and the Web service, which are components of Microsoft Internet Information Services (IIS).  This record is not available in Windows Server 2003 (IPF).
IP Overview	PI_IP	Performance data, taken at specific intervals, about the rate at which IP datagrams were sent/received using the IP protocol, the number of various IP errors, etc.  This record is not available in Windows Server 2003 (IPF).

Record Name	Record ID	Information Stored in Record
LDAP Server Overview	PI_LDAP	Reserved record (not available).
Logical Disk Overview	PI_LOGD	Performance data, taken at specific intervals, about reads, writes, transfers and areas within logical partitions on hard disk drives and fixed disk drives.
Membership Agent Overview	PI_MEMA	Reserved record (not available).
Microsoft Commerce Server	PI_MCS	Reserved record (not available).
NBT Overview	PI_NBT	Performance data, taken at specific intervals, about the rate at which data was transferred via a single NBT connection between local and remote computers. This record is not available in Windows Server 2003 (IPF).
NetBEUI Interface Overview	PI_BEUI	Reserved record (not available).
NetBEUI Resource Overview	PI_BEUR	Reserved record (not available).
Network Interface Overview	PI_NETI	Performance data, taken at specific intervals, about the rate at which data and packets were sent or received via the TCP/IP connection, number of various TCP/IP connection errors, etc.
Network Link IPX Overview	PI_LIPX	Performance data, taken at specific intervals, about the number of connections and datagram transmission rate for computers using the network layer IPX protocol. This record is not available in Windows Server 2003 (x64) or Windows Server 2003 (IPF).
Network Link NetBIOS Overview	PI_LBIO	Performance data, taken at specific intervals, about the number of connected computers using the IPX protocol transport layer interface and the datagram transfer rate. This record is not available in Windows Server 2003 (x64) or Windows Server 2003 (IPF).
Network Link SPX Overview	PI_LSPX	Performance data, taken at specific intervals, about the number of connected computers using the transport layer SPX protocol and the datagram transfer rate. This record is not available in Windows Server 2003 (x64) or Windows Server 2003 (IPF).
Network Segment Overview	PI_NSEG	Reserved record (not available).
NNTP Commands	PI_NWSC	Performance data, taken at specific intervals, about all commands processed by NNTP services distributing, obtaining, and posting news articles on the Internet. This record is not available in Windows Server 2003 (IPF).
NNTP Server	PI_NWSS	Performance data, taken at specific intervals, about NNTP services distributing, obtaining, and posting news articles on the Internet. This record is not available in Windows Server 2003 (IPF).
NNTP Server Client Overview	PI_NTPC	Reserved record (not available).

Record Name	Record ID	Information Stored in Record
NNTP Server Service Overview	PI_NTSP	Reserved record (not available).
Page File Detail	PD_PAGF	Performance data indicating the status (at a specific point in time) of the instances of paging file in the system.
Physical Disk Overview	PI_PHYD	Performance data, taken at specific intervals, about read, write, and transfer operations for hard disks or fixed disk drives.
POP3 Server Overview	PI_POP3	Reserved record (not available).
Process Address Space Detail	PD_ADRS	Reserved record (not available).
Process Detail	PD	Performance data indicating the status (at a specific point in time) of a single process. This status includes paging usage, memory usage, and time data.
Process Detail Interval	PD_PDI	Performance data indicating the status (at a specific point in time) of a single process. This status includes paging usage, memory usage, and time data.
Process End Detail	PD_PEND	Performance data indicating the status following process completion.
Processor Overview	PI_PCSR	Performance data, taken at specific intervals, about interrupt rates and time rates. Information stored in this record is as follows: <ul style="list-style-type: none"> <li>▪ Rates of execution of arithmetic and logical computations in each processor</li> <li>▪ Rates for initialization of peripheral device operations</li> <li>▪ Rates of process thread execution</li> </ul>
Send Mail Overview	PI_SNDM	Reserved record (not available).
Server Work Queues Overview	PI_SVRQ	Performance data, taken at specific intervals, about the length of the server queue and processing within the queue.
Service Process Detail	PD_SVC	Performance data about application services (at a specific point in time) such as Win32 processes registered in the Service Control Manager (SCM). This record is not available in Windows Server 2003 (IPF).
SMTP Server Overview	PI_SMTP	Reserved record (not available).
SMTP Server Service Overview	PI_SMT2	Performance data, taken at specific intervals, about SMTP services used to send email. This record is not available in Windows Server 2003 (IPF).
System Overview	PI	Performance data, taken at specific intervals, about the following Windows performance objects: <ul style="list-style-type: none"> <li>▪ Cache object</li> <li>▪ Memory object</li> <li>▪ Objects object</li> <li>▪ Processor object</li> <li>▪ Redirector object</li> <li>▪ Server object</li> <li>▪ System object</li> </ul>

Record Name	Record ID	Information Stored in Record
TCP Overview	PI_TCP	Performance data, taken at specific intervals, about the rate at which TCP segments were sent or received using the TCP protocol and about the number of TCP connections, etc. This record is not available in Windows Server 2003 (IPF).
Telephony Overview	PI_TELE	Reserved record (not available).
Thread Detail	PD_THRD	Reserved record (not available).
Thread Details Detail	PD_THD	Reserved record (not available).
UDP Overview	PI_UDP	Performance data, taken at specific intervals, about the rate at which UDP datagrams were sent or received using UDP, and the number of various UDP errors, etc. This record is not available in Windows Server 2003 (IPF).
Vote Management Overview	PI_VOTE	Reserved record (not available).
Web Proxy Server Cache Overview	PI_WPSC	Performance data, taken at specific intervals, about Web Proxy Server's URL cache. This record is not available in Windows Server 2003 and Windows Server 2003 (IPF).
Web Proxy Server Service	PI_WPSS	Performance data, taken at specific intervals, about Web Proxy Server. This record is not available in Windows Server 2003 and Windows Server 2003 (IPF).
Web Service Overview	PI_WEB	Performance data, taken at specific intervals, about the Web service, which is a component of Microsoft Internet Information Services (IIS). This record is not available in Windows Server 2003 (IPF).
WinSock Proxy Server Overview	PI_WSPS	Performance data, taken at specific intervals, about Microsoft WinSock Proxy Server. This record is not available in Windows Server 2003 or Windows Server 2003 (IPF).
WINS Server Overview	PI_WINS	Performance data, taken at specific intervals, about WINS Server service transmission. This record is not available in Windows Server 2003 (x64) or Windows Server 2003 (IPF).

## 2.8.1 Active Server Pages (PI\_ASP2)

### Function

The Active Server Pages (PI\_ASP2) record stores performance data, taken at specific intervals, about the Active Server Pages device responsible for processing script language and ActiveX components in the Web service, which is a component of Microsoft Internet Information Services (IIS).

### Notes:

- This record is supported by IIS Version 5.0 or later.
- This record is not available in Windows Server 2003 (IPF).

Table 2.27 Active Server Pages (PI\_ASP2) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

None

### Lifetime

None

### Record Size

- Fixed part: 1,337 bytes
- Variable part: 0 bytes

Table 2.28 Active Server Pages (PI\_ASP2) Fields

Active Server Pages (PI_ASP2)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Debugging Requests (DEBUGGING_REQUESTS)	Number of debug documents requested #2	ulong	No	2000, 2003	TOTAL_DEBUGGING_REQUESTS (T1) - TOTAL_DEBUGGING_REQUESTS (T0)

Active Server Pages (PI_ASP2)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Engine Flush Notifications (ENGINE_FLUSH_NOTIFICATIONS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Errors During Script Runtime (ERRORS_DURING_SCRIPT_RUNTIME)	Number of failed requests caused by runtime errors #2	ulong	No	2000, 2003	TOTAL_ERRORS_DURING_SCRIPT_RUNTIME (T1) - TOTAL_ERRORS_DURING_SCRIPT_RUNTIME (T0)
Errors From ASP Preprocessor (ERRORS_FROM_ASP_PREPROCESSOR)	Number of failed requests caused by preprocessor errors #2	ulong	No	2000, 2003	TOTAL_ERRORS_FROM_ASP_PREPROCESSOR (T1) - TOTAL_ERRORS_FROM_ASP_PREPROCESSOR (T0)
Errors From Script Compilers (ERRORS_FROM_SCRIPT_COMPILERS)	Number of failed requests caused by script compile errors #2	ulong	No	2000, 2003	TOTAL_ERRORS_FROM_SCRIPT_COMPILERS (T1) - TOTAL_ERRORS_FROM_SCRIPT_COMPILERS (T0)
Errors/Sec (ERRORS_PER_SEC)	Rate (num./second) of errors	float	No	2000, 2003	--
In Mem Template Cache Hit Rate (IN_MEMORY_TEMPLATE_CACHE_HIT_RATE)	This is a reserved field; it is not available.	float	No	Not Applicable	--
In Mem Template Cached (IN_MEMORY_TEMPLATE_CACHED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000, 2003	RECORD_TIME (T1) - RECORD_TIME (T0)
Mem Allocated (MEMORY_ALLOCATED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--

Active Server Pages (PI_ASP2)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003	--
Record Type (INPUT_RECORD_TYPE)	Record name (always ASP2)	char (8)	No	2000, 2003	--
Req Bytes In (REQUEST_BYTES_IN)	Size (in bytes) of all requests #2	ulong	No	2000, 2003	TOTAL_REQUEST_BYTES_IN (T1) - TOTAL_REQUEST_BYTES_IN (T0)
Req Bytes Out (REQUEST_BYTES_OUT)	Size (in bytes) of all responses sent to clients, not including the standard HTTP response header #2	ulong	No	2000, 2003	TOTAL_REQUEST_BYTES_OUT (T1) - TOTAL_REQUEST_BYTES_OUT (T0)
Req Execution Time (REQUEST_EXECUTION_TIME)	Time (in milliseconds) required to execute the last request #1, #2	ulong	No	2000, 2003	--
Req Wait Time (REQUEST_WAIT_TIME)	Time (in milliseconds) that the last request has spent waiting in a queue #1, #2	ulong	No	2000, 2003	--
Reqs Disconnected (REQUESTS_DISCONNECTED)	Number of requests disconnected due to transmission error #1, #2	ulong	No	2000, 2003	TOTAL_REQUESTS_DISCONNECTED (T1) - TOTAL_REQUESTS_DISCONNECTED (T0)
Reqs Executing (REQUESTS_EXECUTING)	Number of requests being executed #1, #2	ulong	No	2000, 2003	--
Reqs Failed (REQUESTS_FAILED)	Number of failed requests caused by errors, authentication errors, and rejection #2	ulong	No	2000, 2003	TOTAL_REQUESTS_FAILED (T1) - TOTAL_REQUESTS_FAILED (T0)
Reqs Not Authorized (REQUESTS_NOT_AUTHORIZED)	Number of failed requests caused by inadequate access privileges #2	ulong	No	2000, 2003	TOTAL_REQUESTS_NOT_AUTHORIZED (T1) - TOTAL_REQUESTS_NOT_AUTHORIZED (T0)

Active Server Pages (PI_ASP2)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Reqs Queued (REQUESTS_QUEUED)	Number of requests awaiting execution #1, #2	ulong	No	2000, 2003	--
Reqs Rejected (REQUESTS_REJECTED)	Number of requests that could not be executed due to lack of required resources #2	ulong	No	2000, 2003	TOTAL_REQUESTS_REJECTED (T1) - TOTAL_REQUESTS_REJECTED (T0)
Reqs Succeeded (REQUESTS_SUCCEEDED)	Number of requests executed normally #2	ulong	No	2000, 2003	TOTAL_REQUESTS_SUCCEEDED (T1) - TOTAL_REQUESTS_SUCCEEDED (T0)
Reqs Timed Out (REQUESTS_TIMED_OUT)	Number of requests resulting in timeout #2	ulong	No	2000, 2003	TOTAL_REQUESTS_TIMED_OUT (T1) - TOTAL_REQUESTS_TIMED_OUT (T0)
Reqs/Sec (REQUESTS_PER_SEC)	Rate (num./second) of request executions	float	No	2000, 2003	--
Requests (REQUESTS)	Number of requests #2	ulong	No	2000, 2003	TOTAL_REQUESTS (T1) - TOTAL_REQUESTS (T0)
Rqs Not Found (REQUESTS_NOT_FOUND)	Number of requests where the file could not be found #2	ulong	No	2000, 2003	TOTAL_REQUESTS_NOT_FOUND (T1) - TOTAL_REQUESTS_NOT_FOUND (T0)
Script Engine Cache Hit Rate (SCRIPT_ENGINE_CACHE_HIT_RATE)	This is a reserved field; it is not available.	float	No	Not Applicable	--
Script Engines Cached (SCRIPT_ENGINES_CACHED)	Number of script engines in the cache #1, #2	ulong	No	2000, 2003	--
Session Duration (SESSION_DURATION)	Duration (in milliseconds) of the last session #1, #2	ulong	No	2000, 2003	--

Active Server Pages (PI_ASP2)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Sessions Current (SESSIONS_CURRENT)	Number of sessions currently in progress #1, #2	ulong	No	2000, 2003	--
Sessions Timed Out (SESSIONS_TIMED_OUT)	Number of sessions that timed out #2	ulong	No	2000, 2003	TOTAL_SESSIONS_TIMED_OUT(T1) - TOTAL_SESSIONS_TIMED_OUT(T0)
Sessions Total (SESSIONS_TOTAL)	Total number of sessions since the service started #1, #3	ulong	No	2000, 2003	--
Template Cache Hit Rate (TEMPLATE_CACHE_HIT_RATE)	Rate of requests found in the template cache (%) #1	ulong	No	2000, 2003	--
Template Notifications (TEMPLATE_NOTIFICATIONS)	Number of templates rendered invalid in the cache due to change notifications #2	ulong	No	2000, 2003	TOTAL_TEMPLATE_NOTIFICATIONS(T1) - TOTAL_TEMPLATE_NOTIFICATIONS(T0)
Templates Cached (TEMPLATES_CACHED)	Number of templates cached #1, #2	ulong	No	2000, 2003	--
Total Debugging Requests (TOTAL_DEBUGGING_REQUESTS)	Total number of debug document requests #1, #3	ulong	No	2000, 2003	--
Total Err During Script Runtime (TOTAL_ERRORS_DURING_SCRIPT_RUNTIME)	Total number of failed requests caused by runtime errors #1, #3	ulong	No	2000, 2003	--
Total Err Frm ASP Preprocessor (TOTAL_ERRORS_FROM_ASP_PREPROCESSOR)	Total number of failed requests caused by preprocessor errors #1, #3	ulong	No	2000, 2003	--
Total Err Frm Script Compilers (TOTAL_ERRORS_FROM_SCRIPT_COMPILERS)	Total number of failed requests caused by script compilation errors #1, #3	ulong	No	2000, 2003	--

Active Server Pages (PI_ASP2)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Total Req Bytes In (TOTAL_REQUEST_BYTES_IN)	Total size (in bytes) of all requests #1, #3	uLong	No	2000, 2003	--
Total Req Bytes Out (TOTAL_REQUEST_BYTES_OUT)	Total size (in bytes) of all responses sent to clients, not including the standard HTTP response header #1, #3	uLong	No	2000, 2003	--
Total Reqs (TOTAL_REQUESTS)	Total number of requests since the service started #1, #3	uLong	No	2000, 2003	--
Total Reqs Disconnected (TOTAL_REQUESTS_DISCONNECTED)	Total number of requests disconnected due to transmission errors #1, #3	uLong	No	2000, 2003	--
Total Reqs Failed (TOTAL_REQUESTS_FAILED)	Total number of failed requests caused by errors, authentication errors, and rejection #1, #3	uLong	No	2000, 2003	--
Total Reqs Not Authorized (TOTAL_REQUESTS_NOT_AUTHORIZED)	Total number of failed requests caused by inadequate access privileges #1, #3	uLong	No	2000, 2003	--
Total Reqs Rejected (TOTAL_REQUESTS_REJECTED)	Total number of requests that could not be executed due to lack of required resources #1, #3	uLong	No	2000, 2003	--
Total Reqs Succeeded (TOTAL_REQUESTS_SUCCEEDED)	Total number of requests executed normally #1, #3	uLong	No	2000, 2003	--
Total Reqs Timed Out (TOTAL_REQUESTS_TIMED_OUT)	Total number of requests that timed out #1, #3	uLong	No	2000, 2003	--

Active Server Pages (PI_ASP2)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Total Sessions Timed Out (TOTAL_SESSIONS_TIMED_OUT)	Total number of sessions that timed out #1, #3	ulong	No	2000, 2003	--
Total Template Notifications (TOTAL_TEMPLATE_NOTIFICATIONS)	Total number of templates rendered invalid in the cache due to change notifications #1, #3	ulong	No	2000, 2003	--
Total Trans (TOTAL_TRANSACTIONS)	Total number of transactions since the service started #1, #3	ulong	No	2000, 2003	--
Total Trans Aborted (TOTAL_TRANSACTIONS_ABORTED)	Total number of transactions aborted #1, #3	ulong	No	2000, 2003	--
Total Trans Committed (TOTAL_TRANSACTIONS_COMMITTED)	Number of committed transactions #1 #3	ulong	No	2000, 2003	--
Total_Reqs Not Found (TOTAL_REQUESTS_NOT_FOUND)	Total number of requests where the file could not be found #1, #3	ulong	No	2000, 2003	--
Trans Aborted (TRANSACTIONS_ABORTED)	Number of transactions aborted #2	ulong	No	2000, 2003	TOTAL_TRANSACTIONS_ABORTED (T1) - TOTAL_TRANSACTIONS_ABORTED (T0)
Trans Committed (TRANS_COMMITTED)	Number of transactions committed #2	ulong	No	2000, 2003	TOTAL_TRANSACTIONS_COMMITTED (T1) - TOTAL_TRANSACTIONS_COMMITTED (T0)
Trans Pending (TRANSACTIONS_PENDING)	Number of transactions current being executed #1, #2	ulong	No	2000, 2003	--
Transactions/Sec (TRANSACTIONS_PER_SECOND)	Rate (num./second) of transaction executions	float	No	2000, 2003	--

## 2.8.2 AppleTalk Overview (PI\_APLE)

### Function

The AppleTalk Overview (PI\_APLE) record stores performance data, taken at specific intervals, about the AppleTalk protocol. This is a multi-instance record.

### Notes:

- This record is not available in Windows Server 2003 (x64) or Windows Server 2003 (IPF).
- Installation of the AppleTalk protocol is required.

Table 2.29 AppleTalk Overview (PI\_APLE) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

Instance (INSTANCE)

### Lifetime

None

### Record Size

- Fixed part: 681 bytes
- Variable part: 676 bytes

Table 2.30 AppleTalk Overview (PI\_APLE) Fields

AppleTalk Overview (PI_APLE)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
AARP Pkts/sec (AARP_PACKETS_PER_SEC)	Rate (num./second) at which AppleTalk received AARP packets	float	No	2000, 2003	--
ATP ALO Response/sec (ATP_ALO_RESPONSE_PER_SEC)	Rate (num./second) at which ATP transaction responses were received more than once at the port	float	No	2000, 2003	--
ATP Pkts/sec (ATP_PACKETS_PER_SEC)	Rate (num./second) at which AppleTalk received ATP packets at the port	float	No	2000, 2003	--
ATP Rcvd Release/sec (ATP_RECVD_RELEASE_PER_SEC)	Rate (num./second) at which ATP transaction release packets were received at the port	float	No	2000, 2003	--
ATP Response Timeouts (ATP_RESPONSE_TIMEOUTS)	Number of ATP release times at the port where the designated time has expired #1, #2	ulong	No	2000, 2003	--
ATP Retries Local (ATP_RETRIES_LOCAL)	Number of ATP release times at the port where the designated time has expired #1, #2	ulong	No	2000, 2003	--
ATP Retries Remote (ATP_RETRIES_REMOTE)	Number of ATP requests resent to the port #1, #2	ulong	No	2000, 2003	--
ATP XO Response/sec (ATP_XO_RESPONSE_PER_SEC)	Rate (num./second) of once-only ATP transaction responses at the port	float	No	2000, 2003	--
Avg Time/AARP Pkt (AVERAGE_TIME_PER_AARP_PACKET)	Average duration of AARP packet processing at the port (in milliseconds)	float	No	2000, 2003	--
Avg Time/ATP Pkt (AVERAGE_TIME_PER_ATP_PACKET)	Average duration of ATP packet processing at the port (in milliseconds)	float	No	2000, 2003	--

AppleTalk Overview (PI_APLE)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Avg Time/DDP Pkt (AVERAGE_TIME_PER_DDP_PACKET)	Average duration of DDP packet processing at the port (in milliseconds)	float	No	2000, 2003	--
Avg Time/NBP Pkt (AVERAGE_TIME_PER_NBP_PACKET)	Average duration of NBP packet processing at the port (in milliseconds)	float	No	2000, 2003	--
Avg Time/RTMP Pkt (AVERAGE_TIME_PER_RTMP_PACKET)	Average duration of RTMP packet processing at the port (in milliseconds)	float	No	2000, 2003	--
Avg Time/ZIP Pkt (AVERAGE_TIME_PER_ZIP_PACKET)	Average duration of ZIP packet processing at the port (in milliseconds)	float	No	2000, 2003	--
Bytes In/sec (BYTES_IN_PER_SEC)	Rate (bytes/second) at which AppleTalk received data at the port	float	No	2000, 2003	--
Bytes Out/sec (BYTES_OUT_PER_SEC)	Rate (bytes/second) at which AppleTalk sent data at the port	float	No	2000, 2003	--
Current Nonpaged Pool (CURRENT_NONPAGED_POOL)	Non page memory resources used by AppleTalk at the port (in bytes) #1, #2	ulong	No	2000, 2003	--
DDP Pkts/sec (DDP_PACKETS_PER_SEC)	Rate (num./second) at which AppleTalk received DDP packets at the port	float	No	2000, 2003	--
Instance (INSTANCE)	Instance name of the network interface used by the AppleTalk protocol.  The instance name is an NIC displayed in the order of binding. Dial-up is displayed as the first instance name.	string(256)	No	2000, 2003	--

AppleTalk Overview (PI_APLE)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. Where summarized in a historical report, the last value stored is displayed.	ulong	No	2000, 2003	RECORD_TIME (T1) - RECORD_TIME (T0)
Interval2 (INTERVAL2)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000, 2003	RECORD_TIME (T1) - RECORD_TIME (T0)
NBP Pkts/sec (NBP_PACKETS_PER_SEC)	Rate (num./second) at which AppleTalk received NBP packets at the port	float	No	2000, 2003	--
Pkts Dropped (PACKETS_DROPPED)	Number of packets dropped due to resource limitations at the port #1, #2	ulong	No	2000, 2003	--
Pkts In/sec (PACKETS_IN_PER_SEC)	Rate (num./second) at which AppleTalk received packets at the port	float	No	2000, 2003	--
Pkts Out/sec (PACKETS_OUT_PER_SEC)	Rate (num./second) at which AppleTalk sent packets at the port	float	No	2000, 2003	--
Pkts Routed In/sec (PACKETS_ROUTED_IN_PER_SEC)	Rate (num./second) of packets routed at the port	float	No	2000, 2003	--
Pkts Routed Out/sec (PACKETS_ROUTED_OUT_PER_SEC)	Rate (num./second) of packets routed at the port	float	No	2000, 2003	--
RTMP Pkts/sec (RTMP_PACKETS_PER_SEC)	Rate (num./second) at which AppleTalk received RTMP packets at the port	float	No	2000, 2003	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003	--

AppleTalk Overview (PI_APLE)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Record Type (INPUT_RECORD_TYPE)	Record name (always APPLE)	char(8)	No	2000, 2003	--
ZIP Pkts/sec (ZIP_PACKETS_PER_SEC)	Rate (num./second) at which AppleTalk received ZIP packets at the port	float	No	2000, 2003	--

### 2.8.3 Browser Overview (PI\_BRSR)

#### Function

The Browser Overview (PI\_BRSR) record stores performance data, taken at specific intervals, about the Windows Browser service.

#### Notes:

- This record is not available in Windows Server 2003 (IPF).
- This record is not collected while the computer browser service provided by the OS (service name: Browser) is stopped.
- If Windows Server 2003 is no longer collecting performance data correctly for this record, the Browser object performance data displayed by **System Monitor** and **Performance Logs and Alerts** in the Performance console can no longer be collected correctly.

This problem originates in the system files included in Windows Server 2003. For a workaround to this problem, check with Microsoft at the following URL:

URL: <http://support.microsoft.com/kb/835421/>

Table 2.31 Browser Overview (PI\_BRSR) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

#### Key Fields

None

#### Lifetime

None

#### Record Size

- Fixed part: 1,001 bytes
- Variable part: 0 bytes

Table 2.32 Browser Overview (PI\_BRSR) Fields

Browser Overview (PI_BRSR)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Announcements Domain/sec (ANNOUNCEMENTS _DOMAIN_PER_SE C)	Rate (num./second) of domain announcements made by the domain itself to the network	float	No	2000, 2003	--
Announcements Server/sec (ANNOUNCEMENTS _SERVER_PER_SE C)	Rate (num./second) of server announcements made by the domain server to the server	float	No	2000, 2003	--
Announcements Total/sec (ANNOUNCEMENTS _TOTAL_PER_SEC )	Total value of the Announcements Server/sec and Announcements Domain/sec fields	float	No	2000, 2003	--
Duplicate Master Announcements (DUPLICATE_MAS TER_ANNOUNCEME NTS)	Number of times the master browser has searched for a different master browser within the same domain #1. #2	ulong	No	2000, 2003	--
Election Pkts/sec (ELECTION_PACK ETS_PER_SEC)	Rate (num./second) at which the workstation received browser election packets	float	No	2000, 2003	--
Enumerations Domain/sec (ENUMERATIONS_ DOMAIN_PER_SEC )	Rate (num./second) at which the workstation processed reference requests from the domain	float	No	2000, 2003	--
Enumerations Other/sec (ENUMERATIONS_ OTHER_PER_SEC)	Rate (num./second) at which the workstation processed reference requests that were not from the domain or server	float	No	2000, 2003	--
Enumerations Server/sec (ENUMERATIONS_ SERVER_PER_SEC )	Rate (num./second) at which the workstation processed reference requests that were not from the server	float	No	2000, 2003	--

Browser Overview (PI_BRSR)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Enumerations Total/sec (ENUMERATIONS_ TOTAL_PER_SEC)	Rate (num./second) at which the workstation processed reference requests.  This value is the sum of the Enumerations Server/sec, Enumerations Domain/sec and Enumerations Other/sec fields.	float	No	2000, 2003	--
Illegal Datagrams/sec (ILLEGAL_DATAG RAMS_PER_SEC)	Rate (num./second) at which the workstation received illegal format datagrams	float	No	2000, 2003	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000, 2003	RECORD_T IME (T1) - RECORD_T IME (T0)
Mailslot Allocations Failed (MAILSLOT_ALLO CATIONS_FAILED )	Number of times the datagram receiver failed to allocate a buffer for retaining the contents of a user mailslot #1, #2	ulong	No	2000, 2003	--
Mailslot Opens Failed/sec (MAILSLOT_OPEN S_FAILED_PER_S EC)	Rate (num./second) at which the workstation received mailslot messages, distributed to the mailslot of other workstations	float	No	2000, 2003	--
Mailslot Receives Failed (MAILSLOT_RECE IVES_FAILED)	Number of mailslot messages not received due to transport failure #1, #2	ulong	No	2000, 2003	--
Mailslot Writes Failed (MAILSLOT_WRIT ES_FAILED)	Number of mailslot messages received successfully but not written in the mailslot #1, #2	ulong	No	2000, 2003	--
Mailslot Writes/sec (MAILSLOT_WRIT ES_PER_SEC)	Rate (num./second) at which mailslot messages were received normally	float	No	2000, 2003	--

Browser Overview (PI_BRSR)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Missed Mailslot Datagrams (MISSED_MAILSL OT_DATAGRAMS)	Number of mailslot datagrams discarded due to a configuration or allocation limit #1, #2	ulong	No	2000, 2003	--
Missed Server Announcements (MISSED_SERVER _ANNOUNCEMENTS )	Number of server notifications lost due to a configuration or allocation limit #1, #2	ulong	No	2000, 2003	--
Missed Server List Reqs (MISSED_SERVER _LIST_REQUESTS )	Number of browser server list requests received by the workstation that could not be processed #1, #2	ulong	No	2000, 2003	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003	--
Record Type (INPUT_RECORD_ TYPE)	Record name (always BRSR)	char(8)	No	2000, 2003	--
Server Announce Allocs Failed/sec (SERVER_ANNOUN CE_ALLOC_FAIL_ PER_SEC)	Rate (num./second) at which server or domain notifications failed due to a lack of memory	float	No	2000, 2003	--
Server List Reqs/sec (SERVER_LIST_R EQUESTS_PER_SE C)	Rate (num./second) at which browser server list requests were processed by a workstation	float	No	2000, 2003	--

## 2.8.4 Device Detail (PD\_DEV)

### Function

The Device Detail (PD\_DEV) record stores performance data indicating the status (at a specific point in time) of file system driver and kernel driver devices. This is a multi-instance record.

**Note:** This record is not available in Windows Server 2003 (IPF).

Table 2.33 Device Detail (PD\_DEV) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

- Device Name (DEVICE\_NAME)
- Device Type (DEVICE\_TYPE)

### Lifetime

From the installation to uninstallation of a device driver.

### Record Size

- Fixed part: 681 bytes
- Variable part: 2,392 bytes

Table 2.34 Device Detail (PD\_DEV) Fields

Device Detail (PD_DEV)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Active (ACTIVE)	Indicating whether or not the device was active during data collection. The valid values are YES and NO.	string (8)	No	2000, 2003	--
Depend Group Name (DEPEND_GROUP _NAME)	List of group names that need to be loaded before the device. Blank if nothing needs to be loaded.	string (256)	No	2000, 2003	--

Device Detail (PD_DEV)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Depend Service Name (DEPEND_SERVI CE_NAME)	List of service names that need to be loaded before the device. Blank if nothing needs to be loaded.	string(256)	No	2000, 2003	--
Device Name (DEVICE_NAME)	Device name used by a user interface program to identify a device	string(256)	No	2000, 2003	--
Device Type (DEVICE_TYPE)	One of the two device service types: <ul style="list-style-type: none"> <li>▪ FILE_SYSTEM_DRIVER: File system device driver service</li> <li>▪ KERNEL_DRIVER: Kernel device driver service</li> </ul>	string(36)	No	2000, 2003	--
Error Control (ERROR_CONTRO L)	Error severity level when a device service fails to start. The following are the valid values: <ul style="list-style-type: none"> <li>▪ CRITICAL: If possible, the error is logged by the starting program. If the error occurs during a startup operation that was using the last known correct configuration, the operation fails. In other cases, the system restarts using the last known correct configuration.</li> <li>▪ IGNORE: The starting program logs the error and continues the startup operation.</li> <li>▪ NORMAL: The error is logged and a message box pop-up is displayed by the starting program, and the startup operation is continued.</li> <li>▪ SEVERE: The error is logged by the starting program. If the error occurs during a startup operation that was using the last known correct configuration, the operation fails. In other cases, the system restarts using the last known correct configuration.</li> </ul>	string(16)	No	2000, 2003	--

Device Detail (PD_DEV)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Group Name (GROUP_NAME)	The group name for the current device, chosen from the group lists which determine load order and which are registered in the registry. Blank if the device does not belong to any group.	string(256)	No	2000, 2003	--
Image Path (IMAGE_PATH)	Device's image path name. Blank for inactive devices.	string(1024)	No	2000, 2003	--
Interval (INTERVAL)	Always 0	ulong	No	2000, 2003	--
Object Name (OBJECT_NAME)	Object name used by the system to load the device driver. Blank if the preset object name created by the I/O system is to be used as the driver name.	string(256)	No	2000, 2003	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003	--
Record Type (INPUT_RECORD_TYPE)	Record name (always DEV)	char(8)	No	2000, 2003	--
Start Constant (START_CONSTANT)	Device's initial value. The following are the values: <ul style="list-style-type: none"> <li>▪ AUTO: The device starts automatically during system startup.</li> <li>▪ BOOT: The system loader starts the device.</li> <li>▪ DISABLED: The device service cannot be started.</li> <li>▪ DEMAND: SCM starts the device when a StartService function (API) is called.</li> <li>▪ SYSTEM: The IoInitSystem function (API) starts the device.</li> </ul>	string(24)	No	2000, 2003	--
Tag (TAG)	Where the tag order vector has been specified in the registry, the load order within the group specified in the Group Name field. If no device-related tag is specified, the value is 0.	long	No	2000, 2003	--

## 2.8.5 Event Log (PD\_ELOG)

### Function

The Event Log (PD\_ELOG) record stores event log data about applications, systems, and security (at a specific point in time). Event log information stored in this record is as follows:

- Time of each event log
- Event source
- Type of event
- Event ID
- Description of event

This is a multi-instance record.

### Notes:

- Increments from the start of the event log monitoring are collected for this record. For historical reports, the first data stored can take up to twice as long as the designated collection interval. For real-time reports, data is collected from the second time onwards.
- If the number of event logs registered during the collection interval for this record is too large, collection for other records may be delayed or a timeout may occur. The collection interval for this record should be set to a value that ensures that the increase in event logs over a 10-second interval is no greater than *1,000, or the maximum number of reports displayed simultaneously*.
- This record collects only event logs generated during the record collection period since the Agent Collector service started. Event logs generated during startup or shutdown of the OS, Tuning Manager or record collection itself will not be collected.
- This record collects information recorded in the event log. For this reason, it is not appropriate to use for automatic determination of whether operations have been restored to normal after an abnormal or warning condition has been detected by an alarm. It is recommended that you specify settings so that alarms are always reported when an abnormal or warning condition is satisfied.
- If you collect this record in Windows Server 2003 (x64), the values in the following fields might differ in event logs that are output from 64-bit applications that do not support WOW64 when compared with the information displayed in Windows Server 2003 (x64) Event Viewer (displayed by choosing **Administrative Tools**, and then **Event Viewer**):
  - In the Description field, the text output by the `KAFV11405-W` message
  - In the Event Category field, the value output for `(event-category-ID)`.

Table 2.35 Event Log (PD\_ELOG) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

**Key Fields**

- Event ID (EVENT\_ID)
- Source Name (SOURCE\_NAME)
- Time Generated (TIME\_GENERATED)

**Lifetime**

None

**Record Size**

- Fixed part: 677 bytes
- Variable part: 944 bytes

Table 2.36 Event Log (PD\_ELOG) Fields

Event Log (PD_ELOG)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Computer Name (COMPUTER_NAME)	Name of the computer that generated the event	string(36)	No	2000, 2003	--
Description (DESCRIPTION)	Description of the event log	string(512)	No	2000, 2003	--
Event Category (EVENT_CATEGORY)	Subcategory specific to the source of the event	string(36)	No	2000, 2003	--
Event ID (EVENT_ID)	Event ID	ulong	No	2000, 2003	--

Event Log (PD_ELOG)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Event Type ID (EVENT_TYPE_ID)	Event type identifier. The value of this field is one of the following: 1 : Error 2 : Warning 4 : Information 8 : Success Audit 16 : Failure Audit	ulong	No	2000, 2003	--
Event Type Name (EVENT_TYPE_NAME)	Type of event; the value is one of the following: <ul style="list-style-type: none"> <li>▪ Error: Indicates an error event.</li> <li>▪ Warning: Indicates a warning event.</li> <li>▪ Information: Indicates an information event.</li> <li>▪ Success Audit: Indicates a successful audit event.</li> <li>▪ Failure Audit: Indicates a failed audit event.</li> </ul>	string(26)	No	2000, 2003	--
Log Name (LOG_NAME)	Event log type. The value of this field is one of the following: <ul style="list-style-type: none"> <li>▪ Application: Indicates an application-type event.</li> <li>▪ Security: Indicates a security-type event.</li> <li>▪ System: Indicates a system-type event.</li> </ul>	string(26)	No	2000, 2003	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003	--
Record Type (INPUT_RECORD_TYPE)	Record name (always ELOG)	char(8)	No	2000, 2003	--
Source Name (SOURCE_NAME)	Name of the source that created the entry (application, service, driver, or subsystem)	string(256)	No	2000, 2003	--
Time Generated (TIME_GENERATED)	Time the event entry was submitted	time_t	No	2000, 2003	--
User Name (USER_NAME)	Name of the user that was active when the event was recorded	string(36)	No	2000, 2003	--

Event Log (PD_ELOG)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
User Sid (USER_SID)	<p>Security ID type of the user that was active when the event was recorded.</p> <p>The value of this field is one of the following:</p> <ul style="list-style-type: none"> <li>1: User</li> <li>2: Group</li> <li>3: Domain</li> <li>4: Alias</li> <li>5: Known group</li> <li>6: Deleted account</li> <li>7: Invalid</li> <li>8: Unknown type</li> <li>9: Computer</li> <li>0: No information</li> </ul>	ulong	No	2000, 2003	--

## 2.8.6 Exchange Conn for Lotus cc:Mail (PI\_ECCM)

### Function

The Exchange Conn for Lotus cc:Mail (PI\_ECCM) record stores performance data, taken at specific intervals, about the number of directories, messages, messages awaiting distribution, and undeliverable messages sent between compatible Lotus cc:Mail Post Offices and Microsoft Exchange Servers.

### Notes:

- This record is available in a Microsoft Exchange Server 5.5 environment.
- This record is not available in Windows Server 2003 and Windows Server 2003 (IPF).

Table 2.37 Exchange Conn for Lotus cc:Mail (PI\_ECCM) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

None

### Lifetime

From the Microsoft Exchange Server setup to the modification of its settings.

### Record Size

- Fixed part: 841 bytes
- Variable part: 0 bytes

Table 2.38 Exchange Conn for Lotus cc:Mail (PI\_ECCM) Fields

Exchange Conn for Lotus cc:Mail (PI_ECCM)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
DirSynch to Lotus cc:Mail (DIRSYNCH_TO_LOTUS_CC_MAIL)	Number of directory updates sent to Lotus cc:Mail since the last directory sync cycle began #1, #2	ulong	No	2000	--
DirSynch to Microsoft Exchange (DIRSYNCH_TO_MICROSOFT_EXCHANGE)	Number of directory updates sent to Microsoft Exchange since the last directory sync cycle began #1, #2	ulong	No	2000	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000	RECORD_TIME (T1) - RECORD_TIME (T0)
Microsoft Exchange MTS-IN (MICROSOFT_EXCHANGE_MTS_IN)	Number of messages to be distributed to Microsoft Exchange #1, #2	ulong	No	2000	--
Microsoft Exchange MTS-OUT (MICROSOFT_EXCHANGE_MTS_OUT)	Number of messages to be distributed to Lotus cc:Mail #1, #2	ulong	No	2000	--
Msgs Sent to Lotus cc:Mail (MSGSENT_TO_LOTUS_CC_MAIL)	Number of messages sent to Lotus cc:Mail #1, #2	ulong	No	2000	--
Msgs Sent to Lotus cc:Mail/hr (MSGSENT_TO_LOTUS_CC_MAIL_PER_HR)	Rate (num./hour) at which messages were sent to Lotus cc:Mail #1	float	No	2000	--
Msgs Sent to MS Exchange (MSGSENT_TO_MS_EXCHANGE)	Number of messages sent to Microsoft Exchange #1, #2	ulong	No	2000	--
Msgs Sent to MS Exchange/hr (MSGSENT_TO_MS_EXCHANGE_PER_HR)	Rate (num./hour) at which messages were sent to Microsoft Exchange #1	float	No	2000	--
NDRs to Lotus cc:Mail (NDRS_TO_LOTUS_CC_MAIL)	Number of NDRs sent to Lotus cc:Mail #1, #2	ulong	No	2000	--
NDRs to Microsoft Exchange (NDRS_TO_MICROSOFT_EXCHANGE)	Number of NDRs sent to Microsoft Exchange #1, #2	ulong	No	2000	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000	--

Exchange Conn for Lotus cc:Mail (PI_ECCM)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Record Type (INPUT_RECORD_TYPE)	Record name (always ECCM)	char (8 )	No	2000	--

## 2.8.7 Exchange Dir Service Overview (PI\_EDS)

### Function

The Exchange Dir Service Overview (PI\_EDS) record stores performance data, taken at specific intervals, about the status of client address book operations, the speed of copying directories to other servers and the speed of LDAP client searches in the Microsoft Exchange directory service.

The directory automatically copies addresses, mailboxes, public folders, distribution lists and site and service configuration information to all other servers in the site.

### Notes:

- This record is available in a Microsoft Exchange Server 5.5 environment.
- This record is not available in Windows Server 2003 and Windows Server 2003 (IPF).

Table 2.39 Exchange Dir Service Overview (PI\_EDS) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

None

### Lifetime

From the Microsoft Exchange Server setup to the modification of its settings.

### Record Size

- Fixed part: 969 bytes
- Variable part: 0 bytes

Table 2.40 Exchange Dir Service Overview (PI\_EDS) Fields

Exchange Dir Service Overview (PI_EDS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Access Violations (ACCESS_VIOLATIONS)	Number of directory service write processes rejected for security reasons #1, #2	ulong	No	2000	--
Address Book Browsers/sec (AB_BROWSES_PER_SEC)	Rate (num./second) of browses performed by Address Book clients	float	No	2000	--
Address Book Client Sessions (AB_CLIENT_SESSIONS)	Number of Address Book client sessions that were connected #1, #2	ulong	No	2000	--
Address Book Reads/sec (AB_READS_PER_SEC)	Rate (num./second) of reads performed by Address Book clients	float	No	2000	--
Address Book View Modifies/sec (ADDRESS_BOOK_VIEW_MODIFIES_PER_SEC)	Rate (num./second) of directory objects modified by View Consistency Checker	float	No	2000	--
Address Book View Reads/sec (ADDRESS_BOOK_VIEW_READS_PER_SEC)	Rate (num./second) of directory objects read by View Consistency Checker	float	No	2000	--
Address Book View Writes/sec (ADDRESS_BOOK_VIEW_WRITES_PER_SEC)	Rate (num./second) of Address Book View containers created by View Consistency Checker	float	No	2000	--
Address Book Writes/sec (AB_WRITES_PER_SEC)	Rate (num./second) of write operations executed by Address Book clients	float	No	2000	--
ExDS Client Sessions (EXDS_CLIENT_SESSIONS)	Number of connected Extended Directory Service client sessions that were started by other Microsoft Exchange services and Microsoft Exchange Administrator programs #1, #2	ulong	No	2000	--
ExDS Reads/sec (EXDS_READS_PER_SEC)	Rate (num./second) of read operations executed by Extended Directory Service clients	float	No	2000	--
ExDS Writes/sec (EXDS_WRITES_PER_SEC)	Rate (num./second) of write operations executed by Extended Directory Service clients	float	No	2000	--

Exchange Dir Service Overview (PI_EDS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000	RECORD_TIME (T1) - RECORD_TIME (T0)
LDAP Searches (LDAP_SEARCHES)	Total number of LDAP searches executed since DSA started #1, #2	ulong	No	2000	--
LDAP Searches/sec (LDAP_SEARCHES_PER_SEC)	Rate (num./second) of searches performed by LDAP clients	float	No	2000	--
Objects Replicated Out/sec (OBJECTS_REPLICATED_OUT_PER_SEC)	Rate (num./second) at which objects were copied from a machine to another Directory Server	float	No	2000	--
Pending Replication Synchs (PENDING_REPLICATION_SYNCS)	Number of directory synchs placed in queue but not processed yet due to the server #1, #2	ulong	No	2000	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000	--
Record Type (INPUT_RECORD_TYPE)	Record name (always EDS)	char (8)	No	2000	--
Remaining Replication Updates (REMAINING_REPLICATION_UPDATES)	Number of object modifications received in the directory replication update packets that were current during data collection but not yet applied to the local service #1, #2	ulong	No	2000	--
Replication Updates/sec (REPLICATION_UPDATES_PER_SEC)	Rate (num./second) of replication updates applied by the local directory	float	No	2000	--
Threads in Use (THREADS_IN_USE)	Number of threads created by RPC that are used by the directory service #1, #2	ulong	No	2000	--

## 2.8.8 Exchange Info Store Perf Data (PI\_EIPD)

### Function

The Exchange Info Store Perf Data (PI\_EIPD) record stores performance data, taken at specific intervals, about the number of users logged on to the information store serving as the Microsoft Exchange service database, as well as the number of clients, maximum number of connections, and RPC operation status.

### Notes:

- This record is available in a Microsoft Exchange Server 5.5 or Microsoft Exchange 2000 Server environment.
- This record is not available in Windows Server 2003 and Windows Server 2003 (IPF).

Table 2.41 Exchange Info Store Perf Data (PI\_EIPD) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

None

### Lifetime

From the Microsoft Exchange Server setup to the modification of its settings.

### Record Size

- Fixed part: 1,721 bytes
- Variable part: 0 bytes

Table 2.42 Exchange Info Store Perf Data (PI\_EIPD) Fields

Exchange Info Store Perf Data (PI_EIPD)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Active Anonymous Users (ACTIVE_ANONYMOUS_USER_C OUNT)	Number of active anonymous users #1, #2	ulong	No	2000	--

Exchange Info Store Perf Data (PI_EIPD)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Active Conns (ACTIVE_CONNECTION_COUNT)	Number of connections that executed some operation within 10 minutes before data collection #1, #2	ulong	No	2000	--
Active Users (ACTIVE_USER_COUNT)	Number of active users who executed some operation within 10 minutes before data collection #1, #2	ulong	No	2000	--
Anonymous Users (ANONYMOUS_USER_COUNT)	Number of anonymous users who connected to the information store #1, #2	ulong	No	2000	--
Appt Instance Creation Rate (APPOINTMENT_INSTANCE_CREATION_RATE)	This is a reserved field; it is not available.	float	No	Not Applicable	--
Appt Instance Deletion Rate (APPOINTMENT_INSTANCE_DELETION_RATE)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Appt Instances Created (APPOINTMENT_INSTANCES_CREATED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Appt Instances Deleted (APPOINTMENT_INSTANCES_DELETED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Conns (CONNECTION_COUNT)	Number of client processes that connected to the information store #1, #2	ulong	No	2000	--
Database Session Hit Rate (DATABASE_SESSION_HIT_RATE)	Rate (%) at which database sessions were reused #1	ulong	No	2000	--
FB Publish Count (FB_PUBLISH_COUNT)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
FB Publish Rate (FB_PUBLISH_RATE)	This is a reserved field; it is not available.	float	No	Not Applicable	--
IMAPI Commands Issued (IMAPI_COMMANDS_ISSUED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
IMAPI Commands Issued Rate (IMAPI_COMMANDS_ISSUED_RATE)	This is a reserved field; it is not available.	float	No	Not Applicable	--
IMAPI Message Send Rate (IMAPI_MESSAGE_SEND_RATE)	This is a reserved field; it is not available.	float	No	Not Applicable	--

Exchange Info Store Perf Data (PI_EIPD)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
IMAPI Messages Sent (IMAPI_MESSAGES_SENT)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records. For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000	--
Max Anonymous Users (MAXIMUM_ANONYMOUS_USERS)	Maximum number of anonymous users #1, #3	ulong	No	2000	--
Max Conns (MAXIMUM_CONNECTIONS)	Maximum number of connections #1, #3	ulong	No	2000	--
Max Users (MAXIMUM_USERS)	Maximum number of users #1, #3	ulong	No	2000	--
NNTP Commands Issued (NNTP_COMMANDS_ISSUED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
NNTP Commands Issued Rate (NNTP_COMMANDS_ISSUED_RATE)	This is a reserved field; it is not available.	float	No	Not Applicable	--
NNTP Current Outbound Conns (NNTP_CURRENT_OUTBOUND_CONNECTIONS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
NNTP Failed Posts (NNTP_FAILED_POSTS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
NNTP Failed Posts Rate (NNTP_FAILED_POSTS_RATE)	This is a reserved field; it is not available.	float	No	Not Applicable	--
NNTP Messages Posted (NNTP_MESSAGES_POSTED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
NNTP Messages Posted Rate (NNTP_MESSAGES_POSTED_RATE)	This is a reserved field; it is not available.	float	No	Not Applicable	--
NNTP Messages Read (NNTP_MESSAGES_READ)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
NNTP Messages Read Rate (NNTP_MESSAGES_READ_RATE)	This is a reserved field; it is not available.	float	No	Not Applicable	--

Exchange Info Store Perf Data (PI_EIPD)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
NNTP Outbound Conns (NNTP_OUTBOUND_CONNECTIONS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Newsfeed Bytes Sent (NEWSFEED_BYTES_SENT)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Newsfeed Bytes Sent/Sec (NEWSFEED_BYTES_SENT_SEC)	This is a reserved field; it is not available.	float	No	Not Applicable	--
Newsfeed Inbound Rej Msgs (NEWSFEED_INBOUND_REJECTED_MESSAGES)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Newsfeed Inbound Rej Msgs Rate (NEWSFEED_INBOUND_REJECTED_MSG_RATE)	This is a reserved field; it is not available.	float	No	Not Applicable	--
Newsfeed Messages Rcvd (NEWSFEED_MESSAGES_RECEIVED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Newsfeed Messages Rcvd Rate (NEWSFEED_MESSAGES_RECEIVED_RATE)	This is a reserved field; it is not available.	float	No	Not Applicable	--
Newsfeed Messages Sent (NEWSFEED_MESSAGES_SENT)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Newsfeed Messages Sent/sec (NEWSFEED_MESSAGES_SENT_SEC)	This is a reserved field; it is not available.	float	No	Not Applicable	--
Newsfeed Outbound Rej Msgs (NEWSFEED_OUTBOUND_REJECTED_MESSAGES)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Number of art index tbl rows exp (NUMBER_OF_ART_INDEX_TABLE_ROWS_EXP)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
POP3 Commands Issued (POP3_COMMANDS_ISSUED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
POP3 Commands Issued Rate (POP3_COMMANDS_ISSUED_RATE)	This is a reserved field; it is not available.	float	No	Not Applicable	--
POP3 Messages Send Rate (POP3_MESSAGES_SEND_RATE)	This is a reserved field; it is not available.	float	No	Not Applicable	--

Exchange Info Store Perf Data (PI_EIPD)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
POP3 Messages Sent (POP3_MESSAGES_SENT)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Peak Push Notifications Cache Sz (PEAK_PUSH_NOTIFICATIONS_CACHE_SIZE)	Amount (in bytes) of data when PUSH notification cache reaches peak size #1, #2	ulong	No	2000	--
Push Notifications Cache Size (PUSH_NOTIFICATIONS_CACHE_SIZE)	Size (in bytes) of the push notification cache size #1, #2	ulong	No	2000	--
Push Notifications Generated/sec (PUSH_NOTIFICATIONS_GEN_PER_SEC)	Rate (num./second) at which notifications to clients with modification notifications were registered in the information store table	float	No	2000	--
Push Notifications Skipped/sec (PUSH_NOTIFICATIONS_SKIPPED_PER_SEC)	Rate (num./second) at which push notifications were skipped due to server caching	float	No	2000	--
RPC Ops/sec (RPC_OPERATIONS_PER_SEC)	Rate (num./second) of RPC operations	float	No	2000	--
RPC Pkts/sec (RPC_PACKETS_PER_SEC)	Rate (num./second) of RPC packet operations	float	No	2000	--
RPC Reqs (RPC_REQUESTS)	Number of client requests processed by the information store #1, #2	ulong	No	2000	--
RPC Reqs Peak (RPC_REQUESTS_PEAK)	Maximum number of client requests processed concurrently by the information store since the information store started #1, #3	ulong	No	2000	--
Read Bytes RPC Clients/sec (READ_BYTES_RPC_CLIENTS_PER_SEC)	Rate (bytes/second) at which data was read from the RPC client	float	No	2000	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000	--
Record Type (INPUT_RECORD_TYPE)	Record name (always EIPD)	char(8)	No	2000	--
Recurring Appt Creation Rate (RECURRING_APPT_CREATION_RATE)	This is a reserved field; it is not available.	float	No	Not Applicable	--
Recurring Appt Deletion Rate (RECURRING_APPT_DELETION_RATE)	This is a reserved field; it is not available.	float	No	Not Applicable	--

Exchange Info Store Perf Data (PI_EIPD)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Recurring Appt Modification Rate (RECURRING_APPT_MODIFICATION_RATE)	This is a reserved field; it is not available.	float	No	Not Applicable	--
Recurring Appts Created (RECURRING_APPTS_CREATED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Recurring Appts Deleted (RECURRING_APPTS_DELETED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Recurring Appts Modified (RECURRING_APPTS_MODIFIED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Recurring Master Appts Expanded (RECURRING_MASTER_APPTS_EXPANDED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Recurring Master Expansion Rate (RECURRING_MASTER_EXPANSION_RATE)	This is a reserved field; it is not available.	float	No	Not Applicable	--
Single Appt Creation Rate (SINGLE_APPT_CREATION_RATE)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Single Appt Deletion Rate (SINGLE_APPT_DELETION_RATE)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Single Appt Modification Rate (SINGLE_APPT_MODIFICATION_RATE)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Single Appts Created (SINGLE_APPTS_CREATED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Single Appts Deleted (SINGLE_APPTS_DELETED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Single Appts Modified (SINGLE_APPTS_MODIFIED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Users (USER_COUNT)	Number of users connected to the information store #1, #2	ulong	No	2000	--
Write Bytes RPC Clients/sec (WRITE_BYTES_RPC_CLIENTS_PER_SEC)	Rate (bytes/second) at which data was written by the RPC client	float	No	2000	--

## 2.8.9 Exchange Info Store Private (PI\_EIPR)

### Function

The Exchange Info Store Private (PI\_EIPR) record stores performance data, taken at specific intervals, about the number of logins to the private information store holding all messages sent to mailboxes and distribution groups, as well as message status and number of queued messages.

The information store is the Microsoft Exchange service database.

### Notes:

- This record is available in a Microsoft Exchange Server 5.5 environment.
- This record is not available in Windows Server 2003 and Windows Server 2003 (IPF).

Table 2.43 Exchange Info Store Private (PI\_EIPR) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

None

### Lifetime

From the Microsoft Exchange Server setup to the modification of its settings.

### Record Size

- Fixed part: 1,025 bytes
- Variable part: 0 bytes

Table 2.44 Exchange Info Store Private (PI\_EIPR) Fields

Exchange Info Store Private (PI_EIPR)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Active Client Logons (ACTIVE_CLIENT_LOGONS)	Number of clients on which some action was executed within 10 minutes before data collection #1, #2	ulong	No	2000	--
Avg Delivery Time (AVERAGE_DELIVERY_TIME)	Average time required to submit the last 10 messages to the information store and to distribute those messages to all receivers on the same server #1, #2	ulong	No	2000	--
Avg Local Delivery Time (AVERAGE_LOCAL_DELIVERY_TIME)	Average time required to submit the last 10 messages to the information store and to MTA #1, #2	ulong	No	2000	--
Categorization Count (CATEGORIZATION_COUNT)	Number of categories for the private information store #1, #2	ulong	No	2000	--
Client Logons (CLIENT_LOGONS)	Number of clients currently logged on (including system processes) #1, #2	ulong	No	2000	--
Folder Opens/sec (FOLDER_OPENS_PER_SEC)	Rate (num./second) of folder open requests submitted to the information store	float	No	2000	--
Folders (NUMBER_OF_FOLDERS)	This field is not supported; its value is always 0.	ulong	No	Not Applicable	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records. For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000	RECORD_TIME (T1) - RECORD_TIME (T0)
Local deliveries (LOCAL_DELIVERIES)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Local delivery rate (LOCAL_DELIVERY_RATE)	This is a reserved field; it is not available.	float	No	Not Applicable	--
Message Opens/sec (MESSAGE_OPENS_PER_SEC)	Rate (num./second) at which message open requests were submitted to the information store	float	No	2000	--

Exchange Info Store Private (PI_EIPR)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Message Recipients Delivered (MESSAGE_RECIPIENTS_DELIVERED)	Number of message recipients since the service started #1, #3	ulong	No	2000	--
Message Recipients Delivered/min (MSG_RECIPIENTS_DELIVERED_PER_MIN)	Rate (num./minute) at which the recipient received messages #1	float	No	2000	--
Messages Delivered (MESSAGES_DELIVERED)	Number of messages distributed to all recipients since the service started #1, #3	ulong	No	2000	--
Messages Delivered/min (MESSAGES_DELIVERED_PER_MIN)	Rate (num./minute) at which messages were delivered to all recipients #1	float	No	2000	--
Messages Sent (MESSAGES_SENT)	Number of messages sent to other storage providers via MTA since the service started #1, #3	ulong	No	2000	--
Messages Sent via POP3/min (MESSAGES_SENT_VIA_POP3_PER_MIN)	This field is not supported; its value is always 0.	float	No	Not Applicable	--
Messages Sent/min (MESSAGES_SENT_PER_MIN)	Rate (num./minute) at which messages were sent to other storage providers via MTA #1	float	No	2000	--
Messages Submitted (MESSAGES_SUBMITTED)	Number of messages submitted by clients since the service started #1, #3	ulong	No	2000	--
Messages Submitted/min (MESSAGES_SUBMITTED_PER_MIN)	Rate (num./minute) at which messages were submitted by clients #1	float	No	2000	--
POP3 Messages Sent (POP3_MESSAGES_SENT)	This field is not supported; its value is always 0.	ulong	No	Not Applicable	--
Peak Client Logons (PEAK_CLIENT_LOGONS)	Maximum number of clients logged on concurrently since the service started #1, #2	ulong	No	2000	--
Receive Queue Size (RECEIVE_QUEUE_SIZE)	Number of messages in the private information store's receive queue #1, #2	ulong	No	2000	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000	--
Record Type (INPUT_RECORD_TYPE)	Record name (always EIPR)	char(8)	No	2000	--

Exchange Info Store Private (PI_EIPR)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Send Queue Size (SEND_QUEUE_SIZE)	Number of messages in the private information store's send queue #1, #2	ulong	No	2000	--
Single Instance Ratio (SINGLE_INSTANCE_RATIO)	Average number of references to individual messages held in the private information store #1, #2	ulong	No	2000	--
Total Count of Recoverable Items (TOTAL_COUNT_OF_RECOVERABLE_ITEMS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Total Size of Recoverable Items (TOTAL_SIZE_OF_RECOVERABLE_ITEMS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--

## 2.8.10 Exchange Info Store Public (PI\_EIPU)

### Function

The Exchange Info Store Public (PI\_EIPU) record stores performance data, taken at specific intervals, about the number of logins to the public information store holding information stored in public folders, as well as message status and copying status of messages at other servers and in public folders.

The information store is the Microsoft Exchange service database.

### Notes:

- This record is available in a Microsoft Exchange Server 5.5 environment.
- This record is not available in Windows Server 2003 and Windows Server 2003 (IPF).

Table 2.45 Exchange Info Store Public (PI\_EIPU) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

None

### Lifetime

From the Microsoft Exchange Server setup to the modification of its settings.

### Record Size

- Fixed part: 1,317 bytes
- Variable part: 0 bytes

Table 2.46 Exchange Info Store Public (PI\_EIPU) Fields

Exchange Info Store Public (PI_EIPU)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Active Client Logons (ACTIVE_CLIENT_LOGONS)	Number of clients on which some action was executed within 10 minutes before data collection #1, #2	ulong	No	2000	--
Avg Time for Delivery (AVERAGE_TIME_FOR_DELIVERY)	Average time required to submit the last 10 messages to the information store and to MTA #1, #2	ulong	No	2000	--
Avg Time for Local Delivery (AVERAGE_TIME_FOR_LOCAL_DELIVERY)	Average time required to submit the last 10 messages to the information store and distribute them to all recipients at the same server #1, #2	ulong	No	2000	--
Categorization Count (CATEGORIZATION_COUNT)	Number of categories for the private information store #1, #2	ulong	No	2000	--
Client Logons (CLIENT_LOGONS)	Number of clients logged on (including system processes) #1, #2	ulong	No	2000	--
Folder Opens/sec (FOLDER_OPENS_PER_SEC)	Rate (num./second) of folder open requests submitted to the information store	float	No	2000	--
Folders (NUMBER_OF_FOLDERS)	This field is not supported; its value is always 0.	ulong	No	Not Applicable	--
HTTP/DEV Curr Pend Notification (HTTP_PER_DEV_CURR_PEND_NOTIFICATION)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
HTTP/DEV Curr Subscriptions (HTTP_PER_DEV_CURR_SUBSCRIPTIONS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
HTTP/DEV Curr Trans Locks (HTTP_PER_DEV_CURR_TRANS_LOCKS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
HTTP/DEV Notify Requests/sec (HTTP_PER_DEV_NOTIFY_REQ_PER_SEC)	This is a reserved field; it is not available.	float	No	Not Applicable	--

Exchange Info Store Public (PI_EIPU)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
HTTP/DEV Total Locks Created (HTTP_PER_DEV_TOTAL_LOCKS_CREATED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
HTTP/DEV Total Notify Requests (HTTP_PER_DEV_TOTAL_NOTIFY_REQUESTS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
HTTP/DEV Total Subs Created (HTTP_PER_DEV_TOTAL_SUBS_CREATED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
HTTP/DEV Total Subs Expired (HTTP_PER_DEV_TOTAL_SUBS_EXPIRED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Inbound Rejected Messages/min (NEWSFEED_INBOUND_REJ_MSGS_PER_MIN)	This field is not supported; its value is always 0.	float	No	Not Applicable	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000	RECORD_TIME (T1) - RECORD_TIME (T0)
Message Opens/sec (MESSAGE_OPENS_PER_SEC)	Rate (num./second) of message open requests submitted to the information store	float	No	2000	--
Message Recipients Delivered (MESSAGE_RECIPIENTS_DELIVERED)	Number of message recipients since the service started #1, #3	ulong	No	2000	--
Message Recipients Delivered/min (MSG_RECIPIENTS_DELIVERED_PER_MIN)	Rate (num./minute) at which recipients received messages #1	float	No	2000	--
Messages Delivered (MESSAGES_DELIVERED)	Number of messages distributed to all recipients since the service started #1, #3	ulong	No	2000	--
Messages Delivered/min (MESSAGES_DELIVERED_PER_MIN)	Rate (num./minute) at which messages were distributed to all recipients #1	float	No	2000	--

Exchange Info Store Public (PI_EIPU)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Messages Rcvd/min (NEWSFEED_MESSAGES_RECEIVED_PER_MIN)	This field is not supported; its value is always 0.	float	No	Not Applicable	--
Messages Sent (MESSAGES_SENT)	Number of messages sent to other storage providers via MTA since the service started #1, #3	ulong	No	2000	--
Messages Sent/min (MESSAGES_SENT_PER_MIN)	Rate (num./minute) at which messages were sent to other storage providers via MTA #1	float	No	2000	--
Messages Submitted (MESSAGES_SUBMITTED)	Number of messages submitted by clients since the service started #1, #3	ulong	No	2000	--
Messages Submitted/min (MESSAGE_SUBMITTED_PER_MIN)	Rate (num./minute) at which messages were submitted by clients #1	float	No	2000	--
NNTP Current Outbound Conns (NNTP_CURRENT_OUTBOUND_CONNECTIONS)	This field is not supported; its value is always 0.	ulong	No	Not Applicable	--
NNTP Failed Posts (NNTP_FAILED_POSTS)	This field is not supported; its value is always 0.	ulong	No	Not Applicable	--
NNTP Failed Posts/min (NNTP_FAILED_POSTS_PER_MIN)	This field is not supported; its value is always 0.	float	No	Not Applicable	--
NNTP Messages Posted (NNTP_MESSAGES_POSTED)	This field is not supported; its value is always 0.	ulong	No	Not Applicable	--
NNTP Messages Posted/min (NNTP_MESSAGES_POSTED_PER_MIN)	This field is not supported; its value is always 0.	float	No	Not Applicable	--
NNTP Messages Read (NNTP_MESSAGES_READ)	This field is not supported; its value is always 0.	ulong	No	Not Applicable	--
NNTP Messages Read/min (NNTP_MESSAGES_READ_PER_MIN)	This field is not supported; its value is always 0.	float	No	Not Applicable	--
NNTP Outbound Conns (NNTP_OUTBOUND_CONNECTIONS)	This field is not supported; its value is always 0.	ulong	No	Not Applicable	--

Exchange Info Store Public (PI_EIPU)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Newsfeed Bytes Sent (NEWSFEED_BYTES_SENT)	This field is not supported; its value is always 0.	double	No	Not Applicable	--
Newsfeed Bytes Sent/sec (NEWSFEED_BYTES_SENT_PER_SEC)	This field is not supported; its value is always 0.	float	No	Not Applicable	--
Newsfeed In Rejected Messages (NEWSFEED_INBOUND_REJECTED_MESSAGES)	This field is not supported; its value is always 0.	ulong	No	Not Applicable	--
Newsfeed Messages Rcvd (NEWSFEED_MESSAGES_RECEIVED)	This field is not supported; its value is always 0.	ulong	No	Not Applicable	--
Newsfeed Messages Sent (NEWSFEED_MESSAGES_SENT)	This field is not supported; its value is always 0.	ulong	No	Not Applicable	--
Newsfeed Messages Sent/sec (NEWSFEED_MESSAGES_SENT_PER_SEC)	This field is not supported; its value is always 0.	float	No	Not Applicable	--
Newsfeed Out Rejected Messages (NEWSFEED_OUTBOUND_REJECTED_MSGS)	This field is not supported; its value is always 0.	ulong	No	Not Applicable	--
Number of msgs exp frm pub folds (NUMBER_OF_MSG_EXP_FROM_PUBLIC_FOLD)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Peak Client Logons (PEAK_CLIENT_LOGONS)	Maximum number of clients logged on at any time since the service started #1, #3	ulong	No	2000	--
Receive Queue Size (RECEIVE_QUEUE_SIZE)	Number of messages in the public information store's receive queue #1, #2	ulong	No	2000	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000	--
Record Type (INPUT_RECORD_TYPE)	Record name (always EIPU)	char (8)	No	2000	--

Exchange Info Store Public (PI_EIPU)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Replic Backfill Data Msgs Rcvd (REPLICATION_BACKFILL_DATA_MSGS_REC)	Number of replicated messages received as a response to another server's backfill request since the service started #1, #3	ulong	No	2000	--
Replic Backfill Data Msgs Sent (REPLICATION_BACKFILL_DATA_MSG_SENT)	Number of replicated messages send from another server as a response to a backfill request since the service started #1, #3	ulong	No	2000	--
Replic Backfill Reqs Rcvd (REPLICATION_BACKFILL_REQS_RECEIVED)	Number of replicated backfill request messages sent to another server since the service started #1, #3	ulong	No	2000	--
Replic Backfill Reqs Sent (REPLICATION_BACKFILL_REQ_SENT)	Number of replicated backfill request messages sent to another server since the service started #1, #3	ulong	No	2000	--
Replic Folder Changes Rcvd (REPLICATION_FOLDER_CHANGES_REC)	Number of folder changes replicated by another server since the service started #1, #3	ulong	No	2000	--
Replic Folder Changes Sent (REPLICATION_FOLDER_CHANGES_SENT)	Number of duplicate messages sent since the service started to other servers for the purpose of modification to the public folder hierarchical structure #1, #3	ulong	No	2000	--
Replic Folder Data Msgs Rcvd (REPLICATION_FOLDER_DATA_MSGS_REC)	Number of duplicate messages received since the service started from other servers for the purpose of modification to items in the public folder #1, #3	ulong	No	2000	--
Replic Folder Data Msgs Sent (REPLICATION_FOLDER_DATA_MSGS_SENT)	Number of duplicate messages sent since the service started to other servers for the purpose of modification to the public folder hierarchical structure #1, #3	ulong	No	2000	--

Exchange Info Store Public (PI_EIPU)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Replic Folder Tree Msgs Rcvd (REPLICATION_FOLDER_TREE_MSGS_REC)	Number of duplicate messages received from another server since the service started due to changes to the public folder hierarchy structure #1, #3	ulong	No	2000	--
Replic Folder Tree Msgs Sent (REPLICATION_FOLDER_TREE_MSGS_SENT)	Number of duplicate messages sent since the service started to other servers for the purpose of modification to the public folder hierarchical structure #1, #3	ulong	No	2000	--
Replic Message Changes Rcvd (REPLICATION_MSG_CHANGES_RECEIVED)	Number of changes to the items in the public folder that were received from another server since the service started #1, #3	ulong	No	2000	--
Replic Message Changes Sent (REPLICATION_MESSAGE_CHANGES_SENT)	Number of changes to the items in the public folder that were replicated by another server since the service started #1, #3	ulong	No	2000	--
Replic Messages Rcvd (REPLICATION_MESSAGES_RECEIVED)	Number of replicated messages received from another server since the service started #1, #3	ulong	No	2000	--
Replic Messages Sent (REPLICATION_MESSAGES_SENT)	Number of replicated messages sent to another server since the service started #1, #3	ulong	No	2000	--
Replic Status Messages Rcvd (REPLICATION_STATUS_MSGS_RECEIVED)	Number of status replication requests or response messages received from another server since the service started #1, #3	ulong	No	2000	--
Replic Status Messages Sent (REPLICATION_STATUS_MESSAGES_SENT)	Number of status replication requests or response messages sent to another server since the service started #1, #3	ulong	No	2000	--

Exchange Info Store Public (PI_EIPU)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Replication Receive Queue Size (REPLICATION_RECEIVE_QUEUE_SIZE)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Send Queue Size (SEND_QUEUE_SIZE)	Number of messages in the public information store's send queue #1, #2	ulong	No	2000	--
Single Instance Ratio (SINGLE_INSTANCE_RATIO)	Average number of references to each message in the public information store #1, #2	float	No	2000	--
Total Count of Recoverable Item (TOTAL_COUNT_OF_RECOVERABLE_ITEMS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Total Size of Recoverable Item (TOTAL_SIZE_OF_RECOVERABLE_ITEMS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--

## 2.8.11 Exchange Internet Mail Service (PI\_EIMS)

### Function

The Exchange Internet Mail Service (PI\_EIMS) record stores performance data, taken at specific intervals, about Internet mail services used to send mail from clients that use an API such as MAPI, and to connect to SMTP systems.

### Notes:

- This record is available in a Microsoft Exchange Server 5.5 environment.
- This record is not available in Windows Server 2003 and Windows Server 2003 (IPF).

Table 2.47 Exchange Internet Mail Service (PI\_EIMS) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

None

### Lifetime

From the Microsoft Exchange Server setup to the modification of its settings.

### Record Size

- Fixed part: 1,169 bytes
- Variable part: 0 bytes

Table 2.48 Exchange Internet Mail Service (PI\_EIMS) Fields

Exchange Internet Mail Service (PI_EIMS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Bytes Queued MTS-IN (BYTES_QUEUED_MTS_IN)	Size (in bytes) of message converted by Internet Mail and waiting for final distribution in Microsoft Exchange Server #1, #2	ulong	No	2000	--
Bytes Queued MTS-OUT (BYTES_QUEUED_MTS_OUT)	Size (in bytes) of messages to be converted to Internet Mail format #1, #2	ulong	No	2000	--

Exchange Internet Mail Service (PI_EIMS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Conns Inbound (CONNECTIONS_INBOUND)	Number of SMTP connections established by other SMTP hosts to the Internet Mail Service #1, #2	ulong	No	2000	--
Conns Outbound (CONNECTIONS_OUTBOUND)	Number of SMTP connections established by the Internet Mail Service to other SMTP hosts #1, #2	ulong	No	2000	--
Conns Total Failed (CONNECTIONS_TOTAL_FAILED)	Number of SMTP connections that Internet Mail Service attempted unsuccessfully to establish with another host since Internet Mail Service started #1, #2	ulong	No	2000	--
Conns Total Inbound (CONNECTIONS_TOTAL_INBOUND)	Number of SMTP connections that Internet Mail Service received from another host since Internet Mail Service started #1, #2	ulong	No	2000	--
Conns Total Outbound (CONNECTIONS_TOTAL_OUTBOUND)	Number of successful SMTP connections that Internet mail Service established since Internet Mail Service started #1, #2	ulong	No	2000	--
Conns Total Rejected (CONNECTIONS_TOTAL_REJECTED)	Number of SMTP connections from other hosts rejected by Internet Mail Service since startup #1, #2	ulong	No	2000	--
Inbound Bytes Total (INBOUND_BYTES_TOTAL)	This field is not supported; its value is always 0.	double	No	Not Applicable	--
Inbound Bytes/hr (INBOUND_BYTES_PER_HR)	Rate (bytes/hour) at which data was transferred to Microsoft Exchange Server #1	double	No	2000	--
Inbound Conns/hr (INBOUND_CONNECTIONS_PER_HR)	Rate (num./hour) at which inbound connections were received #1	float	No	2000	--
Inbound Messages Total (INBOUND_MESSAGES_TOTAL)	Number of Internet messages distributed to Microsoft Exchange Server #1, #2	ulong	No	2000	--
Inbound Messages/hr (INBOUND_MESSAGES_PER_HR)	Rate (num./hour) at which messages were transferred to Microsoft Exchange Server #1	float	No	2000	--

Exchange Internet Mail Service (PI_EIMS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000	RECORD_TIME (T1) - RECORD_TIME (T0)
Messages Entering MTS-IN (MESSAGES_ENTERING_MTS_IN)	Rate (num./hour) at which messages were moved to the MTS-IN folder following conversion from Internet Mail format #1, #2	ulong	No	2000	--
Messages Entering MTS-OUT (MESSAGES_ENTERING_MTS_OUT)	Rate (num./hour) at which messages were moved to the Internet Mail Service MTS-OUT folder for conversion to Internet Mail format #1, #2	ulong	No	2000	--
Messages Leaving MTS-OUT (MESSAGES_LEAVING_MTS_OUT)	Rate (num./hour) at which messages were stored in the outgoing queue #1, #2	ulong	No	2000	--
NDRs Total Inbound (NDRS_TOTAL_INBOUND)	Number of NDRs created for outgoing mail #1, #2	ulong	No	2000	--
NDRs Total Outbound (NDRS_TOTAL_OUTBOUND)	Number of NDRs created for incoming mail #1, #2	ulong	No	2000	--
Outbound Bytes Total (OUTBOUND_BYTES_TOTAL)	This field is not supported; its value is always 0.	double	No	Not Applicable	--
Outbound Bytes/hr (OUTBOUND_BYTES_PER_HOUR)	Rate (bytes/hour) of data transferred to the Internet #1	double	No	2000	--
Outbound Conns/hr (OUTBOUND_CONNECTIONS_PER_HOUR)	Rate (num./hour) of outbound connections #1	float	No	2000	--
Outbound Messages Total (OUTBOUND_MESSAGES_TOTAL)	Number of messages distributed to the destination #1, #2	ulong	No	2000	--
Outbound Messages/hr (OUTBOUND_MESSAGES_PER_HOUR)	Rate (num./hour) at which messages were transferred to the Internet #1	float	No	2000	--

Exchange Internet Mail Service (PI_EIMS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Queued Inbound (QUEUED_INBOUND)	Number of messages that Microsoft Exchange Server received from Internet #1, #2	ulong	No	2000	--
Queued MTS-IN (QUEUED_MTS_IN)	Number of messages waiting for final distribution at Microsoft Exchange Server #1, #2	ulong	No	2000	--
Queued MTS-OUT (QUEUED_MTS_OUT)	Number of messages to be converted to Internet Mail format #1, #2	ulong	No	2000	--
Queued Outbound (QUEUED_OUTBOUND)	Number of messages from Microsoft Exchange Server that were queued for distribution to Internet #1, #2	ulong	No	2000	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000	--
Record Type (INPUT_RECORD_TYPE)	Record name (always EIMS)	char(8)	No	2000	--
Total Failed Conversions (TOTAL_FAILED_CONVERSIONS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Total Inbound Kilobytes (TOTAL_INBOUND_KILOBYTES)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Total Inbound Recipients (TOTAL_INBOUND_RECIPIENTS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Total Kilobytes Queued (TOTAL_KILOBYTES_QUEUED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Total Loops Detected (TOTAL_LOOPS_DETECTED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Total Messages Queued (TOTAL_MESSAGES_QUEUED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Total Outbound Kilobytes (TOTAL_OUTBOUND_KILOBYTES)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Total Outbound Recipients (TOTAL_OUTBOUND_RECIPIENTS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--

Exchange Internet Mail Service (PI_EIMS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Total Recipients Queued (TOTAL_RECIPIENTS_QUEUED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Total Successful Conversions (TOTAL_SUCCESSFUL_CONVERSIONS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--

## 2.8.12 Exchange Internet Protocols (PI\_EINP)

### Function

The Exchange Internet Protocols (PI\_EINP) record stores performance data, taken at specific intervals, about the number of clients connected to Microsoft Exchange Internet protocols (HTTP, LDAP, NNTP, POP3, IMAP4 and SMTP), as well as the status of transmission and reception queues. This is a multi-instance record.

### Notes:

- This record is available in a Microsoft Exchange Server 5.5 environment.
- This record is not available in Windows Server 2003 and Windows Server 2003 (IPF).

Table 2.49 Exchange Internet Protocols (PI\_EINP) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

Instance (INSTANCE)

### Lifetime

From the Microsoft Exchange Server setup to the modification of its settings.

### Record Size

- Fixed part: 681 bytes
- Variable part: 444 bytes

Table 2.50 Exchange Internet Protocols (PI\_EINP) Fields

Exchange Internet Protocols (PI_EINP)					
View Name (Manager Name)	Description	Format	Delta	Supported Version	Data Source
Active Conns (ACTIVE_CONNECTIONS)	Number of active connections #1, #2	ulong	No	2000	--
Bytes Rcvd (BYTES_RECEIVED)	Amount (in bytes) of data received by the server from clients #1, #2	ulong	No	2000	--

Exchange Internet Protocols (PI_EINP)					
View Name (Manager Name)	Description	Format	Delta	Supported Version	Data Source
Bytes Rcvd/sec (BYTES_RECEIVED_PER_SEC)	Rate (bytes/second) at which data was received by the server from clients	float	No	2000	--
Bytes Sent (BYTES_SENT)	Number of bytes sent from the server to clients #1, #2	ulong	No	2000	--
Bytes Sent/sec (BYTES_SENT_PER_SEC)	Rate (bytes/second) at which the server sent data to clients	float	No	2000	--
Incoming Queue Length (INCOMING_QUEUE_LENGTH)	Number of unprocessed requests from clients #1, #2	ulong	No	2000	--
Incoming Queue Size (INCOMING_QUEUE_SIZE)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Instance (INSTANCE)	Internet protocol name (such as POP3)	string (256)	No	2000	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. Where summarized in a historical report, the last value stored is displayed.	ulong	No	2000	RECORD_TIME (T1) - RECORD_TIME (T0)
Interval2 (INTERVAL2)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000	RECORD_TIME (T1) - RECORD_TIME (T0)
Outgoing Queue Length (OUTGOING_QUEUE_LENGTH)	Number of buffer sectors to be sent to clients #1, #2	ulong	No	2000	--
Outgoing Queue Size (OUTGOING_QUEUE_SIZE)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Outstanding Commands (OUTSTANDING_COMMANDS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Peak Conns (PEAK_CONNECTIONS)	Maximum number of parallel connections #1, #2	ulong	No	2000	--

Exchange Internet Protocols (PI_EINP)					
View Name (Manager Name)	Description	Format	Delta	Supported Version	Data Source
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000	--
Record Type (INPUT_RECORD_TYPE)	Record name (always EINP)	char(8)	No	2000	--
Total Commands (TOTAL_COMMANDS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Total Conns (TOTAL_CONNECTIONS)	Number of connections established since the service started. #1, #3	ulong	No	2000	--

## 2.8.13 Exchange MSMail Conn Interchange (PI\_EMCI)

### Function

The Exchange MSMail Conn Interchange (PI\_EMCI) record stores performance data, taken at specific intervals, about Microsoft Mail Connector Interchange, which is the Microsoft Mail Connector component used for mail transmission between Microsoft Exchange Server and Microsoft Mail (PC) Post Office.

### Notes:

- This record is available in a Microsoft Exchange Server 5.5 environment.
- This record is not available in Windows Server 2003 and Windows Server 2003 (IPF).

Table 2.51 Exchange MSMail Conn Interchange (PI\_EMCI) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

None

### Lifetime

From the Microsoft Exchange Server setup to the modification of its settings.

### Record Size

- Fixed part: 753 bytes
- Variable part: 0 bytes

Table 2.52 Exchange MSMail Conn Interchange (PI\_EMCI) Fields

Exchange MSMail Conn Interchange (PI_EMCI)					
View Name (Manager Name)	Description	Format	Delta	Supported Version	Data Source
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000	RECORD_T IME (T1) - RECORD_T IME (T0)
Kbytes Rcvd/hr (KILOBYTES_RECEIVED_ PER_HR)	Rate (kilobytes/hour) at which data was uploaded from Microsoft Mail Connector Interchange to Microsoft Exchange Server. #1	float	No	2000	--
Kbytes Sent/hr (KILOBYTES_SENT_PER_ HR)	Rate (kilobytes/hour) at which data was downloaded from Microsoft Exchange Server to Microsoft Mail Connector Interchange #1	float	No	2000	--
Messages Rcvd (MESSAGES_RECEIVED)	Number of messages uploaded to Microsoft Exchange Server since Microsoft Mail Connector Interchange started #1, #3	ulong	No	2000	--
Messages Rcvd/hr (MESSAGES_RECEIVED_P ER_HR)	Rate (num./hour) at which messages were uploaded from Microsoft Mail Connector Interchange to Microsoft Exchange Server #1	float	No	2000	--
Messages Sent (MESSAGES_SENT)	Number of messages downloaded from Microsoft Exchange Server since Microsoft Mail Connector Interchange started #1, #3	ulong	No	2000	--
Messages Sent/hr (MESSAGES_SENT_PER_H R)	Rate (num./hour) at which messages were downloaded from Microsoft Exchange Server to Microsoft Mail Connector Interchange #1	float	No	2000	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000	--
Record Type (INPUT_RECORD_TYPE)	Record name (always EMCI)	char (8 )	No	2000	--

## 2.8.14 Exchange MSMail Conn PC MTA Srv (PI\_EMST)

### Function

The Exchange MSMail Conn PC MTA Srv (PI\_EMST) record stores performance data, taken at specific intervals, about Microsoft Mail Connector (PC) MTA, which is the Microsoft Mail Connector component used for mail transmission between Microsoft Exchange Server and Microsoft Mail (PC) Post Office.

### Notes:

- This record is available in a Microsoft Exchange Server 5.5 environment.
- This record is not available in Windows Server 2003 and Windows Server 2003 (IPF).

Table 2.53 Exchange MSMail Conn PC MTA Srv (PI\_EMST) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

None

### Lifetime

From the Microsoft Exchange Server setup to the modification of its settings.

### Record Size

- Fixed part: 953 bytes
- Variable part: 0 bytes

Table 2.54 Exchange MSMail Conn PC MTA Srv (PI\_EMST) Fields

Exchange MSMail Conn PC MTA Srv (PI_EMST)					
View Name (Manager Name)	Description	Format	Delta	Supported Version	Data Source
File Contentions/hr (FILE_CONTENTIONS_PER_HR)	Rate (num./hour) at which file processing failures were caused by contention #1	float	No	2000	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000	RECORD_TIME (T1) - RECORD_TIME (T0)
Kbytes Rcvd/hr (KILOBYTES_RECEIVED_PER_HR)	Rate (kilobytes/hour) at which Microsoft Exchange Server received data #1	float	No	2000	--
Kbytes Sent/hr (KILOBYTES_SENT_PER_HR)	Rate (kilobytes/hour) at which Microsoft Exchange Server sent data #1	float	No	2000	--
LAN/WAN Failed Conns (LAN_OR_WAN_FAILED_CONNECTIONS)	Number of times the LAN or WAN connection failed #1, #2	float	No	2000	--
LAN/WAN Kbytes Moved/hr (LAN_OR_WAN_KILOBYTES_MOVED_PER_HR)	Rate (kilobytes/hour) at which data was moved by LAN or WAN messages #1	float	No	2000	--
LAN/WAN Messages Moved/hr (LAN_OR_WAN_MESSAGES_MOVED_PER_HR)	Rate (num./hour) at which LAN or WAN messages were moved #1	float	No	2000	--
Messages Moved (MESSAGES_MOVED)	Number of messages moved by Microsoft Mail Connector (PC) MTA #1, #2	ulong	No	2000	--
Messages Rcvd (MESSAGES_RECEIVED)	Number of messages received by Microsoft Mail Connector (PC) MTA #1, #2	ulong	No	2000	--
Messages Rcvd/hr (MESSAGES_RECEIVED_PER_HR)	Rate (num./hour) at which messages were received by Microsoft Exchange Server #1, #2	float	No	2000	--

Exchange MSMail Conn PC MTA Srv (PI_EMST)					
View Name (Manager Name)	Description	Format	Delta	Supported Version	Data Source
Messages Sent (MESSAGES_SENT)	Rate (num./hour) at which messages were sent by Microsoft Mail Connector (PC) MTA #1, #2	ulong	No	2000	--
Messages Sent/hr (MESSAGES_SENT_PER_HR)	Rate (num./hour) at which messages were sent by Microsoft Exchange Server #1, #2	float	No	2000	--
Polling Cycles/hr (POLLING_CYCLES_PER_HR)	Rate (num./hour) at which polling cycles were generated #1	float	No	2000	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000	--
Record Type (INPUT_RECORD_TYPE)	Record name (always EMST)	char(8)	No	2000	--
X.25/Async Failed Conns (X25_PER_ASYNC_FAILED_CONNECTIONS)	Number of times X.25 or asynchronous connection failed #1	float	No	2000	--
X.25/Async Kbytes Moved In/hr (X25_ASYNC_KBYTES_MOVED_IN_PER_HR)	Rate (kilobytes/hour) at which data was received as X.25 or asynchronous messages #1	float	No	2000	--
X.25/Async Kbytes Moved Out/hr (X25_ASYNC_KBYTES_MOVED_OUT_PER_HR)	Rate (kilobytes/hour) at which data was sent as X.25 or asynchronous messages #1	float	No	2000	--
X.25/Async Messages Moved In/hr (X25_ASYNC_MSGS_IN_PER_HR)	Rate (num./hour) at which X.25 or asynchronous messages were received #1	float	No	2000	--
X.25/Async Messages Moved Out/hr (X25_ASYNC_MSGS_OUT_PER_HR)	Rate (num./hour) at which X.25 or asynchronous messages were sent #1	float	No	2000	--

## 2.8.15 Exchange MTA Connections (PI\_EMTC)

### Function

The Exchange MTA Connections (PI\_EMTC) record stores performance data, taken at specific intervals, about the number of messages sent or received between the message transfer agent (MTA) and connected entities (such as Internet Mail Connector, Private MDB and Public MDB), as well as connection speed and queue status. This is a multi-instance record.

### Notes:

- This record is available in a Microsoft Exchange Server 5.5 or Microsoft Exchange 2000 Server environment.
- This record is not available in Windows Server 2003 and Windows Server 2003 (IPF).

Table 2.55 Exchange MTA Connections (PI\_EMTC) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

Instance (INSTANCE)

### Lifetime

From the Microsoft Exchange Server setup to the modification of its settings.

### Record Size

- Fixed part: 681 bytes
- Variable part: 640 bytes

Table 2.56 Exchange MTA Connections (PI\_EMTC) Fields

Exchange MTA Connections (PI_EMTC)					
View Name (Manager Name)	Description	Format	Delta	Supported Version	Data Source
Associations (ASSOCIATIONS)	Number of associations between MTA and connected entities #1, #2	ulong	No	2000	--
Connector Index (CONNECTOR_INDEX)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cumulative Inbound Associations (CUMULATIVE_INBOUND_A SSOCIATIONS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cumulative Outbound Associations (CUMULATIVE_OUTBOUND_ ASSOCIATIONS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Current Inbound Associations (CURRENT_INBOUND ASSO CIATIONS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Current Outbound Associations (CURRENT_OUTBOUND ASS OCIATIONS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Failed Outbound Associations (FAILED_OUTBOUND ASSO CIATIONS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Inbound Bytes Total (INBOUND_BYTES_TOTAL)	This is a reserved field; it is not available.	double	No	Not Applicable	--
Inbound Messages Total (INBOUND_MESSAGES_TOT AL)	This is a reserved field; it is not available.	double	No	Not Applicable	--
Inbound Reject Reason (INBOUND_REJECT_REASO N)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Inbound Rejected Total (INBOUND_REJECTED_TOT AL)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Instance (INSTANCE)	Name of the specific entity that was connected to MTA (such as SMTP)	string( 256)	No	2000	--

Exchange MTA Connections (PI_EMTC)					
View Name (Manager Name)	Description	Format	Delta	Supported Version	Data Source
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. Where summarized in a historical report, the last value stored is displayed.	ulong	No	2000	RECORD_TIME (T1) - RECORD_TIME (T0)
Interval2 (INTERVAL2)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000	RECORD_TIME (T1) - RECORD_TIME (T0)
Last Inbound Association (LAST_INBOUND_ASSOCIATION)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Last Outbound Association (LAST_OUTBOUND_ASSOCIATION)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Next Association Retry (NEXT_ASSOCIATION_RETRY)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Oldest Message Queued (OLDEST_MESSAGE_QUEUED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Outbound Bytes Total (OUTBOUND_BYTES_TOTAL)	This is a reserved field; it is not available.	double	No	Not Applicable	--
Outbound Failure Reason (OUTBOUND_FAILURE_REASON)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Outbound Messages Total (OUTBOUND_MESSAGES_TOTAL)	This is a reserved field; it is not available.	double	No	Not Applicable	--
Queue Bytes (QUEUE_BYTES)	This is a reserved field; it is not available.	double	No	Not Applicable	--

Exchange MTA Connections (PI_EMTC)					
View Name (Manager Name)	Description	Format	Delta	Supported Version	Data Source
Queue Length (QUEUE_LENGTH)	Number of unprocessed messages queued for transfer to entities #1. #2	ulong	No	2000	--
Receive Bytes/sec (RECEIVE_BYTES_PER_SEC)	Rate (bytes/second) at which data was received from connected entities.	float	No	2000	--
Receive Messages/sec (RECEIVE_MESSAGES_PER_SEC)	Rate (num./second) of messages received from connected entities	float	No	2000	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000	--
Record Type (INPUT_RECORD_TYPE)	Record name (always EMTC)	char(8)	No	2000	--
Rejected Inbound Associations (REJECTED_INBOUND_ASSOCIATIONS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Send Bytes/sec (SEND_BYTES_PER_SEC)	Rate (bytes/second) at which data was sent from connected entities	float	No	2000	--
Send Messages/sec (SEND_MESSAGES_PER_SEC)	Rate (num./second) of messages sent from connected entities	float	No	2000	--
Total Recipients Inbound (TOTAL_RECIPIENTS_INBOUND)	This is a reserved field; it is not available.	double	No	Not Applicable	--
Total Recipients Outbound (TOTAL_RECIPIENTS_OUTBOUND)	This is a reserved field; it is not available.	double	No	Not Applicable	--
Total Recipients Queued (TOTAL_RECIPIENTS_QUEUED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--

## 2.8.16 Exchange MTA Performance (PI\_EMFTA)

### Function

The Exchange MTA Performance (PI\_EMFTA) record stores performance data, taken at specific intervals, about the number of messages sent or received with the message transfer agent (MTA) via LAN, RAS, and TCP/IP connections, as well as the number of connections and queue status.

The message transfer agent (MTA) is also used for message transmission, distribution and routing to other MTAs, the external X.400 MTA and the gateway.

### Notes:

- This record is available in a Microsoft Exchange Server 5.5 or Microsoft Exchange 2000 Server environment.
- This record is not available in Windows Server 2003 and Windows Server 2003 (IPF).

Table 2.57 Exchange MTA Performance (PI\_EMFTA) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

None

### Lifetime

From the Microsoft Exchange Server setup to the modification of its settings.

### Record Size

- Fixed part: 1,261 bytes
- Variable part: 0 bytes

Table 2.58 Exchange MTA Performance (PI\_EMFTA) Fields

Exchange MTA Performance (PI_EMFTA)					
View Name (Manager Name)	Description	Format	Delta	Supported Version	Data Source
Adjacent MTA Associations (ADJACENT_MTA_ASSOCIATIONS)	Number of open associations an MTA shared with another MTA #1, #2	ulong	No	2000	--
Admin Conns (ADMIN_CONNECTIONS)	Number of Microsoft Exchange Administrator programs connected to MTA #1, #2	ulong	No	2000	--
Admin Interface Receive Bytes/sec (ADMIN_INTERFACE_RECEIVE_BYTES_PER_SEC)	Rate (bytes/second) at which data was received via Administrators connection	float	No	2000	--
Admin Interface Xmit Bytes/sec (ADMIN_INTERFACE_TRANSMITTED_BYTES_PER_SEC)	Rate (bytes/second) at which data was transmitted via Administrators connection	float	No	2000	--
Deferred Delivery Msgs (DEFERRED_DELIVERY_MESSAGES)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Disk File Deletes/sec (DISK_FILE_DELETES_PER_SEC)	Rate (num./second) of disk file deletes	float	No	2000	--
Disk File Opens/sec (DISK_FILE_OPENS_PER_SEC)	Rate (num./second) of disk file opens	float	No	2000	--
Disk File Reads/sec (DISK_FILE_READS_PER_SEC)	Rate (num./second) of disk file reads	float	No	2000	--
Disk File Syncs/sec (DISK_FILE_SYNCS_PER_SEC)	Rate (num./second) of disk file synchronizations	float	No	2000	--
Disk File Writes/sec (DISK_FILE_WRITES_PER_SEC)	Rate (num./second) of disk file writes	float	No	2000	--
ExDS Read Calls/sec (EXDS_READ_CALLS_PER_SEC)	Rate (num./second) of read calls to the directory service	float	No	2000	--

Exchange MTA Performance (PI_EMATA)					
View Name (Manager Name)	Description	Format	Delta	Supported Version	Data Source
Free Elements (FREE_ELEMENTS)	Number of free buffer elements in the MTA pool #1, #2	ulong	No	2000	--
Free Headers (FREE_HEADERS)	Number of free buffer headers in the MTA pool #1, #2	ulong	No	2000	--
Inbound Bytes Total (INBOUND_BYTES_TOTAL)	This is a reserved field; it is not available.	double	No	Not Applicable	--
Inbound Messages Total (INBOUND_MESSAGES_TOTAL)	This is a reserved field; it is not available.	double	No	Not Applicable	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. Where summarized in a historical report, the last value stored is displayed.	ulong	No	2000	RECORD_TIME (T1) - RECORD_TIME (T0)
LAN Receive Bytes/sec (LAN_RECEIVE_BYTES_PER_SEC)	Rate (bytes/second) at which data was received from MTA via LAN.	float	No	2000	--
LAN Xmit Bytes/sec (LAN_TRANSMIT_BYTES_PER_SEC)	Rate (bytes/second) at which data was transmitted to MTA via LAN	float	No	2000	--
Message Bytes/sec (MESSAGE_BYTES_PER_SEC)	Rate (bytes/second) at which message data was processed	float	No	2000	--
Messages/sec (MESSAGES_PER_SEC)	Rate (num./second) of messages	float	No	2000	--
Outbound Bytes Total (OUTBOUND_BYTES_TOTAL)	This is a reserved field; it is not available.	double	No	Not Applicable	--
Outbound Messages Total (OUTBOUND_MESSAGES_TOTAL)	This is a reserved field; it is not available.	double	No	Not Applicable	--
RAS Receive Bytes/sec (RAS_RECEIVE_BYTES_PER_SEC)	Rate (bytes/second) at which data was received via a RAS connection	float	No	2000	--

Exchange MTA Performance (PI_EMATA)					
View Name (Manager Name)	Description	Format	Delta	Supported Version	Data Source
RAS Xmit Bytes/sec (RAS_TRANSMIT_BYTES_PER_SEC)	Rate (bytes/second) at which data was transmitted via a RAS connection	float	No	2000	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000	--
Record Type (INPUT_RECORD_TYPE)	Record name (always EMATA)	char(8)	No	2000	--
TCP/IP Receive Bytes/sec (TCP_PER_IP_RECEIVE_BYTES_PER_SEC)	Rate (bytes/second) at which data was received via a TCP/IP connection	float	No	2000	--
TCP/IP Xmit Bytes/sec (TCP_PER_IP_TRANSMIT_BYTES_PER_SEC)	Rate (bytes/second) at which data was transmitted via a TCP/IP connection	float	No	2000	--
TP4 Receive Bytes/sec (TP4_RECEIVE_BYTES_PER_SEC)	Rate (bytes/second) at which data was received via a TP4 connection	float	No	2000	--
TP4 Xmit Bytes/sec (TP4_TRANSMIT_BYTES_PER_SEC)	Rate (bytes/second) at which data was transmitted via a TP4 connection	float	No	2000	--
Threads In Use (THREADS_IN_USE)	Number of threads being used by MTA, not including RPC threads #1, #2	ulong	No	2000	--
Total Failed Conversions (TOTAL_FAILED_CONVERSIONS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Total Loops Detected (TOTAL_LOOPS_DETECTED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Total Recipients Inbound (TOTAL_RECIPIENTS_INBOUND)	This is a reserved field; it is not available.	double	No	Not Applicable	--
Total Recipients Queued (TOTAL_RECIPIENTS_QUEUED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Total Recipients Outbound (TOTAL_RECIPIENTS_OUTBOUND)	This is a reserved field; it is not available.	double	No	Not Applicable	--

Exchange MTA Performance (PI_EMATA)					
View Name (Manager Name)	Description	Format	Delta	Supported Version	Data Source
Total Successful Conversions (TOTAL_SUCCESSFUL_CONVERSIONS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Work Queue Bytes (WORK_QUEUE_BYTES)	This is a reserved field; it is not available.	double	No	Not Applicable	--
Work Queue Length (WORK_QUEUE_LENGTH)	Number of messages stored in the work queue because they were not completely processed by MTA #1, #2	ulong	No	2000	--
X.25 Receive Bytes/sec (X25_RECEIVE_BYTES_PER_SEC)	Rate (bytes/second) at which data was received via an X.25 connection	float	No	2000	--
X.25 Xmit Bytes/sec (X25_TRANSMIT_BYTES_PER_SEC)	Rate (bytes/second) at which data was transmitted via an X.25 connection	float	No	2000	--
XAPI Clients (XAPI_CLIENTS)	Number of XAPI clients connected to MTA using the XAPI MA/OM interface #1, #2	ulong	No	2000	--
XAPI Gateways (XAPI_GATEWAYS)	Number of gateways connected to MTA using the XAPI MT/OM interface #1, #2	ulong	No	2000	--
XAPI Receive Bytes/sec (XAPI_RECEIVE_BYTES_PER_SEC)	Rate (bytes/second) at which data was received via an XAPI connection	float	No	2000	--
XAPI Xmit Bytes/sec (XAPI_TRANSMIT_BYTES_PER_SEC)	Rate (bytes/second) at which data was transmitted via an XAPI connection	float	No	2000	--

## 2.8.17 Exchange Web Component Overview (PI\_EWEB)

### Function

The Exchange Web Component Overview (PI\_EWEB) record stores performance data, taken at specific intervals, about the number of objects, message bodies and attached files connected via the Web to mailboxes and public folders by clients using Internet protocols.

### Notes:

- This record is available in a Microsoft Exchange Server 5.5 environment.
- This record is not available in Windows Server 2003 and Windows Server 2003 (IPF).

Table 2.59 Exchange Web Component Overview (PI\_EWEB) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

None

### Lifetime

From the Microsoft Exchange Server setup to the modification of its settings.

### Record Size

- Fixed part: 749 bytes
- Variable part: 0 bytes

Table 2.60 Exchange Web Component Overview (PI\_EWEB) Fields

Exchange Web Component Overview (PI_EWEB)					
View Name (Manager Name)	Description	Format	Delta	Supported Version	Data Source
Attachment Bytes Rendered (ATTACHMENT_BYTES_RENDERED)	Amount (in bytes) of all attached files provided #1, #2	double	No	2000	--
Attachments Rendered (ATTACHMENTS_RENDERED)	Number of all attached files provided #1, #2	ulong	No	2000	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000	RECORD _TIME (T1) - RECORD _TIME (T0)
Message Bodies Rendered (MESSAGE_BODIES_RENDERED)	Number of rendered message bodies #1, #2	ulong	No	2000	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000	--
Record Type (INPUT_RECORD_TYPE)	Record name (always EWEB)	char (8)	No	2000	--
Renderer Objects (RENDERER_OBJECTS)	Number of rendered objects during the data collection #1, #2	ulong	No	2000	--

## 2.8.18 FTP Server Service Overview (PI\_FTPM)

### Function

The FTP Server Service Overview (PI\_FTPM) record stores performance data, taken at specific intervals, about the FTP service, which is a component of Microsoft Internet Information Services (IIS).

This record is compatible with changes in methods for reporting FTP service measurement items. This is a multi-instance record.

### Notes:

- This record is supported by IIS Version 5.0 or later.
- This record is not available in Windows Server 2003 (IPF).

Table 2.61 FTP Server Service Overview (PI\_FTPM) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

Instance (INSTANCE)

### Lifetime

From the construction of an FTP site to the modification of its settings.

### Record Size

- Fixed part: 681 bytes
- Variable part: 774 bytes

Table 2.62 FTP Server Service Overview (PI\_FTPM) Fields

FTP Server Service Overview (PI_FTPM)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Bytes Rcvd/sec (BYTES_RECEIVED_PER_SEC)	Rate (bytes/second) at which the FTP service received data	float	No	2000, 2003	--
Bytes Sent/sec (BYTES_SENT_PER_SEC)	Rate (bytes/second) at which the FTP service sent data	float	No	2000, 2003	--
Bytes Total/sec (BYTES_TOTAL_PER_SEC)	Rate (bytes/second) at which the FTP service sent or received data. This value is the sum of the Bytes Sent/sec and Bytes Rcvd/sec fields.	float	No	2000, 2003	--
Conn Attempts (CONN_ATTEMPTS_ALL_INST)	Total number of attempts to connect to the FTP service #1, #2	ulong	No	2000, 2003	TOTAL_CONN_ATTEMPTS_ALL_INST (T1) - TOTAL_CONN_ATTEMPTS_ALL_INST (T0)
Current Anonymous Users (CURRENT_ANONYMOUS_USERS)	Number of anonymous users connected to the FTP service #1, #2	ulong	No	2000, 2003	--
Current Conns (CURRENT_CONNECTIONS)	Number of FTP service connections. This value is the sum of the anonymous and nonanonymous user connections. #1, #2	ulong	No	2000, 2003	--
Current Nonanonymous Users (CURRENT_NONANONYMOUS_USERS)	Number of nonanonymous users who are connected to the FTP service.  Where valid authentication data is returned by the client following rejection of an anonymous connection request, the connection is counted as nonanonymous. #1, #2	ulong	No	2000, 2003	--

FTP Server Service Overview (PI_FTPM)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
FTP Service Uptime (FTP_SERVICE_UPTIME)	This is a reserved field; it is not available	ulong	No	Not Applicable	--
Files Rcvd (FILES_RECEIVED)	Number of files received by the FTP service #2	ulong	No	2000, 2003	TOTAL_FILES_RECEIVED (T1) - TOTAL_FILES_RECEIVED (T0)
Files Sent (FILES_SENT)	Number of files sent by the FTP service #2	ulong	No	2000, 2003	TOTAL_FILES_SENT (T1) - TOTAL_FILES_SENT (T0)
Files Xferd (FILES_TRANSFERRED)	Total number of files transferred (sent or received) by the FTP service. Total value of the Files Sent and Files Rcvd fields. #2	ulong	No	2000, 2003	TOTAL_FILES_TRANSFERRED (T1) - TOTAL_FILES_TRANSFERRED (T0)
Instance (INSTANCE)	FTP Site name	string(526)	No	2000, 2003	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. Where summarized in a historical report, the last value stored is displayed.	ulong	No	2000, 2003	RECORD_TIME (T1) - RECORD_TIME (T0)
Interval2 (INTERVAL2)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000, 2003	RECORD_TIME (T1) - RECORD_TIME (T0)

FTP Server Service Overview (PI_FTPM)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Logon Attempts (LOGON_ATTEMPTS)	Total number of successful logons to the FTP service #1, #2	ulong	No	2000, 2003	TOTAL_LOGON_ATTEMPTS (T1) - TOTAL_LOGON_ATTEMPTS (T0)
Max Anonymous Users (MAXIMUM_ANONYMOUS_USERS)	Maximum number of anonymous users who connected concurrently to the FTP service since the service started #1, #3	ulong	No	2000, 2003	--
Max Conns (MAXIMUM_CONNECTIONS)	Maximum number of concurrent connections to the FTP service since the service started. This value is the sum of the anonymous and nonanonymous user connections. #1, #2	ulong	No	2000, 2003	--
Max Nonanonymous Users (MAXIMUM_NONANONYMOUS_USERS)	Maximum number of nonanonymous users who connected concurrently to the FTP service since the service started.  Where valid authentication data is returned by the client following rejection of an anonymous connection request, the connection is counted as nonanonymous. #1, #3	ulong	No	2000, 2003	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003	--
Record Type (INPUT_RECORD_TYPE)	Record name (always FTPM)	char(8)	No	2000, 2003	--
Total Anonymous Users (TOTAL_ANONYMOUS_USERS)	Total number of anonymous users who connected concurrently to the FTP service since the service started #1, #3	ulong	No	2000, 2003	--

FTP Server Service Overview (PI_FTPM)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Total Conn Attempts (TOTAL_CONN_ATTEMPTS_A LL_INST)	Total number of connection attempts to the FTP service since the service started #1, #3	ulong	No	2000, 2003	--
Total Files Rcvd (TOTAL_FILES_RECEIVED)	Total number of files received by the FTP service since the service started #1, #3	ulong	No	2000, 2003	--
Total Files Sent (TOTAL_FILES_SENT)	Total number of files sent by the FTP service since the service started #1, #3	ulong	No	2000, 2003	--
Total Files Xferd (TOTAL_FILES_TRANSFERR ED)	Total number of files transferred (sent or received) by the FTP service since the service started. Total value of the Total Files Sent and Total Files Rcvd fields. #1, #3	ulong	No	2000, 2003	--
Total Logon Attempts (TOTAL_LOGON_ATTEMPTS)	Total number of successful logons to the FTP service since the service started #1, #3	ulong	No	2000, 2003	--
Total Nonanonymous Users (TOTAL_NONANONYMOUS_US ERS)	Total number of nonanonymous users who connected concurrently to the FTP service since the service started. Where valid authentication data is returned by the client following rejection of an anonymous connection request, the connection is counted as nonanonymous. #1, #3	ulong	No	2000, 2003	--

## 2.8.19 ICMP Overview (PI\_ICMP)

### Function

The ICMP Overview (PI\_ICMP) record stores performance data, taken at specific intervals, about the rate of ICMP messages sent or received by systems using ICMP protocols, as well as the number of each type of ICMP errors.

*Note:* This record is not available in Windows Server 2003 (IPF).

Table 2.63 ICMP Overview (PI\_ICMP) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

None

### Lifetime

None

### Record Size

- Fixed part: 1,113 bytes
- Variable part: 0 bytes

Table 2.64 ICMP Overview (PI\_ICMP) Fields

ICMP Overview (PI_ICMP)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000, 2003	RECORD_TIME (T1) - RECORD_TIME (T0)
Messages Outbound Errors (MESSAGES_OUTBOUND_ERRORS)	Number of ICMP messages not sent due to internal ICMP problem, such as insufficient buffers #1, #2	ulong	No	2000, 2003	--
Messages Rcvd Errors (MESSAGES_RECEIVED_ERRORS)	Number of ICMP messages received but determined to be erroneous #1, #2	ulong	No	2000, 2003	--
Messages Rcvd/sec (MESSAGES_RECEIVED_PER_SEC)	Rate (num./second) of received ICMP messages.  This field includes messages that develop errors during reception.	float	No	2000, 2003	--
Messages Sent/sec (MESSAGES_SENT_PER_SEC)	Rate (num./second) of sent ICMP messages.  This field includes messages that develop errors during transmission.	float	No	2000, 2003	--
Messages/sec (MESSAGES_PER_SEC)	Rate (num./second) of sent or received ICMP messages.  This field includes messages that develop errors during transmission/reception.	float	No	2000, 2003	--
Rcvd Address Mask (RECEIVED_ADDRESS_MASK)	Number of ICMP address mask request messages received #1, #2	ulong	No	2000, 2003	--
Rcvd Address Mask Reply (RECEIVED_ADDRESS_MASK_REPLY)	Number of ICMP address mask response messages received #1, #2	ulong	No	2000, 2003	--

ICMP Overview (PI_ICMP)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Rcvd Destination Unreachable (RECEIVED_DEST_UNREACHABLE)	Number of ICMP destination unreachable messages received #1, #2	ulong	No	2000, 2003	--
Rcvd Echo Reply/sec (RECEIVED_ECHO_REPLY_PER_SEC)	Rate (num./second) at which ICMP echo reply messages were received	float	No	2000, 2003	--
Rcvd Echo/sec (RECEIVED_ECHO_PER_SEC)	Rate (num./second) at which ICMP echo messages were received	float	No	2000, 2003	--
Rcvd Parameter Problem (RECEIVED_PARAMETER_PROBLEM)	Number of ICMP parameter error messages received #1, #2	ulong	No	2000, 2003	--
Rcvd Redirect/sec (RECEIVED_REDIRECT_PER_SEC)	Rate (num./second) at which ICMP redirect messages were received	float	No	2000, 2003	--
Rcvd Source Quench (RECEIVED_SOURCE_QUENCH)	Number of ICMP source quench messages received #1, #2	ulong	No	2000, 2003	--
Rcvd Time Exceeded (RECEIVED_TIME_EXCEEDED)	Number of ICMP time exceeded messages received #1, #2	ulong	No	2000, 2003	--
Rcvd Timestamp Reply/sec (RECEIVED_TIMESTAMP_REPLY_PER_SEC)	Rate (num./second) at which ICMP timestamp reply messages were received	float	No	2000, 2003	--
Rcvd Timestamp/sec (RECEIVED_TIMESTAMP_PER_SEC)	Rate (num./second) at which ICMP timestamp request messages were received	float	No	2000, 2003	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003	--
Record Type (INPUT_RECORD_TYPE)	Record name (always ICMP)	char(8)	No	2000, 2003	--
Sent Address Mask (SENT_ADDRESS_MASK)	Number of ICMP address mask response messages sent #1, #2	ulong	No	2000, 2003	--

ICMP Overview (PI_ICMP)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Sent Address Mask Reply (SENT_ADDRESS_MASK_REPLY)	Number of ICMP address mask reply messages sent #1, #2	ulong	No	2000, 2003	--
Sent Destination Unreachable (SENT_DESTINATION_UNREACHABLE)	Number of ICMP destination unreachable messages sent #1, #2	ulong	No	2000, 2003	--
Sent Echo Reply/sec (SENT_ECHO_REPLY_PER_SEC)	Rate (num./second) at which ICMP echo reply messages were sent	float	No	2000, 2003	--
Sent Echo/sec (SENT_ECHO_PER_SEC)	Rate (num./second) at which ICMP echo messages were sent	float	No	2000, 2003	--
Sent Parameter Problem (SENT_PARAMETER_PROBLEM)	Number of ICMP parameter error messages sent #1, #2	ulong	No	2000, 2003	--
Sent Redirect/sec (SENT_REDIRECT_PER_SEC)	Rate (num./second) at which ICMP redirect messages were sent	float	No	2000, 2003	--
Sent Source Quench (SENT_SOURCE_QUENCH)	Number of ICMP source quench messages sent #1, #2	ulong	No	2000, 2003	--
Sent Time Exceeded (SENT_TIME_EXCEEDED)	Number of ICMP time exceeded messages sent #1, #2	ulong	No	2000, 2003	--
Sent Timestamp Reply/sec (SENT_TIMESTAMP_REPLY_PER_SEC)	Rate (num./second) at which ICMP timestamp reply messages were sent	float	No	2000, 2003	--
Sent Timestamp/sec (SENT_TIMESTAMP_PER_SEC)	Rate (num./second) at which ICMP timestamp request messages were sent	float	No	2000, 2003	--

## 2.8.20 Internet Info Server Global (PI\_IIS)

### Function

The Internet Info Server Global (PI\_IIS) record stores performance data, taken at specific intervals, about the overall FTP service and the Web service, which are components of Microsoft Internet Information Services (IIS).

### Notes:

- This record is supported by IIS Version 5.0 or later.
- This record is not available in Windows Server 2003 (IPF).

Table 2.65 Internet Info Server Global (PI\_IIS) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

None

### Lifetime

None

### Record Size

- Fixed part: 1,201 bytes
- Variable part: 0 bytes

Table 2.66 Internet Info Server Global (PI\_IIS) Fields

Internet Info Server Global (PI_IIS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Active Flushed Entries (ACTIVE_FLUSHED_ENTRIES)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Async I/O Bandwidth Usage/min (MEASURED_ASYNC_IO_BANDWIDTH_USAGE)	Average asynchronous I/O bandwidth (bytes/minute) used by IIS services.  This field is used to calculate the total volume of user traffic on the server. #1. #2	ulong	No	2000, 2003	--
BLOB Cache Flushes (BLOB_CACHE_FLUSHES)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
BLOB Cache Hits (BLOB_CACHE_HITS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
BLOB Cache Hits % (PCT_BLOB_CACHE_HITS)	This is a reserved field; it is not available.	float	No	Not Applicable	--
BLOB Cache Misses (BLOB_CACHE_MISSES)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cache Flushes (CACHE_FLUSHES)	Total number of times the cache is flushed (time limit expires on part of the memory cache) since the IIS service started #1. #2	ulong	No	2000, 2003	--
Cache Hits (CACHE_HITS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--

Internet Info Server Global (PI_IIS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Cache Hits % (CACHE_HITS_PCT)	This is a reserved field; it is not available.	float	No	Not Applicable	--
Cache Misses (CACHE_MISSES)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cache Size (CACHE_SIZE)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cache Used (CACHE_USED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cached File Handles (CACHED_FILE_HANDLES)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Current BLOBs Cached (CURRENT_BLOBS_CACHED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Current Blocked Async I/O Reqs (CURRENT_BLOCKED_ASYNC_IO_REQUESTS)	Number of requests blocked temporarily due to bandwidth adjustment setting.  Blocked requests are held in the buffer and released if the usable bandwidth increases before the timeout limit expires. #1, #2	ulong	No	2000, 2003	--
Current File Cache Memory Usage (CURRENT_FILE_CACHE_MEMORY_USAGE)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Current Files Cached (CURRENT_FILES_CACHED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--

Internet Info Server Global (PI_IIS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Current URIs Cached (CURRENT_URIS_CACHED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Directory Listings (DIRECTORY_LISTINGS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
File Cache Flushes (FILE_CACHE_FLUSHES)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
File Cache Hits (FILE_CACHE_HITS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
File Cache Hits % (PCT_FILE_CACHE_HITS)	This is a reserved field; it is not available.	float	No	Not Applicable	--
File Cache Misses (FILE_CACHE_MISSES)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000, 2003	RECORD_TIME (T1) - RECORD_TIME (T0)
Maximum File Cache Memory Usage (MAXIMUM_FILE_CACHE_MEMORY_USAGE)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Objects (OBJECTS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--

Internet Info Server Global (PI_IIS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003	--
Record Type (INPUT_RECORD_TYPE)	Record name (always IIS)	char(8 )	No	2000, 2003	--
Total Allowed Async I/O Reqs (TOTAL_ALLOWED_ASYNC_I O_REQUESTS)	Number of user requests allowed since the service started.  Bandwidth adjustment limits the number of user requests allowed. #1, #2	ulong	No	2000, 2003	--
Total BLOB Cached (TOTAL_BLOB_CACHED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Total Blocked Async I/O Reqs (TOTAL_BLOCKED_ASYNC_I O_REQUESTS)	Total number of requests blocked temporarily due to bandwidth adjustment setting since the IIS service started.  Blocked requests are held in the buffer and released if the usable bandwidth increases before the timeout limit expires. #1, #2	ulong	No	2000, 2003	--
Total Files Cached (TOTAL_FILES_CACHED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Total Flushed BLOBs (TOTAL_FLUSHED_BLOBS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--

Internet Info Server Global (PI_IIS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Total Flushed Files (TOTAL_FLUSHED_FILES)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Total Flushed URIs (TOTAL_FLUSHED_URIS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Total Rejected Async I/O Reqs (TOTAL_REJECTED_ASYNC_IO_REQUESTS)	Number of user requests rejected due to bandwidth adjustment setting since the IIS service started.  Unlike blocked requests, rejected requests are not held in the buffer. #1, #2	ulong	No	2000, 2003	--
Total URIs Cached (TOTAL_URIS_CACHED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
URI Cache Hits (URI_CACHE_HITS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
URI Cache Hits % (PCT_URI_CACHE_HITS)	This is a reserved field; it is not available.	float	No	Not Applicable	--
URI Cache Misses (URI_CACHE_MISSES)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--

## 2.8.21 IP Overview (PI\_IP)

### Function

The IP Overview (PI\_IP) record stores performance data, taken at specific intervals, about the rate at which IP datagrams were sent/received using the IP protocol, number of various IP errors, etc.

### Notes:

- This record is not available in Windows Server 2003 (IPF).

Table 2.67 IP Overview (PI\_IP) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

None

### Lifetime

None

### Record Size

- Fixed part: 953 bytes
- Variable part: 0 bytes

Table 2.68 IP Overview (PI\_IP) Fields

IP Overview (PI_IP)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Datagrams Forwarded/sec (DATAGRAMS_FORWARDED_PER_SEC)	Rate (num./second) at which routes were detected for forwarding datagrams from intermediate destinations to final destinations	float	No	2000, 2003	--
Datagrams Outbound Discarded (DATAGRAMS_OUTBOUND_DISCARDED)	Number of outbound datagrams discarded due to insufficient buffer area, even where no obstacles to delivery were detected #1, #2	ulong	No	2000, 2003	--
Datagrams Outbound No Route (DATAGRAMS_OUTBOUND_NO_ROUTE)	Number of outbound datagrams discarded because a route to the destination could not be found #1, #2	ulong	No	2000, 2003	--
Datagrams Rcvd Address Errors (DATAGRAMS_RECEIVED_ADDRESS_ERRORS)	Number of received datagrams destroyed because the IP address in the IP header destination field was not a valid incoming address in this system #1, #2	ulong	No	2000, 2003	--
Datagrams Rcvd Delivered/sec (DATAGRAMS_REC_DELIVERED_PER_SEC)	Rate (num./second) at which received datagrams were delivered normally to IP user protocols such as ICMP	float	No	2000, 2003	--
Datagrams Rcvd Discarded (DATAGRAMS_REC_DISCARDED)	Number of received datagrams discarded due to insufficient buffer area, even where no processing obstacles were present #1, #2	ulong	No	2000, 2003	--
Datagrams Rcvd Header Errors (DATAGRAMS_RECEIVED_HEADER_ERRORS)	Number of received datagrams destroyed due to IP header errors #1, #2	ulong	No	2000, 2003	--

IP Overview (PI_IP)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Datagrams Rcvd Unknown Protocol (DATAGRAMS_REC_UNKNOWN_PROTOCOL)	Number of received datagrams with local address specified that were received normally but destroyed because the protocol was either unknown or not supported #1, #2	ulong	No	2000, 2003	--
Datagrams Rcvd/sec (DATAGRAMS_RECEIVED_PER_SEC)	Rate (num./second) at which datagrams were received via the network interface	float	No	2000, 2003	--
Datagrams Sent/sec (DATAGRAMS_SENT_PER_SEC)	Rate (num./second) at which datagrams were sent via the network interface	float	No	2000, 2003	--
Datagrams/sec (DATAGRAMS_PER_SEC)	Rate (num./second) at which datagrams were sent or received via the network interface.  The value in this field is the total of the Datagrams Rcvd/sec and Datagrams Sent/sec fields.	float	No	2000, 2003	--
Fragment Reassembly Failures (FRAGMENT_RE_ASSEMBLY_FAILURES)	Number of failures, such as timeouts and errors, detected by IP reconfiguration algorithms #1, #2	ulong	No	2000, 2003	--
Fragmentation Failures (FRAGMENTATION_FAILURES)	Number of datagrams that required fragmentation but were discarded because the Don't Fragment flag was set #1, #2	ulong	No	2000, 2003	--
Fragmented Datagrams/sec (FRAGMENTED_DATAGRAMS_PER_SEC)	Rate (num./second) at which datagrams fragmented normally	float	No	2000, 2003	--
Fragments Created/sec (FRAGMENTS_CREATED_PER_SEC)	Rate (num./second) at which IP fragments were created via datagram fragmentation	float	No	2000, 2003	--

IP Overview (PI_IP)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Fragments Rcvd/sec (FRAGMENTS_RECEIVED_PER_SEC)	Rate (num./second) at which IP fragments requiring reassembly were received	float	No	2000, 2003	--
Fragments Reassembled/sec (FRAGMENTS_REASSEMBLED_PER_SEC)	Rate (num./second) at which IP fragments were reassembled correctly	float	No	2000, 2003	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000, 2003	RECORD_TIME (T1) - RECORD_TIME (T0)
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003	--
Record Type (INPUT_RECORD_TYPE)	Record name (always IP)	char(8)	No	2000, 2003	--

## 2.8.22 Logical Disk Overview (PI\_LOGD)

### Function

The Logical Disk Overview (PI\_LOGD) record stores performance data, taken at specific intervals, about reads, writes, transfers, and areas within logical partitions on hard disk drives and fixed disk drives.

This is a multi-instance record.

### Notes:

- This record collects performance information from hard disk drives and fixed disk drives. Performance information for network disks is not monitored.
- Where the value in the ID (INSTANCE) field of this record is a text string beginning with `Harddisk`, the following fields will not be collected correctly. This phenomenon occurs when the OS does not recognize the disk volume correctly. Similarly, where the value in the ID (INSTANCE) field is `_Total`, the value is the total for the collected records and the following fields will not be collected correctly. Therefore, if these fields are monitored by alarms, an abnormal condition might be falsely reported:
  - The Drive Type (DRIVE\_TYPE) field is displayed as `NO ROOT DIR`.
  - The Page File Size Mbytes (PAGE\_FILE\_SIZE\_BYTES) and the Total Size Mbytes (TOTAL\_DISK\_SIZE) fields are displayed as 0.
- Restart the Agent Collector service if a disk volume (included mounted volumes) is created, modified, or deleted while this record is being collected, or while the LogicalDisk object counter is being monitored in the Windows administration tool Performance Console: in the **System Monitor** or **Performance Logs and Warnings** displays.

If the disk volume is still not displayed in the ID (INSTANCE) field after restarting the Agent Collector service, restart the OS to ensure that collected records contain all the required items.
- Where security settings prevent access to the disk volume for the ID (INSTANCE) field of this record, records for the disk volume cannot be created. If records are required for the disk volume, the security settings must be modified to allow the SYSTEM user account access.
- If the startup type for the Windows Management Instrumentation service (service name: `WinMgmt`), which provides system information for the OS, is set to **disabled** when the System Overview (PI) record is collected, then the correct value for the Page File Size Mbytes(PAGE\_FILE\_SIZE\_BYTES) field cannot be obtained.

### Notes on Collecting This Record in Windows 2000:

- To collect this record in Windows 2000, execute the `diskperf -y` command from the Command Prompt, and restart the OS.
- The OS may not recognize the disk volume correctly in environments prior to Windows 2000 Service Pack 2. To use this record, ensure that the environment is Service Pack 3 or later.

- If the size of the paging file set up for a drive exceeds 2 GB, 0 is displayed as the performance data value in the Page File Size Mbytes (PAGE\_FILE\_SIZE\_BYTES) field.

This problem originates in the `Cimwin32.dll` file included with Windows 2000. For a workaround to this problem, check with Microsoft at the following URL:

URL: <http://support.microsoft.com/kb/820608/>

**Notes on Collecting This Record in Windows 2000 Service Pack 4 or Windows Server 2003:**

- Performance data for this record can no longer be collected when the number of drives in a Windows 2000 Service Pack 4 system exceeds 26 or when the number of drives in a Windows Server 2003 system exceeds 39.

If this occurs, performance data can no longer be collected for the LogicalDisk object displayed by **System Monitor** and **Performance Logs and Alerts** in the Performance console, which is one of the administrative tools in Windows.

For details about how to check the number of drives in a system, and for a workaround to this problem, see section 2.6.2.

**Table 2.69 Logical Disk Overview (PI\_LOGD) Default and Changeable Values**

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	Yes	Yes
LOGIF	(Blank)	

**Key Fields**

ID (INSTANCE)

**Lifetime**

From the configuration of a disk drive to the modification of its configuration.

**Record Size**

- Fixed part: 681 bytes
- Variable part: 700 bytes

Table 2.70 Logical Disk Overview (PI\_LOGD) Fields

Logical Disk Overview (PI_LOGD)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
% Disk Read Time (PCT_DISK_READ_TIME)	Rate (%) of the elapsed time during which the disk was busy while processing a read request	float	No	2000, 2003, 2003 (IPF)	--
% Disk Time (PCT_DISK_TIME)	Rate (%) of the elapsed time during which the disk was busy while processing a read or write request. Usually, if this rate is continuously near 100%, it indicates that the disk is being used excessively.	float	No	2000, 2003, 2003 (IPF)	--
% Disk Usage (PCT_DISK_USAGE)	Disk usage as a percentage of total space #1	float	No	2000, 2003, 2003 (IPF)	100 - PCT_FREE_SPACE
% Disk Write Time (PCT_DISK_WRITE_TIME)	Rate (%) of the elapsed time during which the disk was busy while processing a write request	float	No	2000, 2003, 2003 (IPF)	--
% Free Space (PCT_FREE_SPACE)	Free disk space (%) available for the entire usable area #1	float	No	2000, 2003, 2003 (IPF)	--
% Idle Time (PCT_IDLE_TIME)	Rate (%) of time for which the disk is idle	float	No	2000, 2003, 2003 (IPF)	--
Available Space Mbytes (FREE_DISK_SIZE)	Same value as the Free Mbytes field #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Avg Disk Bytes/Read (AVG_DISK_BYTES_PER_READ)	Average rate (bytes/operation) of data transferred from the disk during read processing	float	No	2000, 2003, 2003 (IPF)	--
Avg Disk Bytes/Write (AVG_DISK_BYTES_PER_WRITE)	Average rate (bytes/operation) of data transferred from the disk during write processing	float	No	2000, 2003, 2003 (IPF)	--
Avg Disk Bytes/Xfer (AVG_DISK_BYTES_PER_TRANSFER)	Average rate (bytes/process) of data transferred between disks during write processing or read processing. Usually, a large value indicates that the system is operating efficiently.	float	No	2000, 2003, 2003 (IPF)	--

Logical Disk Overview (PI_LOGD)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Avg Disk Queue Length (AVG_DISK_QUEUE_LENGTH)	Average number of read or write requests in the disk queue	ulong	No	2000, 2003, 2003 (IPF)	--
Avg Disk Read Queue Length (AVG_DISK_READ_QUEUE_LENGTH)	Average number of read requests placed in the disk queue	ulong	No	2000, 2003, 2003 (IPF)	--
Avg Disk Secs/Read (AVG_DISK_SEC_PER_READ)	Average time (in seconds) required to read data from the disk	float	No	2000, 2003, 2003 (IPF)	--
Avg Disk Secs/Write (AVG_DISK_SEC_PER_WRITE)	Average time (in seconds) required to write data to the disk	float	No	2000, 2003, 2003 (IPF)	--
Avg Disk Secs/Xfer (AVG_DISK_SEC_PER_TRANSFER)	Average time (in seconds) for disk transfer processing	float	No	2000, 2003, 2003 (IPF)	--
Avg Disk Write Queue Length (AVG_DISK_WRITE_QUEUE_LENGTH)	Average number of write request placed in the disk queue	ulong	No	2000, 2003, 2003 (IPF)	--
Current Disk Queue Length (CURRENT_DISK_QUEUE_LENGTH)	Number of queue requests waiting for processing or being processed and remaining in the disk. If the queue length continuously exceeds 2, it indicates that the disk is congested. #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Disk Bytes/sec (DISK_BYTES_PER_SEC)	Rate (bytes/second) at which data was transferred between disks during write or read processing. Usually, a large value indicates that the system is running efficiently.	float	No	2000, 2003, 2003 (IPF)	--
Disk Read Bytes/sec (DISK_READ_BYTES_PER_SEC)	Rate (bytes/second) at which data was transferred to the disk during read processing	float	No	2000, 2003, 2003 (IPF)	--
Disk Reads/sec (DISK_READS_PER_SEC)	Rate (num./second) at which data was read to the disk	float	No	2000, 2003, 2003 (IPF)	--

Logical Disk Overview (PI_LOGD)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Disk Write Bytes/sec (DISK_WRITE_BYTES_PER_SEC)	Rate (bytes/second) at which data was transferred to the disk during write processing	float	No	2000, 2003, 2003 (IPF)	--
Disk Writes/sec (DISK_WRITES_PER_SEC)	Rate (num./second) at which data was written to the disk	float	No	2000, 2003, 2003 (IPF)	--
Disk Xfers/sec (DISK_TRANSFERS_PER_SEC)	Rate (num./second) at which data was read and written to the disk	float	No	2000, 2003, 2003 (IPF)	--
Drive Type (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>	string(36)	No	2000, 2003, 2003 (IPF)	--
Free Mbytes (FREE_MEGABYTES)	Unused area (in megabytes) for the entire usable disk area. When this field is summarized in a historical report, the minimum value is displayed. #1	ulong	No	2000, 2003, 2003 (IPF)	--
ID (INSTANCE)	Logical disk volume name	string(256)	No	2000, 2003, 2003 (IPF)	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the last collected value is displayed.	ulong	No	2000, 2003, 2003 (IPF)	RECORD_TIME (T1) - RECORD_TIME (T0)

Logical Disk Overview (PI_LOGD)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Interval2 (INTERVAL2)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000, 2003, 2003 (IPF)	RECORD_TIME (T1) - RECORD_TIME (T0)
Page File Size Mbytes (PAGE_FILE_SIZE_BYTES)	Physical size (in megabytes) of the valid paging file allocated to the drive #1, #3	double	No	2000, 2003, 2003 (IPF)	ReturnValue / 1MB
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003, 2003 (IPF)	--
Record Type (INPUT_RECORD_TYPE)	Record name (always LOGD)	char(8)	No	2000, 2003, 2003 (IPF)	--
Split IO/Sec (SPLIT_IO_PER_SEC)	Rate (%) at which a disk I/O operation was split into multiple I/O operations. Split I/O occurs when an I/O is too big to be stored, or when the disk requests data of a fragmented size.	float	No	2000, 2003, 2003 (IPF)	--
Total Size Mbytes (TOTAL_DISK_SIZE)	Disk size (in megabytes) #1, #3	double	No	2000, 2003, 2003 (IPF)	(Total number of clusters on the disk * Number of sectors per cluster * Number of bytes per sector) / 1 MB

## 2.8.23 NBT Overview (PI\_NBT)

### Function

The NBT Overview (PI\_NBT) record stores performance data, taken at specific intervals, about the rate at which data was sent/received via a single NBT connection that connects the local computer to a remote computer. The Instance field contains the name of the remote connection. This is a multi-instance record.

### Notes:

- This record is not available in Windows Server 2003 (IPF).
- During the collection interval, when new records corresponding to the Instance (INSTANCE) field are created, 0 is displayed for the initial value because the values of the following fields are calculated from the previously collected information:
  - Bytes Rcvd/sec
  - Bytes Sent/sec
  - Bytes Total/sec

Table 2.71 NBT Overview (PI\_NBT) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

Instance (INSTANCE)

### Lifetime

None

### Record Size

- Fixed part: 681 bytes
- Variable part: 308 bytes

Table 2.72 NBT Overview (PI\_NBT) Fields

NBT Overview (PI_NBT)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Bytes Rcvd/sec (BYTES_RECEIVED_PER_SEC)	Rate (bytes/second) at which the local computer received data, by an NBT connection with a remote computer	float	No	2000, 2003	--
Bytes Sent/sec (BYTES_SENT_PER_SEC)	Rate (bytes/second) at which the local computer sent data, by an NBT connection with a remote computer	float	No	2000, 2003	--
Bytes Total/sec (BYTES_TOTAL_PER_SEC)	Rate (bytes/second) at which the local computer sent or received data, by an NBT connection with a remote computer	float	No	2000, 2003	--
Instance (INSTANCE)	Name of remote connection. Indicated as the NetBIOS name. When a period (.) is added after every 16 bytes, this indicates that an NBT connection is established from a remote computer.	string(256)	No	2000, 2003	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records. For real-time reports, the initial value is 5. For historical report summaries, the last collected value is displayed.	ulong	No	2000, 2003	--
Interval2 (INTERVAL2)	Interval (in seconds) between collections of stored records. For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000, 2003	RECORD_TIME(T1) - RECORD_TIME(T0)
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003	--
Record Type (INPUT_RECORD_TYPE)	Record name (always NBT)	char(8)	No	2000, 2003	--

## 2.8.24 Network Interface Overview (PI\_NETI)

### Function

The Network Interface Overview (PI\_NETI) record stores performance data, taken at specific intervals, about the rate at which data and packets were sent or received via a TCP/IP connection, number of various TCP/IP connection errors, etc. This is a multi-instance record.

Table 2.73 Network Interface Overview (PI\_NETI) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

Instance (INSTANCE)

### Lifetime

From the installation to the removal of the NIC.

### Record Size

- Fixed part: 681 bytes
- Variable part: 532 bytes

Table 2.74 Network Interface Overview (PI\_NETI) Fields

Network Interface Overview (PI_NETI)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Bytes Rcvd/sec (BYTES_RECEIVED_PER_SEC)	Rate (bytes/second) at which the network interface received data	float	No	2000, 2003, 2003 (IPF)	--
Bytes Sent/sec (BYTES_SENT_PER_SEC)	Rate (bytes/second) at which the network interface sent data	float	No	2000, 2003, 2003 (IPF)	--
Bytes Total/sec (BYTES_TOTAL_PER_SEC)	Rate (bytes/second) at which the network interface sent or received data	float	No	2000, 2003, 2003 (IPF)	--
Current Bandwidth (CURRENT_BANDWIDTH)	Approximate bandwidth (bits/second) for the network interface. If the bandwidth is stable, or a correct approximate value for the bandwidth is not obtained, this is the approximate value for nominal bandwidth (bits/second). #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
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: <ul style="list-style-type: none"> <li>▪ Driver name for NIC</li> </ul>	string (256)	No	2000, 2003, 2003 (IPF)	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the last collected value is displayed.	ulong	No	2000, 2003, 2003 (IPF)	RECORD_TIME (T1) - RECORD_TIME (T0)

Network Interface Overview (PI_NETI)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Interval2 (INTERVAL2)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000, 2003, 2003 (IPF)	RECORD_TIME (T1) - RECORD_TIME (T0)
Output Queue Length (OUTPUT_QUEUE_LENGTH)	Length per packet of the queue for outbound packets. Since the NDIS (Network Driver Interface Specification) puts requests in a queue, this field is always 0. #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Pkts Outbound Discarded (PACKETS_OUTBOUND_DISCARDED)	Number of outbound packets selected for disposal since the OS started, due to reasons such as emptying of the buffer area, even though no errors preventing transmission were detected #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Pkts Outbound Errors (PACKETS_OUTBOUND_ERRORS)	Number of outbound packets that could not be sent since the OS started, due to error #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Pkts Rcvd Discarded (PACKETS_RECEIVED_DISCARDED)	Number of inbound packets selected for disposal since the OS started, due to reasons such as emptying of the buffer area, even though no errors preventing transmission to a higher protocol were detected #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Pkts Rcvd Errors (PACKETS_RECEIVED_ERRORS)	Number of inbound packets with errors preventing transmission to a higher protocol, since the OS started #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Pkts Rcvd Non-Unicast/sec (PACKETS_REC_NON_UNICAST_PER_SEC)	Rate (num./second) at which non-unicast (such as subnet broadcast or subnet multicast) packets were transmitted with a higher protocol	float	No	2000, 2003, 2003 (IPF)	--

Network Interface Overview (PI_NETI)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Pkts Rcvd Unicast/sec (PACKETS_REC_UNICAST_PER_SEC)	Rate (num./second) at which subnet unicast packets were transmitted with a higher protocol	float	No	2000, 2003, 2003 (IPF)	--
Pkts Rcvd Unknown (PACKETS_RECEIVED_UNKNOWN)	Number of packets received via the network interface and discarded since the OS started, due to an unknown or unsupported protocol #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Pkts Rcvd/sec (PACKETS_RECEIVED_PER_SEC)	Rate (num./second) at which the network interface received packets	float	No	2000, 2003, 2003 (IPF)	--
Pkts Sent Non-Unicast/sec (PACKETS_SENT_NON_UNICAST_PER_SEC)	Rate (num./second) at which a higher protocol sent packets to a non-unicast (such as subnet broadcast or subnet multicast) address	float	No	2000, 2003, 2003 (IPF)	--
Pkts Sent Unicast/sec (PACKETS_SENT_UNICAST_PER_SEC)	Rate (num./second) at which a higher protocol sent packets to a subnet unicast address	float	No	2000, 2003, 2003 (IPF)	--
Pkts Sent/sec (PACKETS_SENT_PER_SEC)	Rate (num./second) at which the network interface sent packets	float	No	2000, 2003, 2003 (IPF)	--
Pkts/sec (PACKETS_PER_SEC)	Rate (num./second) at which the network interface sent or received packets	float	No	2000, 2003, 2003 (IPF)	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003, 2003 (IPF)	--
Record Type (INPUT_RECORD_TYPE)	Record name (always NETI)	char(8)	No	2000, 2003, 2003 (IPF)	--

## 2.8.25 Network Link IPX Overview (PI\_LIPX)

### Function

The Network Link IPX Overview (PI\_LIPX) record stores performance data, taken at specific intervals, about the number of connections and datagram transmission rate for computers using the network layer IPX protocol.

This is a multi-instance record, but only one record is generated that indicates the totals for each network interface.

### Notes:

- This record is not available in Windows Server 2003 (x64) or Windows Server 2003 (IPF).
- The NWLink IPX/SPX/NetBIOS compatible transport protocol must be installed.

Table 2.75 Network Link IPX Overview (PI\_LIPX) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

Instance (INSTANCE)

Lifetime

None

### Record Size

- Fixed part: 681 bytes
- Variable part: 728 bytes

Table 2.76 Network Link IPX Overview (PI\_LIPX) Fields

Network Link IPX Overview (PI_LIPX)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Bytes Total/sec (BYTES_TOTAL_PER_SEC)	Rate (bytes/second) at which data was sent or received by the protocol from the network.  This value is the sum of the Frame Bytes/sec and Datagram Bytes/sec fields.	float	No	2000, 2003	--
Conn Session Timeouts (CONNECTION_SESSION_TIME OUTS)	Cumulative value for the number of disconnections due to session timeouts #1, #3	ulong	No	2000, 2003	--
Conns Canceled (CONNECTIONS_CANCELED)	Cumulative value for the number of connections canceled #1, #3	ulong	No	2000, 2003	--
Conns No Retries (CONNECTIONS_NO_RETRIES)	Cumulative value for the number of times connection was established properly on the first attempt #1, #3	ulong	No	2000, 2003	--
Conns Open (CONNECTIONS_OPEN)	Number of connections currently open for protocols #1, #2	ulong	No	2000, 2003	--
Conns with Retries (CONNECTIONS_WITH_RETRIE S)	Cumulative value for the number of successful connections after a connection request was retried #1, #3	ulong	No	2000, 2003	--
Datagram Bytes Rcvd/sec (DATAGRAM_BYTES_RECEIVED _PER_SEC)	Rate (bytes/second) at which the computer received datagram data	float	No	2000, 2003	--
Datagram Bytes Sent/sec (DATAGRAM_BYTES_SENT_PER _SEC)	Rate (bytes/second) at which the computer sent datagram data	float	No	2000, 2003	--
Datagram Bytes/sec (DATAGRAM_BYTES_PER_SEC)	Rate (bytes/second) at which the computer sent or received datagram data. This value is the sum of the number of datagram bytes sent or received.	float	No	2000, 2003	--
Datagrams Rcvd/sec (DATAGRAMS_RECEIVED_PER_ SEC)	Rate (num./second) at which the computer received connectionless datagram packets	float	No	2000, 2003	--

Network Link IPX Overview (PI_LIPX)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Datagrams Sent/sec (DATAGRAMS_SENT_PER_SEC)	Rate (num./second) at which the computer sent connectionless datagram packets	float	No	2000, 2003	--
Datagrams/sec (DATAGRAMS_PER_SEC)	Rate (num./second) at which the computer sent or received connectionless datagram packets	float	No	2000, 2003	--
Disconnects Local (DISCONNECTS_LOCAL)	Cumulative value for the number of sessions disconnected by the local computer #1, #3	ulong	No	2000, 2003	--
Disconnects Remote (DISCONNECTS_REMOTE)	Cumulative value for the number of sessions disconnected by the remote computer #1, #3	ulong	No	2000, 2003	--
Expirations Ack (EXPIRATIONS_ACK)	Count of T2 timer expirations #1, #2	ulong	No	2000, 2003	--
Expirations Response (EXPIRATIONS_RESPONSE)	Count of T1 timer expirations #1, #2	ulong	No	2000, 2003	--
Failures Adapter (FAILURES_ADAPTER)	Cumulative value for the number of connections disconnected due to adapter failure #1, #3	ulong	No	2000, 2003	--
Failures Link (FAILURES_LINK)	Cumulative value for the number of connections disconnected due to link failure #1, #3	ulong	No	2000, 2003	--
Failures Not Found (FAILURES_NOT_FOUND)	Cumulative value for the number of connection attempts that failed because the remote computer was not being detected #1, #3	ulong	No	2000, 2003	--
Failures Not Listening (FAILURES_NO_LISTEN)	Cumulative value for the number of connections denied because the remote computer was not monitoring connection requests #1, #3	ulong	No	2000, 2003	--
Failures Resource Local (FAILURES_RESOURCE_LOCAL)	Cumulative value for the number of connections that failed due to resource problems or shortages on the local computer #1, #3	ulong	No	2000, 2003	--

Network Link IPX Overview (PI_LIPX)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Failures Resource Remote (FAILURES_RESOURCE_REMOT E)	Cumulative value for the number of connections that failed due to resource problems or shortages on the remote computer #1, #3	ulong	No	2000, 2003	--
Frame Bytes Rcvd/sec (FRAME_BYTES_RECEIVED_PE R_SEC)	Rate (bytes/second) at which the computer received data for frames (packets)	float	No	2000, 2003	--
Frame Bytes Re-Sent/sec (FRAME_BYTES_RE_SENT_PER _SEC)	Rate (bytes/second) at which the computer resent data for frames (packets)	float	No	2000, 2003	--
Frame Bytes Rejected/sec (FRAME_BYTES_REJECTED_PE R_SEC)	Rate (bytes/second) at which the computer rejected data for frames (packets)	float	No	2000, 2003	--
Frame Bytes Sent/sec (FRAME_BYTES_SENT_PER_SE C)	Rate (bytes/second) at which the computer sent data for frames (packets)	float	No	2000, 2003	--
Frame Bytes/sec (FRAME_BYTES_PER_SEC)	Rate (bytes/second) at which the computer sent or received data for frames (packets)	float	No	2000, 2003	--
Frames Rcvd/sec (FRAMES_RECEIVED_PER_SEC )	Rate (bytes/second) at which the computer received frame data.	float	No	2000, 2003	--
Frames Re-Sent/sec (FRAMES_RE_SENT_PER_SEC)	Rate (num./second) at which the computer resent packets for data frames	float	No	2000, 2003	--
Frames Rejected/sec (FRAMES_REJECTED_PER_SEC )	Rate (num./second) at which the computer rejected packets for data frames	float	No	2000, 2003	--
Frames Sent/sec (FRAMES_SENT_PER_SEC)	Rate (num./second) at which the computer sent packets for data frames	float	No	2000, 2003	--
Frames/sec (FRAMES_PER_SEC)	Rate (num./second) at which the computer sent or received packets for data frames	float	No	2000, 2003	--
Instance (INSTANCE)	Instance name for the protocol (displayed as \Device\NwLnkIpx)	string (256)	No	2000, 2003	--

Network Link IPX Overview (PI_LIPX)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the last collected value is displayed.	ulong	No	2000, 2003	RECORD_ TIME (T1) - RECORD_ TIME (T0)
Interval2 (INTERVAL2)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000, 2003	RECORD_ TIME (T1) - RECORD_ TIME (T0)
Piggyback Ack Timeouts (PIGGYBACK_ACK_TIMEOUTS)	Number of times piggyback reception acknowledgments were not sent because there were no outbound packets for the corresponding remote computer #1, #2	ulong	No	2000, 2003	--
Piggyback Acks Queued/sec (PIGGYBACK_ACK_QUEUED_P ER_SEC)	Rate (num./second) at which piggyback reception acknowledgments were queued	float	No	2000, 2003	--
Pkts Rcvd/sec (PACKETS_RECEIVED_PER_SE C)	Rate (num./second) at which the computer received control packets and data packets	float	No	2000, 2003	--
Pkts Sent/sec (PACKETS_SENT_PER_SEC)	Rate (num./second) at which the computer sent control packets and data packets	float	No	2000, 2003	--
Pkts/sec (PACKETS_PER_SEC)	Rate (num./second) at which the computer sent or received control packets and data packets	float	No	2000, 2003	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003	--
Record Type (INPUT_RECORD_TYPE)	Record name (always LIPX).	char(8 )	No	2000, 2003	--

Network Link IPX Overview (PI_LIPX)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Window Send Avg (WINDOW_SEND_AVERAGE)	Average accumulated value for the number of bytes sent while waiting for reception confirmation from a remote computer #1, #3	ulong	No	2000, 2003	--
Window Send Max (WINDOW_SEND_MAXIMUM)	Maximum number of bytes sent while waiting for reception confirmation from a remote computer #1, #2	ulong	No	2000, 2003	--

## 2.8.26 Network Link NetBIOS Overview (PI\_LBIO)

### Function

The Network Link NetBIOS Overview (PI\_LBIO) record stores performance data, taken at specific intervals, about the number of connections and datagram transmission rate for computers using the interface for the IPX protocol transport layer.

This is a multi-instance record, but only one record is generated that indicates the totals for each network interface.

### Notes:

- This record is not available in Windows Server 2003 (x64) or Windows Server 2003 (IPF).
- The NWLink IPX/SPX/NetBIOS compatibility transport protocol needs to be installed.

Table 2.77 Network Link NetBIOS Overview (PI\_LBIO) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

Instance (INSTANCE)

Lifetime

None

### Record Size

- Fixed part: 681 bytes
- Variable part: 728 bytes

Table 2.78 Network Link NetBIOS Overview (PI\_LBIO) Fields

Network Link NetBIOS Overview (PI_LBIO)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Bytes Total/sec (BYTES_TOTAL_PER_SEC)	Rate (bytes/second) at which data was transmitted by the protocol from the network.  This value is the sum of the Frame Bytes/sec and Datagram Bytes/sec fields.	float	No	2000, 2003	--
Conn Session Timeouts (CONNECTION_SESSION_TIMEOUTS)	Cumulative value for the number of disconnections due to session timeout #1, #3	ulong	No	2000, 2003	--
Conns Canceled (CONNECTIONS_CANCELED)	Cumulative value for the number of connections canceled #1, #3	ulong	No	2000, 2003	--
Conns No Retries (CONNECTIONS_NO_RETRIES)	Cumulative value for the number of times connection was performed properly on the first attempt #1, #3	ulong	No	2000, 2003	--
Conns Open (CONNECTIONS_OPEN)	Number of connections currently open for protocols #1, #2	ulong	No	2000, 2003	--
Conns With Retries (CONNECTIONS_WITH_RETRIES)	Cumulative value for the number of connections successful after a connection request was retried #1, #3	ulong	No	2000, 2003	--
Datagram Bytes Rcvd/sec (DATAGRAM_BYTES_RECEIVED_PER_SEC)	Rate (bytes/second) at which data was received by the computer that sent datagrams	float	No	2000, 2003	--
Datagram Bytes Sent/sec (DATAGRAM_BYTES_SENT_PER_SEC)	Rate (bytes/second) at which the computer sent datagram data	float	No	2000, 2003	--
Datagram Bytes/sec (DATAGRAM_BYTES_PER_SEC)	Rate (bytes/second) at which the computer sent or received datagram data	float	No	2000, 2003	--

Network Link NetBIOS Overview (PI_LBIO)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Datagrams Rcvd/sec (DATAGRAMS_RECEIVED_PER_SEC)	Rate (num./second) at which connectionless packets were received by the computer that received datagrams	float	No	2000, 2003	--
Datagrams Sent/sec (DATAGRAMS_SENT_PER_SEC)	Rate (num./second) at which connectionless packets were sent by the computer that sent datagrams	float	No	2000, 2003	--
Datagrams/sec (DATAGRAMS_PER_SEC)	Rate (num./second) at which connectionless packets were sent or received by the computer that sent or received datagrams	float	No	2000, 2003	--
Disconnects Local (DISCONNECTS_LOCAL)	Cumulative value for the number of sessions disconnected by the local computer #1, #3	ulong	No	2000, 2003	--
Disconnects Remote (DISCONNECTS_REMOTE)	Cumulative value for the number of sessions disconnected by the remote computer #1, #3	ulong	No	2000, 2003	--
Expirations Ack (EXPIRATIONS_ACK)	Count of T2 timer expirations #1, #2	ulong	No	2000, 2003	--
Expirations Response (EXPIRATIONS_RESPONSE)	Count of T1 timer expirations #1, #2	ulong	No	2000, 2003	--
Failures Adapter (FAILURES_ADAPTER)	Cumulative value for the number of connections disconnected due to adapter failure #1, #3	ulong	No	2000, 2003	--
Failures Link (FAILURES_LINK)	Cumulative value for the number of connections disconnected due to link failure #1, #3	ulong	No	2000, 2003	--
Failures Not Found (FAILURES_NOT_FOUND)	Cumulative value for the number of connection attempts that failed because the remote computer was not being detected #1, #3	ulong	No	2000, 2003	--
Failures Not Listening (FAILURES_NO_LISTEN)	Cumulative value for the number of connections denied because the remote computer was not monitoring connection requests #1, #3	ulong	No	2000, 2003	--

Network Link NetBIOS Overview (PI_LBIO)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Failures Resource Local (FAILURES_RESOURCE_LOCAL)	Cumulative value for the number of connections that failed due to resource problems or shortages on the local computer #1, #3	ulong	No	2000, 2003	--
Failures Resource Remote (FAILURES_RESOURCE_REMOTE)	Cumulative value for the number of connections that failed due to resource problems or shortages on the remote computer #1, #3	ulong	No	2000, 2003	--
Frame Bytes Rcvd/sec (FRAME_BYTES_RECEIVED_PER_SEC)	Rate (bytes/second) at which data was received for frames (packets) by the computer	float	No	2000, 2003	--
Frame Bytes Re-Sent/sec (FRAME_BYTES_RE_SENT_PER_SEC)	Rate (bytes/second) at which data was resent for frames (packets) by the computer	float	No	2000, 2003	--
Frame Bytes Rejected/sec (FRAME_BYTES_REJECTED_PER_SEC)	Rate (bytes/second) at which data was rejected for frames (packets) by the computer	float	No	2000, 2003	--
Frame Bytes Sent/sec (FRAME_BYTES_SENT_PER_SEC)	Rate (bytes/second) at which data was sent for frames (packets) by the computer	float	No	2000, 2003	--
Frame Bytes/sec (FRAME_BYTES_PER_SEC)	Rate (bytes/second) at which data was sent or received for frames (packets) by the computer	float	No	2000, 2003	--
Frames Rcvd/sec (FRAMES_RECEIVED_PER_SEC)	Rate (num./second) at which packets were received for data frames by the computer	float	No	2000, 2003	--
Frames Re-Sent/sec (FRAMES_RE_SENT_PER_SEC)	Rate (num./second) at which packets were resent for data frames by the computer	float	No	2000, 2003	--
Frames Rejected/sec (FRAMES_REJECTED_PER_SEC)	Rate (num./second) at which packets were rejected for data frames by the computer	float	No	2000, 2003	--
Frames Sent/sec (FRAMES_SENT_PER_SEC)	Rate (num./second) at which packets were sent for data frames by the computer	float	No	2000, 2003	--

Network Link NetBIOS Overview (PI_LBIO)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Frames/sec (FRAMES_PER_SEC)	Rate (num./second) at which packets were sent or received for data frames by the computer	float	No	2000, 2003	--
Instance (INSTANCE)	Instance name for the protocol layer (displayed as \Device\NwLknNb)	string (256)	No	2000, 2003	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the last collected value is displayed.	ulong	No	2000, 2003	RECORD_TIME (T1) - RECORD_TIME (T0)
Interval2 (INTERVAL2)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000, 2003	RECORD_TIME (T1) - RECORD_TIME (T0)
Piggyback Ack Timeouts (PIGGYBACK_ACK_TIMEOUTS)	Number of times piggyback reception acknowledgments were not sent because there were no outbound packets for the corresponding remote computer #1, #2	ulong	No	2000, 2003	--
Piggyback Acks Queued/sec (PIGGYBACK_ACK_QUEUED_PER_SEC)	Rate (num./second) at which piggyback reception acknowledgments were queued	float	No	2000, 2003	--
Pkts Rcvd/sec (PACKETS_RECEIVED_PER_SEC)	Rate (num./second) at which the computer received control packets and data packets	float	No	2000, 2003	--
Pkts Sent/sec (PACKETS_SENT_PER_SEC)	Rate (num./second) at which the computer sent control packets and data packets	float	No	2000, 2003	--

Network Link NetBIOS Overview (PI_LBIO)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Pkts/sec (PACKETS_PER_SEC)	Rate (num./second) at which the computer sent or received packets. (This field contains the total number of packets sent or received per second.)	float	No	2000, 2003	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003	--
Record Type (INPUT_RECORD_TYPE)	Record name (always LBIO)	char (8 )	No	2000, 2003	--
Window Send Avg (WINDOW_SEND_AVERAGE)	Average accumulated value for the number of bytes sent while waiting for reception confirmation from a remote computer #1, #3	ulong	No	2000, 2003	--
Window Send Max (WINDOW_SEND_MAXIMUM)	Maximum number of bytes sent while waiting for reception confirmation from a remote computer #1, #2	ulong	No	2000, 2003	--

## 2.8.27 Network Link SPX Overview (PI\_LSPX)

### Function

The Network Link SPX Overview (PI\_LSPX) record stores performance data, taken at specific intervals, about the number of connections and datagram transmission rate for computers using the transport layer SPX protocol.

This is a multi-instance record, but only one record is generated that indicates the totals for each network interface.

### Notes:

- This record is not available in Windows Server 2003 (x64) or Windows Server 2003 (IPF).
- The NWLink IPX/SPX/NetBIOS compatible transport protocol must be installed.

Table 2.79 Network Link SPX Overview (PI\_LSPX) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	No
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

Instance (INSTANCE)

### Lifetime

None

### Record Size

- Fixed part: 681 bytes
- Variable part: 728 bytes

Table 2.80 Network Link SPX Overview (PI\_LSPX) Fields

Network Link SPX Overview (PI_LSPX)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Bytes Total/sec (BYTES_TOTAL_PER_SEC)	Rate (bytes/second) at which data was sent to or received from the network by the protocol.  This value is the sum of the Frame Bytes/sec and Datagram Bytes/sec fields.	float	No	2000, 2003	--
Conn Session Timeouts (CONNECTION_SESSION_TIMEOUTS)	Cumulative value for the number of disconnections due to a session timeout #1, #3	ulong	No	2000, 2003	--
Conns Canceled (CONNECTIONS_CANCELED)	Cumulative value for the number of connections that were canceled #1, #3	ulong	No	2000, 2003	--
Conns No Retries (CONNECTIONS_NO_RETRIES)	Cumulative value for the number of times connection was performed successfully on the first attempt #1, #3	ulong	No	2000, 2003	--
Conns Open (CONNECTIONS_OPEN)	Number of connections currently open for the protocol #1, #2	ulong	No	2000, 2003	--
Conns with Retries (CONNECTIONS_WITH_RETRIES)	Cumulative value for the number of successful connections made after a connection request was retried #1, #3	ulong	No	2000, 2003	--
Datagram Bytes Rcvd/sec (DATAGRAM_BYTES_RECEIVED_PER_SEC)	Rate (bytes/second) at which the computer received datagram data	float	No	2000, 2003	--
Datagram Bytes Sent/sec (DATAGRAM_BYTES_SENT_PER_SEC)	Rate (bytes/second) at which the computer sent datagram data	float	No	2000, 2003	--

Network Link SPX Overview (PI_LSPX)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Datagram Bytes/sec (DATAGRAM_BYTES_PER_SEC)	Rate (bytes/second) at which the computer sent or received datagram data	float	No	2000, 2003	--
Datagrams Rcvd/sec (DATAGRAMS_RECEIVED_PER_SEC)	Rate (num./second) at which the computer received connectionless datagram packets	float	No	2000, 2003	--
Datagrams Sent/sec (DATAGRAMS_SENT_PER_SEC)	Rate (num./second) at which the computer sent connectionless datagram packets	float	No	2000, 2003	--
Datagrams/sec (DATAGRAMS_PER_SEC)	Rate (num./second) at which the computer sent or received connectionless datagram packets	float	No	2000, 2003	--
Disconnects Local (DISCONNECTS_LOCAL)	Cumulative value for the number of sessions disconnected by the local computer #1, #3	ulong	No	2000, 2003	--
Disconnects Remote (DISCONNECTS_REMOTE)	Cumulative value for the number of sessions disconnected by the remote computer #1, #3	ulong	No	2000, 2003	--
Expirations Ack (EXPIRATIONS_ACK)	Count of T2 timer expirations #1, #2	ulong	No	2000, 2003	--
Expirations Response (EXPIRATIONS_RESPONSE)	Count of T1 timer expirations #1, #2	ulong	No	2000, 2003	--
Failures Adapter (FAILURES_ADAPTER)	Cumulative value for the number of connections disconnected due to adapter failure #1, #3	ulong	No	2000, 2003	--

Network Link SPX Overview (PI_LSPX)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Failures Link (FAILURES_LINK)	Cumulative value for the number of connections disconnected due to link failure #1, #3	ulong	No	2000, 2003	--
Failures Not Found (FAILURES_NOT_FOUND)	Cumulative value for the number of connection attempts that failed because the remote computer was not found #1, #3	ulong	No	2000, 2003	--
Failures Not Listening (FAILURES_NO_LISTEN)	Cumulative value for the number of connections denied because the remote computer was not monitoring connection requests #1, #3	ulong	No	2000, 2003	--
Failures Resource Local (FAILURES_RESOURCE_LOCAL)	Cumulative value for the number of connections that failed due to resource problems or shortages on the local computer #1, #3	ulong	No	2000, 2003	--
Failures Resource Remote (FAILURES_RESOURCE_REMOTE)	Cumulative value for the number of connections that failed due to resource problems or shortages on the remote computer #1, #3	ulong	No	2000, 2003	--
Frame Bytes Rcvd/sec (FRAME_BYTES_RECEIVED_PER_SEC)	Rate (bytes/second) at which the computer received data frames (packets)	float	No	2000, 2003	--
Frame Bytes Re-Sent/sec (FRAME_BYTES_RE_SENT_PER_SEC)	Rate (bytes/second) at which the computer resent data frames (packets)	float	No	2000, 2003	--

Network Link SPX Overview (PI_LSPX)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Frame Bytes Rejected/sec (FRAME_BYTES_REJECTED_PER_SEC)	Rate (bytes/second) at which the computer rejected data frames (packets)	float	No	2000, 2003	--
Frame Bytes Sent/sec (FRAME_BYTES_SENT_PER_SEC)	Rate (bytes/second) at which the computer sent data frames (packets)	float	No	2000, 2003	--
Frame Bytes/sec (FRAME_BYTES_PER_SEC)	Rate (bytes/second) at which the computer sent or received packets for data frames	float	No	2000, 2003	--
Frames Rcvd/sec (FRAMES_RECEIVED_PER_SEC)	Rate (num./second) at which the computer received packets for data frames	float	No	2000, 2003	--
Frames Re-Sent/sec (FRAMES_RE_SENT_PER_SEC)	Rate (num./second) at which packets were resent for data frames, by the computer	float	No	2000, 2003	--
Frames Rejected/sec (FRAMES_REJECTED_PER_SEC)	Rate (num./second) at which the computer rejected packets for data frames	float	No	2000, 2003	--
Frames Sent/sec (FRAMES_SENT_PER_SEC)	Rate (num./second) at which packets were sent for data frames, by the computer	float	No	2000, 2003	--
Frames/sec (FRAMES_PER_SEC)	Rate (num./second) at which packets were sent or received for data frames, by the computer	float	No	2000, 2003	--

Network Link SPX Overview (PI_LSPX)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Instance (INSTANCE)	Instance name for the protocol layer (displayed as \Device\NwLnk Spx)	string (256)	No	2000, 2003	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the last collected value is displayed.	ulong	No	2000, 2003	RECORD_TIME (T1) - RECORD_TIME (T0)
Interval2 (INTERVAL2)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000, 2003	RECORD_TIME (T1) - RECORD_TIME (T0)
Piggyback Ack Timeouts (PIGGYBACK_ACK_TIMEOUTS)	Number of times piggyback reception acknowledgements were not sent because there were no outbound packets for the corresponding remote computer. #1, #2	ulong	No	2000, 2003	--
Piggyback Acks Queued/sec (PIGGYBACK_ACK_QUEUED_PER_SEC)	Rate (num./second) at which piggyback reception acknowledgements were queued	float	No	2000, 2003	--
Pkts Rcvd/sec (PACKETS_RECEIVED_PER_SEC)	Rate (num./second) at which the computer received control packets and data packets	float	No	2000, 2003	--

Network Link SPX Overview (PI_LSPX)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Pkts Sent/sec (PACKETS_SENT_PER_SEC)	Rate (num./second) at which the computer sent control packets and data packets	float	No	2000, 2003	--
Pkts/sec (PACKETS_PER_SEC)	Rate (num./second) at which the computer transferred (sent or received) control packets and data packets	float	No	2000, 2003	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003	--
Record Type (INPUT_RECORD_TYPE)	Record name (always LSPX)	char(8)	No	2000, 2003	--
Window Send Avg (WINDOW_SEND_AVERAGE)	Average accumulated value for the number of bytes sent while waiting for reception acknowledgment from a remote computer #1, #3	ulong	No	2000, 2003	--
Window Send Max (WINDOW_SEND_MAXIMUM)	Maximum number of bytes sent while waiting for reception acknowledgment from a remote computer #1, #2	ulong	No	2000, 2003	--

## 2.8.28 NNTP Commands (PI\_NWSC)

### Function

The NNTP Commands (PI\_NWSC) record stores performance data, taken at specific intervals, about all commands processed by NNTP services distributing, obtaining, and posting news articles on the Internet.

The NNTP service is a component of Microsoft Internet Information Services (IIS).

This is a multi-instance record.

### Notes:

- This record is supported by IIS Version 5.0 or later.
- This record is not available in Windows Server 2003 (IPF).

Table 2.81 NNTP Commands (PI\_NWSC) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

Instance (INSTANCE)

### Lifetime

From the configuration to deletion of an NNTP virtual server

### Record Size

- Fixed part: 681 bytes
- Variable part: 1,124 bytes

Table 2.82 NNTP Commands (PL\_NWSC) Fields

NNTP Commands (PL_NWSC)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Article Cnds (ARTICLE_CMDS)	Number of received ARTICLE commands #2	ulong	No	2000, 2003	TOTAL_ARTICLE_CMDS (T1) - TOTAL_ARTICLE_CMDS (T0)
Article Cnds/sec (ARTICLE_CMDS_PER_SEC)	Rate (num./second) at which ARTICLE commands were received	float	No	2000, 2003	(TOTAL_ARTICLE_CMDS (T1) - TOTAL_ARTICLE_CMDS (T0)) / INTERVAL
Check Cnds (CHECK_CMDS)	Number of received CHECK commands #2	ulong	No	2000, 2003	TOTAL_CHECK_CMDS (T1) - TOTAL_CHECK_CMDS (T0)
Check Cnds/sec (CHECK_CMDS_PER_SEC)	Rate (num./second) at which CHECK commands were received	float	No	2000, 2003	(TOTAL_CHECK_CMDS (T1) - TOTAL_CHECK_CMDS (T0)) / INTERVAL
Group Cnds (GROUP_CMDS)	Number of received GROUP commands #2	ulong	No	2000, 2003	TOTAL_GROUP_CMDS (T1) - TOTAL_GROUP_CMDS (T0)
Group Cnds/sec (GROUP_CMDS_PER_SEC)	Rate (num./second) at which GROUP commands were received	float	No	2000, 2003	(TOTAL_GROUP_CMDS (T1) - TOTAL_GROUP_CMDS (T0)) / INTERVAL
Help Cnds (HELP_CMDS)	Number of received HELP commands #2	ulong	No	2000, 2003	TOTAL_HELP_CMDS (T1) - TOTAL_HELP_CMDS (T0)
Help Cnds/sec (HELP_CMDS_PER_SEC)	Rate (num./second) at which HELP commands were received	float	No	2000, 2003	(TOTAL_HELP_CMDS (T1) - TOTAL_HELP_CMDS (T0)) / INTERVAL

NNTP Commands (PI_NWSC)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Ihave Cmds (IHAVE_CMDS)	Rate (num./second) at which IHAVE commands were received #2	ulong	No	2000, 2003	TOTAL_IHAVE_CMDS (T1) - TOTAL_IHAVE_CMDS (T0)
Ihave Cmds/sec (IHAVE_CMDS_PER_SEC)	Rate (num./second) at which IHAVE commands were received	float	No	2000, 2003	(TOTAL_IHAVE_CMDS (T1) - TOTAL_IHAVE_CMDS (T0)) / INTERVAL
Instance (INSTANCE)	Instance name for the NNTP site.  Instance names are numbers starting with 1.	string(256)	No	2000, 2003	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the last collected value is displayed.	ulong	No	2000, 2003	RECORD_TIME (T1) - RECORD_TIME (T0)
Interval2 (INTERVAL2)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000, 2003	RECORD_TIME (T1) - RECORD_TIME (T0)

NNTP Commands (PI_NWSC)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Last Ccmds (LAST_CMDS)	Number of received LAST commands #2	float	No	2000, 2003	TOTAL_LAST_CMDS (T1) - TOTAL_LAST_CMDS (T0)
Last Ccmds/sec (LAST_CMDS_PER_SEC)	Rate (num./second) at which LAST commands were received	float	No	2000, 2003	(TOTAL_LAST_CMDS (T1) - TOTAL_LAST_CMDS (T0)) / INTERVAL
List Ccmds (LIST_CMDS)	Number of received LIST commands #2	ulong	No	2000, 2003	TOTAL_LIST_CMDS (T1) - TOTAL_LIST_CMDS (T0)
List Ccmds/sec (LIST_CMDS_PER_SEC)	Rate (num./second) at which LIST commands were received	float	No	2000, 2003	(TOTAL_LIST_CMDS (T1) - TOTAL_LIST_CMDS (T0)) / INTERVAL
Logon Attempts (LOGON_ATTEMPTS)	Number of times logon was attempted to the NNTP service #1, #2	ulong	No	2000, 2003	--
Logon Attempts/sec (LOGON_ATTEMPTS_PER_SEC)	Rate (num./second) at which logons to the NNTP service were attempted	float	No	2000, 2003	--
Logon Failures (LOGON_FAILURES)	Rate (num./second) at which logons to the NNTP service failed #1, #2	ulong	No	2000, 2003	--
Logon Failures/sec (LOGON_FAILURES_PER_SEC)	Rate (num./second) at which logons to the NNTP service failed	float	No	2000, 2003	--
Mode Ccmds (MODE_CMDS)	Number of received MODE commands #2	ulong	No	2000, 2003	TOTAL_MODE_CMDS (T1) - TOTAL_MODE_CMDS (T0)

NNTP Commands (PI_NWSC)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Mode Cnds/sec (MODE_CMDS_PER_SEC)	Rate (num./second) at which MODE commands were received	float	No	2000, 2003	(TOTAL_MODE_CMDS (T1) - TOTAL_MODE_CMDS (T0)) / INTERVAL
Newgroups Cnds (NEWGROUPS_CMDS)	Number of received NEWGROUPS commands #2	ulong	No	2000, 2003	TOTAL_NEWGROUPS_CMDS (T1) - TOTAL_NEWGROUPS_CMDS (T0)
Newgroups Cnds/sec (NEWGROUPS_CMDS_PER_SEC)	Rate (num./second) at which NEWGROUPS commands were received	float	No	2000, 2003	(TOTAL_NEWGROUPS_CMDS (T1) - TOTAL_NEWGROUPS_CMDS (T0)) / INTERVAL
Newnews Cnds (NEWNEWS_CMDS)	Number of received NEWNEWS commands #2	ulong	No	2000, 2003	TOTAL_NEWNEWS_CMDS (T1) - TOTAL_NEWNEWS_CMDS (T0)
Newnews Cnds/sec (NEWNEWS_CMDS_PER_SEC)	Rate (num./second) at which NEWNEWS commands were received	float	No	2000, 2003	(TOTAL_NEWNEWS_CMDS (T1) - TOTAL_NEWNEWS_CMDS (T0)) / INTERVAL
Next Cnds (NEXT_CMDS)	Number of received NEXT commands #2	ulong	No	2000, 2003	TOTAL_NEXT_CMDS (T1) - TOTAL_NEXT_CMDS (T0)
Next Cnds/sec (NEXT_CMDS_PER_SEC)	Rate (num./second) at which NEXT commands were received	float	No	2000, 2003	(TOTAL_NEXT_CMDS (T1) - TOTAL_NEXT_CMDS (T0)) / INTERVAL
Overall Article Cnds/sec (OVERALL_ARTICLE_CMDS_PER_SEC)	Rate (num./second) at which ARTICLE commands were received since the NNTP service started #3	float	No	2000, 2003	--

NNTP Commands (PI_NWSC)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Overall Check Cnds/sec (OVERALL_CHECK_CMDS_PER_SEC)	Rate (num./second) at which CHECK commands were received since the NNTP service started #3	float	No	2000, 2003	--
Overall Group Cnds/sec (OVERALL_GROUP_CMDS_PER_SEC)	Rate (num./second) at which GROUP commands were received since the NNTP service started #3	float	No	2000, 2003	--
Overall Help Cnds/sec (OVERALL_HELP_CMDS_PER_SEC)	Rate (num./second) at which HELP commands were received since the NNTP service started #3	float	No	2000, 2003	--
Overall Ihave Cnds/sec (OVERALL_IHAVE_CMDS_PER_SEC)	Rate (num./second) at which IHAVE commands were received since the NNTP service started #3	float	No	2000, 2003	--
Overall Last Cnds/sec (OVERALL_LAST_CMDS_PER_SEC)	Rate (num./second) at which LAST commands were received since the NNTP service started #3	float	No	2000, 2003	--
Overall List Cnds/sec (OVERALL_LIST_CMDS_PER_SEC)	Rate (num./second) at which LIST commands were received since the NNTP service started #3	float	No	2000, 2003	--

NNTP Commands (PI_NWSC)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Overall Mode Cnds/sec (OVERALL_MODE_CMDS_PER_SEC)	Rate (num./second) at which MODE commands were received since the NNTP service started #3	float	No	2000, 2003	--
Overall Newgroups Cnds/sec (OVERALL_NEWGROUPS_CMDS_PER_SEC)	Rate (num./second) at which NEWGROUPS commands were received since the NNTP service started #3	float	No	2000, 2003	--
Overall Newnews Cnds/sec (OVERALL_NEWNEWS_CMDS_PER_SEC)	Rate (num./second) at which NEWNEWS commands were received since the NNTP service started #3	float	No	2000, 2003	--
Overall Next Cnds/sec (OVERALL_NEXT_CMDS_PER_SEC)	Rate (num./second) at which NEXT commands were received since the NNTP service started #3	float	No	2000, 2003	--
Overall Post Cnds/sec (OVERALL_POST_CMDS_PER_SEC)	Rate (num./second) at which POST commands were received since the NNTP service started #3	float	No	2000, 2003	--
Overall Quit Cnds/sec (OVERALL_QUIT_CMDS_PER_SEC)	Rate (num./second) at which QUIT commands were received since the NNTP service started #3	float	No	2000, 2003	--

NNTP Commands (PI_NWSC)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Overall Search Cmds/sec (OVERALL_SEARCH_CMDS_PER_SEC)	Rate (num./second) at which SEARCH commands were received since the NNTP service started #3	float	No	2000, 2003	--
Overall Stat Cmds/sec (OVERALL_STAT_CMDS_PER_SEC)	Rate (num./second) at which STAT commands were received since the NNTP service started #3	float	No	2000, 2003	--
Overall Takethis Cmds/sec (OVERALL_TAKETHIS_CMDS_PER_SEC)	Rate (num./second) at which TAKETHIS commands were received since the NNTP service started #3	float	No	2000, 2003	--
Overall XHdr Cmds/sec (OVERALL_XHDR_CMDS_PER_SEC)	Rate (num./second) at which XHDR commands were received since the NNTP service started #3	float	No	2000, 2003	--
Overall XOver Cmds/sec (OVERALL_XOVER_CMDS_PER_SEC)	Rate (num./second) at which XOVER commands were received since the NNTP service started #3	float	No	2000, 2003	--
Overall XPat Cmds/sec (OVERALL_XPAT_CMDS_PER_SEC)	Rate (num./second) at which XPAT commands were received since the NNTP service started #3	float	No	2000, 2003	--

NNTP Commands (PI_NWSC)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Overall XReplc Cnds/sec (OVERALL_XREPLIC_CMDS_PER_SEC)	Rate (num./second) at which XREPLIC commands were received since the NNTP service started #3	float	No	2000, 2003	--
Post Cnds (POST_CMDS)	Number of received POST commands #2	ulong	No	2000, 2003	TOTAL_POST_CMDS (T1) - TOTAL_POST_CMDS (T0)
Post Cnds/sec (POST_CMDS_PER_SEC)	Rate (num./second) at which POST commands were received	float	No	2000, 2003	(TOTAL_POST_CMDS (T1) - TOTAL_POST_CMDS (T0)) / INTERVAL
Quit Cnds (QUIT_CMDS)	Rate (num./second) at which QUIT commands were received #2	ulong	No	2000, 2003	TOTAL_QUIT_CMDS (T1) - TOTAL_QUIT_CMDS (T0)
Quit Cnds/sec (QUIT_CMDS_PER_SEC)	Rate (num./second) at which QUIT commands were received	float	No	2000, 2003	(TOTAL_QUIT_CMDS (T1) - TOTAL_QUIT_CMDS (T0)) / INTERVAL
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003	--
Record Type (INPUT_RECORD_TYPE)	Record name (always NWSC)	char(8)	No	2000, 2003	--
Search Cnds (SEARCH_CMDS)	Rate (num./second) at which SEARCH commands were received #2	ulong	No	2000, 2003	TOTAL_SEARCH_CMDS (T1) - TOTAL_SEARCH_CMDS (T0)
Search Cnds/sec (SEARCH_CMDS_PER_SEC)	Rate (num./second) at which SEARCH commands were received	float	No	2000, 2003	(TOTAL_SEARCH_CMDS (T1) - TOTAL_SEARCH_CMDS (T0)) / INTERVAL

NNTP Commands (PI_NWSC)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Stat Ccmds (STAT_CMDS)	Rate (num./second) at which STAT commands were received #2	ulong	No	2000, 2003	TOTAL_STAT_ CMDS (T1) - TOTAL_STAT_ CMDS (T0)
Stat Ccmds/sec (STAT_CMDS_PER_SEC)	Rate (num./second) at which STAT commands were received	float	No	2000, 2003	(TOTAL_STAT_ _CMDS (T1) - TOTAL_STAT_ CMDS (T0)) / INTERVAL
Takethis Ccmds (TAKETHIS_CMDS)	Number of received TAKETHIS commands #2	ulong	No	2000, 2003	TOTAL_TAKET HIS_CMDS (T1) - TOTAL_TAKET HIS_CMDS (T0)
Takethis Ccmds/sec (TAKETHIS_CMDS_PER_SEC)	Rate (num./second) at which TAKETHIS commands were received	float	No	2000, 2003	(TOTAL_TAKE THIS_CMDS (T1) - TOTAL_TAKET HIS_CMDS (T0)) / INTERVAL
Total Article Ccmds (TOTAL_ARTICLE_CMDS)	Number of ARTICLE commands received since the NNTP service started #1, #3	ulong	No	2000, 2003	--
Total Check Ccmds (TOTAL_CHECK_CMDS)	Number of CHECK commands received since the NNTP service started #1, #3	ulong	No	2000, 2003	--
Total Group Ccmds (TOTAL_GROUP_CMDS)	Number of GROUP commands received since the NNTP service started #1, #3	ulong	No	2000, 2003	--

NNTP Commands (PI_NWSC)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Total Help Cnds (TOTAL_HELP_CMDS)	Number of HELP commands received since the NNTP service started #1, #3	ulong	No	2000, 2003	--
Total Ihave Cnds (TOTAL_IHAVE_CMDS)	Number of IHAVE commands received since the NNTP service started #1, #3	ulong	No	2000, 2003	--
Total Last Cnds (TOTAL_LAST_CMDS)	Number of LAST commands received since the NNTP service started #1, #3	float	No	2000, 2003	--
Total List Cnds (TOTAL_LIST_CMDS)	Number of LIST commands received since the NNTP service started #1, #3	ulong	No	2000, 2003	--
Total Mode Cnds (TOTAL_MODE_CMDS)	Number of MODE commands received since the NNTP service started #1, #3	ulong	No	2000, 2003	--
Total Newgroups Cnds (TOTAL_NEWGROUPS_CMDS)	Number of NEWGROUPS commands received since the NNTP service started #1, #3	ulong	No	2000, 2003	--
Total Newnews Cnds (TOTAL_NEWNEWS_CMDS)	Number of NEWNEWS commands received since the NNTP service started #1, #3	ulong	No	2000, 2003	--

NNTP Commands (PI_NWSC)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Total Next Cmds (TOTAL_NEXT_CMDS)	Number of NEXT commands received since the NNTP service started #1, #3	ulong	No	2000, 2003	--
Total Post Cmds (TOTAL_POST_CMDS)	Number of POST commands received since the NNTP service started #1, #3	ulong	No	2000, 2003	--
Total Quit Cmds (TOTAL_QUIT_CMDS)	Number of QUIT commands received since the NNTP service started #1, #3	ulong	No	2000, 2003	--
Total Search Cmds (TOTAL_SEARCH_CMDS)	Number of SEARCH commands received since the NNTP service started #1, #3	ulong	No	2000, 2003	--
Total Stat Cmds (TOTAL_STAT_CMDS)	Number of STAT commands received since the NNTP service started #1, #3	ulong	No	2000, 2003	--
Total Takethis Cmds (TOTAL_TAKETHIS_CMDS)	Number of TAKETHIS commands received since the NNTP service started #1, #3	ulong	No	2000, 2003	--
Total XHdr Cmds (TOTAL_XHDR_CMDS)	Number of XHDR commands received since the NNTP service started #1, #3	ulong	No	2000, 2003	--

NNTP Commands (PI_NWSC)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Total XPat Cmds (TOTAL_XPAT_CMDS)	Number of XPAT commands received since the NNTP service started #1, #3	ulong	No	2000, 2003	--
Total XReplic Cmds (TOTAL_XREPLIC_CMDS)	Number of XREPLIC commands received since the NNTP service started #1, #3	ulong	No	2000, 2003	--
Total Xover Cmds (TOTAL_XOVER_CMDS)	Number of XOVER commands received since the NNTP service started #1, #3	ulong	No	2000, 2003	--
XHdr Cmds (XHDR_CMDS)	Number of received XHDR commands #2	ulong	No	2000, 2003	TOTAL_XHDR_CMDS (T1) - TOTAL_XHDR_CMDS (T0)
XHdr Cmds/sec (XHDR_CMDS_PER_SEC)	Rate (num./second) at which XHDR commands were received	float	No	2000, 2003	(TOTAL_XHDR_CMDS (T1) - TOTAL_XHDR_CMDS (T0)) / INTERVAL
XOver Cmds/sec (XOVER_CMDS_PER_SEC)	Rate (num./second) at which XOVER commands were received	float	No	2000, 2003	(TOTAL_XOVER_CMDS (T1) - TOTAL_XOVER_CMDS (T0)) / INTERVAL
XPat Cmds (XPAT_CMDS)	Number of received XPAT commands #2	ulong	No	2000, 2003	TOTAL_XPAT_CMDS (T1) - TOTAL_XPAT_CMDS (T0)
XPat Cmds/sec (XPAT_CMDS_PER_SEC)	Rate (num./second) at which XPAT commands were received	float	No	2000, 2003	(TOTAL_XPAT_CMDS (T1) - TOTAL_XPAT_CMDS (T0)) / INTERVAL

NNTP Commands (PI_NWSC)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
XReplic Cnds (XREPLIC_CMDS)	Number of received XREPLIC commands #2	ulong	No	2000, 2003	TOTAL_XREPL IC_CMDS (T1) - TOTAL_XREPL IC_CMDS (T0)
XReplic Cnds/sec (XREPLIC_CMDS_PER_SEC)	Rate (num./second) at which XREPLIC commands were received	float	No	2000, 2003	(TOTAL_XREP LIC_CMDS (T1) - TOTAL_XREPL IC_CMDS (T0)) / INTERVAL
Xover Cnds (XOVER_CMDS)	Number of received XOVER commands #2	ulong	No	2000, 2003	TOTAL_XOVER _CMDS (T1) - TOTAL_XOVER _CMDS (T0)

## 2.8.29 NNTP Server (PI\_NWSS)

### Function

The NNTP Server (PI\_NWSS) record stores performance data, taken at specific intervals, about NNTP services distributing, obtaining, and posting news articles on the Internet.

The NNTP service is a component of Microsoft Internet Information Services (IIS).

This is a multi-instance record.

### Notes:

- This record is supported by IIS Version 5.0 or later.
- This record is not available in Windows Server 2003 (IPF).

Table 2.83 NNTP Server (PI\_NWSS) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

Instance (INSTANCE)

### Lifetime

From the configuration to the deletion of an NNTP virtual server

### Record Size

- Fixed part: 681 bytes
- Variable part: 864 bytes

Table 2.84 NNTP Server (PI\_NWSS) Fields

NNTP Server (PI_NWSS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Article Map Entries (ARTICLE_MAP_ENTRIES )	Number of entries inserted in the article mapping table of the NNTP service #1, #2	ulong	No	2000, 2003	--
Article Map Entries/sec (ARTICLE_MAP_ENTRIES _PER_SEC)	Rate (num./second) at which entries were inserted in the article mapping table of the NNTP service	float	No	2000, 2003	--
Articles Posted/sec (ARTICLES_POSTED_PER _SEC)	Rate (num./second) at which articles were posted to the NNTP service	float	No	2000, 2003	--
Articles Rcvd/sec (ARTICLES_RECEIVED_P ER_SEC)	Rate (num./second) at which the NNTP service received the total number of article files	float	No	2000, 2003	--
Articles Sent/sec (ARTICLES_SENT_PER_S EC)	Rate (num /second) at which the NNTP service sent the total number of article files	float	No	2000, 2003	--
Bytes Rcvd/sec (BYTES_RECEIVED_PER_ SEC)	Rate (bytes/second) at which the NNTP service received data	float	No	2000, 2003	--
Bytes Sent/sec (BYTES_SENT_PER_SEC)	Rate (bytes/second) at which the NNTP service sent data	float	No	2000, 2003	--
Bytes Total/sec (BYTES_TOTAL_PER_SEC )	Rate (bytes/second) at which the NNTP service sent or received data. This value is the sum of the Bytes Sent/sec and Bytes Rcvd/sec fields.	float	No	2000, 2003	--

NNTP Server (PI_NWSS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Current Anonymous Users (CURRENT_ANONYMOUS_USERS)	Number of anonymous users connected to the NNTP service #1. #2	ulong	No	2000, 2003	--
Current Articles (CURRENT_ARTICLES)	Number of article files sent or received by the NNTP service. This value is the sum of the Current Articles Sent and Current Articles Rcvd fields. #2	ulong	No	2000, 2003	TOTAL_ARTICLES (T1) - TOTAL_ARTICLES (T0)
Current Articles Deleted (CURRENT_ARTICLES_DELETED)	Number of articles deleted #2	ulong	No	2000, 2003	TOTAL_ARTICLES_DELETED (T1) - TOTAL_ARTICLES_DELETED (T0)
Current Articles Posted (CURRENT_ARTICLES_POSTED)	Number of articles posted to the NNTP service #2	ulong	No	2000, 2003	TOTAL_ARTICLES_POSTED (T1) - TOTAL_ARTICLES_POSTED (T0)
Current Articles Rcvd (CURRENT_ARTICLES_RECEIVED)	Number of article files received by the NNTP service #2	ulong	No	2000, 2003	TOTAL_ARTICLES_RECEIVED (T1) - TOTAL_ARTICLES_RECEIVED (T0)
Current Articles Sent (CURRENT_ARTICLES_SENT)	Number of article files sent by the NNTP service #2	ulong	No	2000, 2003	TOTAL_ARTICLES_SENT (T1) - TOTAL_ARTICLES_SENT (T0)
Current Conns (CURRENT_CONNECTIONS)	Number of connections established for the NNTP service #1. #2	ulong	No	2000, 2003	--
Current Control Messages Failed (CURRENT_CONTROL_MESSAGES_FAILED)	Number of control messages failed or not applied by the NNTP service #2	ulong	No	2000, 2003	TOTAL_CONTROL_MESSAGES_FAILED (T1) - TOTAL_CONTROL_MESSAGES_FAILED (T0)

NNTP Server (PI_NWSS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Current Control Messages Rcvd (CURRENT_CONTROL_MESSAGES_RECEIVED)	Number of control messages received by the NNTP service #2	ulong	No	2000, 2003	TOTAL_CONTROL_MESSAGES_RECEIVED (T1) - TOTAL_CONTROL_MESSAGES_RECEIVED (T0)
Current Failed Outbound Logons (CURRENT_FAILED_OUTBOUND_LOGONS)	Number of failed outbound logon attempts to the NNTP service #2	ulong	No	2000, 2003	TOTAL_FAILED_OUTBOUND_LOGONS (T1) - TOTAL_FAILED_OUTBOUND_LOGONS (T0)
Current Moderated Postings Failed (CURRENT_MODERATED_POSTINGS_FAILED)	Number of moderated postings for which transmission attempts by the NNTP service to the SMTP server failed #2	ulong	No	2000, 2003	TOTAL_MODERATED_POSTINGS_FAILED (T1) - TOTAL_MODERATED_POSTINGS_FAILED (T0)
Current Moderated Postings Sent (CURRENT_MODERATED_POSTINGS_SENT)	Number of moderated postings sent by the NNTP service to the SMTP server #2	ulong	No	2000, 2003	TOTAL_MODERATED_POSTINGS_SENT (T1) - TOTAL_MODERATED_POSTINGS_SENT (T0)
Current NonAnonymous Users (CURRENT_NONANONYMOUS_USERS)	Number of nonanonymous users connected to the NNTP service. Where valid authentication data is returned by the client following rejection of an anonymous connection request, the connection is counted as nonanonymous. #1, #2	ulong	No	2000, 2003	--
Current Outbound Conns (CURRENT_OUTBOUND_CONNECTIONS)	Number of outbound connections by the NNTP service #1, #2	ulong	No	2000, 2003	--

NNTP Server (PI_NWSS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Current Outbound Conns Failed (CURRENT_OUTBOUND_CONNS_FAILED)	Number of failed outbound connections by the NNTP service #2	ulong	No	2000, 2003	TOTAL_OUTBOUND_CONNECTIONS_FAILED (T1) - TOTAL_OUTBOUND_CONNECTIONS_FAILED (T0)
Current Passive Feeds (CURRENT_PASSIVE_FEEDS)	Number of passive feeds received by the NNTP service #2	ulong	No	2000, 2003	TOTAL_PASSIVE_FEEDS (T1) - TOTAL_PASSIVE_FEEDS (T0)
Current Pull Feeds (CURRENT_PULL_FEEDS)	Number of pull feeds created by the NNTP service #2	ulong	No	2000, 2003	CURRENT_PULL_FEEDS (T1) - CURRENT_PULL_FEEDS (T0)
Current Push Feeds (CURRENT_PUSH_FEEDS)	Number of push feeds created by the NNTP service #2	ulong	No	2000, 2003	TOTAL_PUSH_FEEDS (T1) - TOTAL_PUSH_FEEDS (T0)
Current SSL Conns (CURRENT_SSL_CONNECTIONS)	Number of SSL (Secure Sockets Layer) connections to the NNTP service #2	ulong	No	2000, 2003	TOTAL_SSL_CONNECTIONS (T1) - TOTAL_SSL_CONNECTIONS (T0)
History Map Entries (HISTORY_MAP_ENTRIES)	Number of entries inserted into the historical mapping table of the NNTP service #1, #2	ulong	No	2000, 2003	--
History Map Entries/sec (HISTORY_MAP_ENTRIES_PER_SEC)	Rate (num./second) at which entries were inserted into the historical mapping table of the NNTP service	float	No	2000, 2003	--
Instance (INSTANCE)	Instance name for the NNTP site. Instance names are numbers starting with 1.	string(256)	No	2000, 2003	--

NNTP Server (PI_NWSS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the last collected value is displayed.	ulong	No	2000, 2003	RECORD_TIME (T1) - RECORD_TIME (T0)
Interval2 (INTERVAL2)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000, 2003	RECORD_TIME (T1) - RECORD_TIME (T0)
Max Anonymous Users (MAXIMUM_ANONYMOUS_USERS)	Maximum number of anonymous users who connected concurrently to the NNTP service since the service started #1, #3	ulong	No	2000, 2003	--
Max Conns (MAXIMUM_CONNECTIONS)	Maximum number of concurrent connections to the NNTP service since the service started #1, #3	ulong	No	2000, 2003	--

NNTP Server (PI_NWSS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Max NonAnonymous Users (MAXIMUM_NONANONYMOUS_USERS)	Maximum number of nonanonymous users who connected concurrently to the NNTP service since the service started  Where valid authentication data is returned by the client following rejection of an anonymous connection request, the connection is counted as nonanonymous #1, #3	ulong	No	2000, 2003	--
Overall Articles Deleted/sec (OVERALL_ARTICLES_DELETED_PER_SEC)	Rate (num./second) at which total articles were deleted since the NNTP service started #3	float	No	2000, 2003	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003	--
Record Type (INPUT_RECORD_TYPE)	Record name (always NWSS)	char(8)	No	2000, 2003	--
Sessions Flow Controlled (SESSIONS_FLOW_CONTROLLED)	Number of client sessions for which the NNTP service is used to control processing #1, #2	ulong	No	2000, 2003	--
Total Anonymous Users (TOTAL_ANONYMOUS_USERS)	Total number of anonymous users who connected concurrently to the NNTP service since the service started #1, #3	ulong	No	2000, 2003	--

NNTP Server (PI_NWSS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Total Articles (TOTAL_ARTICLES)	Total number of article files sent or received by the NNTP service. This value is the sum of the Total Articles Sent and Total Articles Rcvd fields. #1, #3	ulong	No	2000, 2003	--
Total Articles Deleted (TOTAL_ARTICLES_DELETED)	Total number of articles deleted since the NNTP service started #1, #3	ulong	No	2000, 2003	--
Total Articles Posted (TOTAL_ARTICLES_POSTED)	Total number of articles posted to the NNTP service #1, #3	ulong	No	2000, 2003	--
Total Articles Rcvd (TOTAL_ARTICLES_RECEIVED)	Total number of article files received by the NNTP service #1, #3	ulong	No	2000, 2003	--
Total Articles Sent (TOTAL_ARTICLES_SENT)	Total number of article files sent by the NNTP service #1, #3	ulong	No	2000, 2003	--
Total Conns (TOTAL_CONNECTIONS)	Total number of connections established concurrently to the NNTP service since the service started #1, #3	ulong	No	2000, 2003	--
Total Control Msgs Failed (TOTAL_CONTROL_MESSAGES_FAILED)	Total number of control messages failed or not applied for the NNTP service #1, #3	ulong	No	2000, 2003	--
Total Control Msgs Rcvd (TOTAL_CONTROL_MESSAGES_RECEIVED)	Total number of control messages received by the NNTP service #1, #3	ulong	No	2000, 2003	--
Total Failed Outbound Logons (TOTAL_FAILED_OUTBOUND_LOGONS)	Total number of failed outbound logon attempts to the NNTP service #1, #3	ulong	No	2000, 2003	--

NNTP Server (PI_NWSS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Total Moderated Postings Failed (TOTAL_MODERATED_POSTINGS_FAILED)	Total number of moderated postings for which transmission by the NNTP service to the SMTP server failed #1, #3	ulong	No	2000, 2003	--
Total Moderated Postings Sent (TOTAL_MODERATED_POSTINGS_SENT)	Total number of moderated postings sent by the NNTP service to the SMTP server #1, #3	ulong	No	2000, 2003	--
Total NonAnonymous Users (TOTAL_NONANONYMOUS_USERS)	Total number of nonanonymous users who connected concurrently to the NNTP service since the service started.  Where valid authentication data is returned by the client following rejection of an anonymous connection request, the connection is counted as nonanonymous. #1, #3	ulong	No	2000, 2003	--
Total Outbound Conns (TOTAL_OUTBOUND_CONNECTIONS)	Total number of outbound connections by the NNTP service, since the service started #1, #3	ulong	No	2000, 2003	--
Total Outbound Conns Failed (TOTAL_OUTBOUND_CONNECTIONS_FAILED)	Total number of failed outbound connections by the NNTP service, since the service started #1, #3	ulong	No	2000, 2003	--
Total Passive Feeds (TOTAL_PASSIVE_FEEDS)	Total number of passive feeds received by the NNTP service #1, #3	ulong	No	2000, 2003	--

NNTP Server (PI_NWSS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Total Pull Feeds (TOTAL_PULL_FEEDS)	Total number of pull feeds created by the NNTP service #1, #3	ulong	No	2000, 2003	--
Total Push Feeds (TOTAL_PUSH_FEEDS)	Total number of push feeds created by the NNTP service #1, #3	ulong	No	2000, 2003	--
Total SSL Conns (TOTAL_SSL_CONNECTIONS)	Total number of SSL connections to the NNTP service, since the service started #1, #3	ulong	No	2000, 2003	--
Xover Entries (XOVER_ENTRIES)	Number of Xover entries inserted into the Xover hash table of the NNTP service #1, #2	ulong	No	2000, 2003	--
Xover Entries/sec (XOVER_ENTRIES_PER_SEC)	Rate (num./second) at which Xover entries were inserted into the Xover hash table of the NNTP service	float	No	2000, 2003	--

## 2.8.30 Page File Detail (PD\_PAGF)

### Function

The Page File Detail (PD\_PAGF) record stores performance data indicating the status (at a specific point in time) of the instances of paging file in the system. A paging file is an area reserved on disk, to which committed physical memory is backed up.

This is a multi-instance record.

Table 2.85 Page File Detail (PD\_PAGF) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

Instance (INSTANCE)

### Lifetime

From the virtual memory paging file setup to the modification of its settings.

### Record Size

- Fixed part: 681 bytes
- Variable part: 264 bytes

Table 2.86 Page File Detail (PD\_PAGF) Fields

Page File Detail (PD_PAGF)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
% Usage (PCT_USAGE)	Rate (%) of paging file usage #1	float	No	2000, 2003, 2003 (IPF)	--
% Usage Peak (PCT_USAGE_PEAK)	Rate (%) of peak paging file usage #1	float	No	2000, 2003, 2003 (IPF)	--
Instance (INSTANCE)	File path of the paging file (displayed, e.g., as \\??\C:\pagefile.sys)	string(256 )	No	2000, 2003, 2003 (IPF)	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records. For real-time reports, the initial value is 5.	ulong	No	2000, 2003, 2003 (IPF)	RECORD_ TIME (T1) - RECORD_ TIME (T0)
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003, 2003 (IPF)	--
Record Type (INPUT_RECORD_TYPE)	Record name (always PAGEF)	char(8)	No	2000, 2003, 2003 (IPF)	--

## 2.8.31 Physical Disk Overview (PI\_PHYD)

### Function

The Physical Disk Overview (PI\_PHYD) record stores performance data, taken at specific intervals, about read, write, and transfer operations for hard disks or fixed disk drives. For physical disks, this is the total value or average value for split logical partitions.

This is a multi-instance record.

### Notes:

- To collect this record in Windows 2000, execute the `diskperf -y` command from the Command Prompt and restart the OS.
- Performance data for this record can no longer be collected when the number of drives in a Windows 2000 Service Pack 4 system exceeds 26 or when the number of drives in a Windows Server 2003 system exceeds 39.

If this occurs, performance data can no longer be collected for the `PhysicalDisk` object displayed by **System Monitor** and **Performance Logs and Alerts** in the Performance console.

For details about how to check the number of drives in a system, and for a workaround to this program, see section 2.6.2.

- When adding or deleting a physical disk while these records are being collected, or while the counter for physical disk objects are being monitored using **System Monitor** or **Performance Log and Warnings** in the Performance Console, which is one of the administration tools for Windows, restart the Agent Collector service.
- If the ID (INSTANCE) field is not applied on the physical disk even when the Agent Collector service is restarted, restart the OS to ensure that collected records contain all the required items.

Table 2.87 Physical Disk Overview (PI\_PHYD) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	Yes	Yes
LOGIF	(Blank)	

### Key Fields

ID (INSTANCE)

### Lifetime

From the virtual memory paging file setup to the modification of its settings.

## Record Size

- Fixed part: 681 bytes
- Variable part: 596 bytes

Table 2.88 Physical Disk Overview (PI\_PHYD) Fields

Physical Disk Overview (PI_PHYD)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
% Disk Read Time (PCT_DISK_READ_TIME)	Rate (%) of the time during which the disk was busy processing read requests	float	No	2000, 2003, 2003 (IPF)	--
% Disk Time (PCT_DISK_TIME)	Rate (%) of the time a disk was busy processing read or write requests. Usually, if this rate is continuously near 100%, it indicates that the disk is being used excessively.	float	No	2000, 2003, 2003 (IPF)	--
% Disk Write Time (PCT_DISK_WRITE_TIME)	Rate (%) of the time that the disk was busy processing write requests	float	No	2000, 2003, 2003 (IPF)	--
% Idle Time (PCT_IDLE_TIME)	Rate (%) of the time that the disk was idle	float	No	2000, 2003, 2003 (IPF)	--
Avg Disk Bytes/Read (AVG_DISK_BYTES_PER_READ)	Average rate (bytes/operation) at which data was transferred from the disk during read processing	float	No	2000, 2003, 2003 (IPF)	--
Avg Disk Bytes/Write (AVG_DISK_BYTES_PER_WRITE)	Average rate (bytes/operation) at which data was transferred from the disk during write processing	float	No	2000, 2003, 2003 (IPF)	--
Avg Disk Bytes/Xfer (AVG_DISK_BYTES_PER_TRANSFER)	Average rate (bytes/operation) at which data was transferred between disks during write or read processing. Usually, a large value indicates that the system is operating efficiently.	float	No	2000, 2003, 2003 (IPF)	--
Avg Disk Queue Length (AVG_DISK_QUEUE_LENGTH)	Average number of read or write requests placed in the disk queue	ulong	No	2000, 2003, 2003 (IPF)	--

Physical Disk Overview (PI_PHYD)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Avg Disk Read Queue Length (AVG_DISK_READ_QUEUE_LENGTH)	Average number of read requests placed in the disk queue	ulong	No	2000, 2003, 2003 (IPF)	--
Avg Disk Secs/Read (AVG_DISK_SEC_PER_READ)	Average time (in seconds) required to read data from the disk	float	No	2000, 2003, 2003 (IPF)	--
Avg Disk Secs/Write (AVG_DISK_SEC_PER_WRITE)	Average time (in seconds) required to write data to the disk	float	No	2000, 2003, 2003 (IPF)	--
Avg Disk Secs/Xfer (AVG_DISK_SEC_PER_TRANSFER)	Average time (in seconds) for disk transfer processing	float	No	2000, 2003, 2003 (IPF)	--
Avg Disk Write Queue Length (AVG_DISK_WRITE_QUEUE_LENGTH)	Average number of write requests placed in the disk queue	ulong	No	2000, 2003, 2003 (IPF)	--
Current Disk Queue Length (CURRENT_DISK_QUEUE_LENGTH)	Number of queue requests waiting for processing or being processed and remaining on the disk. If the queue length continuously exceeds 2, it indicates that the disk is congested. #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Disk Bytes/sec (DISK_BYTES_PER_SEC)	Rate (bytes/second) at which data was transferred between disks during write or read processing.  Usually, a fast transfer rate indicates that the system is operating efficiently.	float	No	2000, 2003, 2003 (IPF)	--
Disk Read Bytes/sec (DISK_READ_BYTES_PER_SEC)	Rate (bytes/second) at which data was transferred to the disk during read processing	float	No	2000, 2003, 2003 (IPF)	--
Disk Reads/sec (DISK_READS_PER_SEC)	Rate (num./second) at which read operations were performed on the disk	float	No	2000, 2003, 2003 (IPF)	--
Disk Write Bytes/sec (DISK_WRITE_BYTES_PER_SEC)	Rate (bytes/second) at which data was transferred to the disk during write processing	float	No	2000, 2003, 2003 (IPF)	--
Disk Writes/sec (DISK_WRITES_PER_SEC)	Rate (num./second) at which write operations were performed on the disk	float	No	2000, 2003, 2003 (IPF)	--

Physical Disk Overview (PI_PHYD)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Disk Xfers/sec (DISK_TRANSFERS_PER_SEC)	Rate (num./second) of read and write operations on the disk	float	No	2000, 2003, 2003 (IPF)	--
ID (INSTANCE)	Physical disk number	string(256)	No	2000, 2003, 2003 (IPF)	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the last collected value is displayed.	ulong	No	2000, 2003, 2003 (IPF)	RECORD_TIME (T1) - RECORD_TIME (T0)
Interval2 (INTERVAL2)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000, 2003, 2003 (IPF)	RECORD_TIME (T1) - RECORD_TIME (T0)
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003, 2003 (IPF)	--
Record Type (INPUT_RECORD_TYPE)	Record name (always PHYD)	char(8)	No	2000, 2003, 2003 (IPF)	--
Split IO/Sec (SPLIT_IO_PER_SEC)	Rate (num./second) at which disk I/O operations were split into multiple I/O operations. An I/O operation is split when an I/O is too big to be stored, or when the disk requests data of a fragmented size.	float	No	2000, 2003, 2003 (IPF)	--

## 2.8.32 Process Detail (PD)

### Function

The Process Detail (PD) record stores performance data indicating the status (at a specific point-in-time) of a single process, such as paging, memory, and time utilization status. A process is a program that is being executed at the time of collection.

While a process or Agent for Platform is active, each time this record is collected the system creates a record for each new process that has become active. If the refresh interval is the same, the performance data stored in this record is the same as that for Process Detail Interval (PD\_PDI) records. If two sets of performance data are collected in succession for the same process, the system stores both sets in the same record, overwriting the values in the database. This differentiates this record from the Process Detail Interval (PD\_PDI) record. Process Detail (PD) is a multi-instance record.

### Notes:

- Here, a process means a program being executed at the time of collection.
- During the collection interval, if new records corresponding to the Program (INSTANCE) field are generated, because the value of this field is calculated from previously collected information, the initial value is displayed as 0.
  - 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 Program (INSTANCE) field of this record is `System` or `Idle`, the Elapsed Time (ELAPSED\_TIME) field may not be collected properly. In this case, since the value of the Elapsed Time (ELAPSED\_TIME) field for `System` or `Idle` is close to System Up Time (SYSTEM\_UP\_TIME) for the System Overview (PI) record, use that instead.

Table 2.89 Process Detail (PD) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

- Program (INSTANCE)
- PID (ID\_PROCESS)

### Lifetime

From the execution to the termination of a process.

### Record Size

- Fixed part: 681 bytes
- Variable part: 392 bytes

Table 2.90 Process Detail (PD) Fields

Process Detail (PD)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
CPU % (PCT_PROCESSOR_TIME)	Rate (%) of the time during which the process used the processor. In a multi-processor environment, usage where <i>number of processors</i> * 100% is the maximum value is displayed.	float	No	2000, 2003, 2003 (IPF)	--
Creating Process ID (PROCESS_ID)	Process ID of the process that started this process #1	ulong	No	2000, 2003, 2003 (IPF)	--
Elapsed Time (ELAPSED_TIME)	Total time (in seconds) elapsed for process execution #1	ulong	No	2000, 2003, 2003 (IPF)	--

Process Detail (PD)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Handle Count (HANDLE_COUNT)	Number of handles opened by the process #1	ulong	No	2000, 2003, 2003 (IPF)	--
IO Data Bytes/sec (IO_DATA_BYTES_PER_SEC)	Rate (bytes/second) at which data was read or written for all I/O operations generated by the process.	float	No	2000, 2003, 2003 (IPF)	--
IO Data Operations/sec (IO_DATA_OPERATIONS_PER_SEC)	Rate (num./second) at which read or write operations were performed for all I/O operations generated by the process	float	No	2000, 2003, 2003 (IPF)	--
IO Other Bytes/sec (IO_OTHER_BYTES_PER_SEC)	Rate (bytes/second) at which data was transferred for operations other than read or write operations (e.g., control function operations), for all I/O operations generated by the process	float	No	2000, 2003, 2003 (IPF)	--
IO Other Operations/sec (IO_OTHER_OPERATIONS_PER_SEC)	Rate (num./second) at which operations other than read or write operations (e.g., control function operations) were performed, for all I/O operations generated by the process	float	No	2000, 2003, 2003 (IPF)	--
IO Read Bytes/sec (IO_READ_BYTES_PER_SEC)	Rate (bytes/second) at which data was read, for all I/O operations generated by the process	float	No	2000, 2003, 2003 (IPF)	--

Process Detail (PD)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
IO Read Operations/sec (IO_READ_OPERATIONS_PER_SEC)	Rate (num./second) at which read operations were performed, for all I/O operations generated by the process	float	No	2000, 2003, 2003 (IPF)	--
IO Write Bytes/sec (IO_WRITE_BYTES_PER_SEC)	Rate (bytes/second) at which data was written, for all I/O operations generated by the process	float	No	2000, 2003, 2003 (IPF)	--
IO Write Operations/sec (IO_WRITE_OPERATIONS_PER_SEC)	Rate (num./second) at which write operations were performed, for all I/O operations generated by the process	float	No	2000, 2003, 2003 (IPF)	--
Interval (INTERVAL)	This is always 0.	ulong	No	2000, 2003, 2003 (IPF)	--
PID (ID_PROCESS)	Process ID. Unique identifier of the process being executed.	ulong	No	2000, 2003, 2003 (IPF)	--
Page Faults/sec (PAGE_FAULTS_PER_SEC)	Rate (num./second) at which page faults occurred in the process	float	No	2000, 2003, 2003 (IPF)	--
Page File Kbytes (PAGE_FILE_BYTES)	Size (in kilobytes) of virtual memory used by the process in the paging file #1	double	No	2000, 2003, 2003 (IPF)	ReturnVa lue / 1KB
Page File Kbytes Peak (PAGE_FILE_BYTES_PEAK)	Maximum size (in kilobytes) of virtual memory used by the process in the paging file #1	double	No	2000, 2003, 2003 (IPF)	ReturnVa lue / 1KB
Pool Nonpaged Kbytes (POOL_NONPAGED_BYTES)	Size (in kilobytes) of unpageable memory used by the process #1	ulong	No	2000, 2003, 2003 (IPF)	ReturnVa lue / 1KB

Process Detail (PD)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Pool Paged Kbytes (POOL_PAGED_BYTES)	Size (in kilobytes) of pageable memory used by the process #1	ulong	No	2000, 2003, 2003 (IPF)	ReturnVa lue / 1KB
Priority Base (PRIORITY_BASE)	Base priority of the process. The larger the value, the higher the base priority. The values are follows: <ul style="list-style-type: none"> <li>▪ 24: Real-time</li> <li>▪ 13: High</li> <li>▪ 10: Greater than normal</li> <li>▪ 8: Normal</li> <li>▪ 6: Less than normal</li> <li>▪ 4: Low</li> </ul>	ulong	No	2000, 2003, 2003 (IPF)	ReturnVa lue / 1KB
Private Kbytes (PRIVATE_BYTES)	Size (in kilobytes) of memory allocated by the process so that other processes cannot share it. #1	double	No	2000, 2003, 2003 (IPF)	ReturnVa lue / 1KB
Privileged CPU % (PCT_PRIVILEGED_TIME)	Rate (%) of the elapsed time during which the process used the processor in privilege mode. In a multi-processor environment, usage where <i>number of processors</i> * 100% is the maximum value is displayed.	float	No	2000, 2003, 2003 (IPF)	--
Program (INSTANCE)	Name of the executable program	string(256)	No	2000, 2003, 2003 (IPF)	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003, 2003 (IPF)	--
Record Type (INPUT_RECORD_TYPE)	Record name (always PD)	char(8)	No	2000, 2003, 2003 (IPF)	--

Process Detail (PD)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Thread Count (THREAD_COUNT)	Number of threads (units for instruction execution) in the process. If the process is executed, at least one thread is started. #1	ulong	No	2000, 2003, 2003 (IPF)	--
User CPU % (PCT_USER_TIME)	Rate (%) of the elapsed time during which the process used the processor in user mode. In a multi-processor environment, usage where <i>number of processors</i> * 100% is the maximum value is displayed	float	No	2000, 2003, 2003 (IPF)	--
Virtual Kbytes (VIRTUAL_BYTES)	Size (in kilobytes) of virtual address space used by the process #1	double	No	2000, 2003, 2003 (IPF)	ReturnVa lue / 1KB
Virtual Kbytes Peak (VIRTUAL_BYTES_P EAK)	Maximum size (in kilobytes) of virtual address space used by the process #1	double	No	2000, 2003, 2003 (IPF)	ReturnVa lue / 1KB
Working Set Kbytes (WORKING_SET)	Size (in kilobytes) of memory usage (this usage indicates the total amount of memory or the amount of memory that can be referenced without a page fault and is also called the <i>working set</i> ) used by the process. #1	double	No	2000, 2003, 2003 (IPF)	ReturnVa lue / 1KB

Process Detail (PD)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Working Set Kbytes Peak (WORKING_SET_PEA K)	Maximum size (in kilobytes) of memory usage (this usage indicates the total amount of memory or the amount of memory that can be referenced without a page fault and is also called the <i>working set</i> ) used by the process. #1	double	No	2000, 2003, 2003 (IPF)	ReturnVa lue / 1KB

### 2.8.33 Process Detail Interval (PD\_PDI)

#### Function

The Process Detail Interval (PD\_PDI) record stores performance data indicating the status (at a specific point in time) of a single process, such as paging, memory, and time utilization status.

While a process or Agent for Platform is active, each time this record is collected the system creates a record for each new process that has become active. If the refresh interval is the same, the performance data stored in this record is the same as that for Process Detail (PD) records. If two sets of performance data are collected in succession for the same process, the system does not store both sets in the same record, (the values are not overwritten in the database) and the new records are stored in the database. This differentiates this record from the Process Detail (PD) record. This is a multi-instance record.

#### Notes:

- Here, a process means a program being executed at the time of collection.
- During the collection interval, if new records corresponding to the Program (INSTANCE) field are generated, because the value of this field is calculated from previously collected information, the initial value is displayed as 0.
  - 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 Program (INSTANCE) field of this record is *System* or *Idle*, the Elapsed Time (ELAPSED\_TIME) field may not be collected properly. In this case, since the value of the Elapsed Time (ELAPSED\_TIME) field for *System* or *Idle* is close to System Up Time (SYSTEM\_UP\_TIME) for the System Overview (PI) record, use that instead.

Table 2.91 Process Detail Interval (PD\_PDI) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

- Program (INSTANCE)
- PID (ID\_PROCESS)

### Lifetime

From the execution to the termination of a process.

### Record Size

- Fixed part: 681 bytes
- Variable part: 428 bytes

Table 2.92 Process Detail Interval (PD\_PDI) Fields

Process Detail Interval (PD_PDI)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
CPU % (PCT_PROCESSOR_TIME)	Rate (%) of the elapsed time during which the process used the processor. In a multi-processor environment, usage where <i>number of processors</i> * 100% is the maximum value is displayed.	float	No	2000, 2003, 2003 (IPF)	--
Creating Process ID (PROCESS_ID)	Process ID that started the process #1	float	No	2000, 2003, 2003 (IPF)	--
Elapsed Time (ELAPSED_TIME)	Total time (in seconds) elapsed for process execution #1	ulong	No	2000, 2003, 2003 (IPF)	--
Handle Count (HANDLE_COUNT)	Number of handles opened by the process #1	ulong	No	2000, 2003, 2003 (IPF)	--

Process Detail Interval (PD_PDI)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
IO Data Bytes/sec (IO_DATA_BYTES_PER_SEC)	Rate (bytes/second) at which data was read or written for all I/O operations generated by the process.	float	No	2000, 2003, 2003 (IPF)	--
IO Data Operations/sec (IO_DATA_OPERATIONS_PER_SEC)	Rate (num./second) at which read or write operations were performed, for all I/O operations generated by the process.	float	No	2000, 2003, 2003 (IPF)	--
IO Other Bytes/sec (IO_OTHER_BYTES_PER_SEC)	Rate (bytes/second) at which data was transferred in operations other than read or write operations (e.g., control function operations), for all I/O operations generated by the process.	float	No	2000, 2003, 2003 (IPF)	--
IO Other Operations/sec (IO_OTHER_OPERATIONS_PER_SEC)	Rate (num./second) at which operations other than read or write operations (e.g., control function operations) were performed, for all I/O operations generated by the process.	float	No	2000, 2003, 2003 (IPF)	--
IO Read Bytes/sec (IO_READ_BYTES_PER_SEC)	Rate (bytes/second) at which data was read, for all I/O operations generated by the process	float	No	2000, 2003, 2003 (IPF)	--
IO Read Operations/sec (IO_READ_OPERATIONS_PER_SEC)	Rate (num./second) at which read operations were performed, for all I/O operations generated by the process	float	No	2000, 2003, 2003 (IPF)	--
IO Write Bytes/sec (IO_WRITE_BYTES_PER_SEC)	Rate (bytes/second) at which data was written, for all I/O operations generated by the process	float	No	2000, 2003, 2003 (IPF)	--
IO Write Operations/sec (IO_WRITE_OPERATIONS_PER_SEC)	Rate (num./second) at which write operations were performed, for all I/O operations generated by the process	float	No	2000, 2003, 2003 (IPF)	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5.	ulong	No	2000, 2003, 2003 (IPF)	RECORD_TIME (T1) - RECORD_TIME (T0)

Process Detail Interval (PD_PDI)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
PID (ID_PROCESS)	Process ID. Unique identifier of the process being executed.	ulong	No	2000, 2003, 2003 (IPF)	--
Page Faults/sec (PAGE_FAULTS_PER_SEC)	Rate (num./second) at which a page fault occurred in the process	float	No	2000, 2003, 2003 (IPF)	--
Page File Kbytes (PAGE_FILE_BYTES)	Size (in kilobytes) of the virtual memory used by the process in the paging file #1	double	No	2000, 2003, 2003 (IPF)	ReturnVa lue / 1KB
Page File Kbytes Peak (PAGE_FILE_BYTES_PEA K)	Maximum size (in kilobytes) of the virtual memory used by the process in the paging file #1	double	No	2000, 2003, 2003 (IPF)	ReturnVa lue / 1KB
Pool Nonpaged Kbytes (POOL_NONPAGED_BYTES)	Size (in kilobytes) of unpageable memory used by the process #1	ulong	No	2000, 2003, 2003 (IPF)	ReturnVa lue / 1KB
Pool Paged Kbytes (POOL_PAGED_BYTES)	Size (in kilobytes) of pageable memory used by the process #1	ulong	No	2000, 2003, 2003 (IPF)	ReturnVa lue / 1KB
Priority Base (PRIORITY_BASE)	Base priority of the process. The larger the value, the higher the base priority. The values are follows: <ul style="list-style-type: none"> <li>▪ 24: Real-time</li> <li>▪ 13: High</li> <li>▪ 10: Greater than normal</li> <li>▪ 8: Normal</li> <li>▪ 6: Less than normal</li> <li>▪ 4: Low</li> </ul>	ulong	No	2000, 2003, 2003 (IPF)	--
Private Kbytes (PRIVATE_BYTES)	Size (in kilobytes) of memory allocated by the process so that other processes cannot share it #1	double	No	2000, 2003, 2003 (IPF)	ReturnVa lue / 1KB
Privileged CPU % (PCT_PRIVILEGED_TIME)	Rate (%) of the elapsed time during which the process used the processor in privilege mode. In a multi-processor environment, usage where <i>number of processors</i> * 100% is the maximum value is displayed.	float	No	2000, 2003, 2003 (IPF)	--
Program (INSTANCE)	Name of the executable program	string(256)	No	2000, 2003, 2003 (IPF)	--

Process Detail Interval (PD_PDI)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003, 2003 (IPF)	--
Record Type (INPUT_RECORD_TYPE)	Record name (always PDI)	char(8)	No	2000, 2003, 2003 (IPF)	--
Thread Count (THREAD_COUNT)	Number of threads (unit for instruction execution) in the process. If the process is executed, at least one thread is started. #1	ulong	No	2000, 2003, 2003 (IPF)	--
User (USER_NAME)	Name of the executable process. If the account name corresponding to the security ID of the process is not found, NONE_MAPPED is stored. If this user name cannot be obtained from the process ID, Unknown is stored.	string(36)	No	2000, 2003, 2003 (IPF)	--
User CPU % (PCT_USER_TIME)	Rate (%) of the elapsed time during which the process used the processor in user mode. In a multi-processor environment, usage where <i>number of processors</i> * 100% is the maximum value is displayed.	float	No	2000, 2003, 2003 (IPF)	--
Virtual Kbytes (VIRTUAL_BYTES)	Size (in kilobytes) of virtual address space used by the process #1	double	No	2000, 2003, 2003 (IPF)	ReturnVa lue / 1KB
Virtual Kbytes Peak (VIRTUAL_BYTES_PEAK)	Maximum size (in kilobytes) of virtual address space used by the process #1	double	No	2000, 2003, 2003 (IPF)	ReturnVa lue / 1KB
Working Set Kbytes (WORKING_SET)	Size (in kilobytes) of memory usage (this usage indicates the total amount of memory or the amount of memory that can be referenced without page fault and is also called a <i>working set</i> ) used by the process. #1	double	No	2000, 2003, 2003 (IPF)	ReturnVa lue / 1KB

Process Detail Interval (PD_PDI)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Working Set Kbytes Peak (WORKING_SET_PEAK)	Maximum size (in kilobytes) of memory usage (this usage indicates the total amount of memory or the amount of memory that can be referenced without page fault and is also called a <i>working set</i> ) used by the process. #1	double	No	2000, 2003, 2003 (IPF)	ReturnVa lue / 1KB

## 2.8.34 Process End Detail (PD\_PEND)

### Function

The Process End Detail (PD\_PEND) record stores performance data indicating the status (at a specific point in time) of a process that has ended. This is a multi-instance record.

### Notes:

- This record is not collected in real time.
- Each process indicates a program executed before collection.
- This record always monitors process performance data at 60-second intervals, using a separate timing from the Collection Interval, and up to 1,000 records are held internally by the service. As such, information about processes that terminated before 60 seconds elapsed is not collected.

**Note:** The data for terminated processes held in the service is stored in the Store database at each Collection Interval. As such, set a Collection Interval value so the number of terminated processes does not exceed 1,000.

- The performance data stored in these records is different than that stored in Process Detail (PD) and Process Detail Interval (PD\_PDI) records.

Table 2.93 Process End Detail (PD\_PEND) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

- PID (PROCESS\_ID)
- Program (PROCESS\_NAME)

### Lifetime

From the execution to the termination of a process.

### Record Size

- Fixed part: 681 bytes
- Variable part: 352 bytes

Table 2.94 Process End Detail (PD\_PEND) Fields

Process End Detail (PD_PEND)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
CPU % (PROCESSOR_PERCENT)	In the elapsed time, the rate (num./second) at which the processor was used to execute code by all process threads	float	No	2000, 2003, 2003 (IPF)	(USER_TIME + KERNEL_TIME) / (EXIT_TIME - CREATION_TIME )
Creation Time (CREATION_TIME)	Process creation time	time_t	No	2000, 2003, 2003 (IPF)	--
Elapsed Time (ELAPSED_TIME)	Total time (in seconds) elapsed for execution of the corresponding process	ulong	No	2000, 2003, 2003 (IPF)	EXIT_TIME - CREATION_TIME
Exit Code (EXIT_CODE)	Process exit code	long	No	2000, 2003, 2003 (IPF)	--
Exit Time (EXIT_TIME)	Process exit time	time_t	No	2000, 2003, 2003 (IPF)	--
Interval (INTERVAL)	This is always 0.	ulong	No	2000, 2003, 2003 (IPF)	--
Kernel Time (KERNEL_TIME)	Time (in seconds) used to execute code in kernel mode, so that system private data could be accessed	timeval	No	2000, 2003, 2003 (IPF)	--
PID (PROCESS_ID)	Process identifier	long	No	2000, 2003, 2003 (IPF)	--
Priority (PRIORITY)	Basic priority for the process. The values are as follows. <ul style="list-style-type: none"> <li>▪ REALTIME</li> <li>▪ HIGH</li> <li>▪ ABOVE-NORMAL</li> <li>▪ NORMAL</li> <li>▪ BELOW-NORMAL</li> <li>▪ IDLE</li> <li>▪ Not Applicable</li> </ul>	string(24)	No	2000, 2003, 2003 (IPF)	--

Process End Detail (PD_PEND)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Privileged CPU% (KERNEL_PERCENT)	Of the time elapsed, the rate (%/second) of time used by the process thread to execute code in kernel mode, to obtain access to system private data	float	No	2000, 2003, 2003 (IPF)	$KERNEL\_TIME / (EXIT\_TIME - CREATION\_TIME)$
Program (PROCESS_NAME)	Name of the executable program	string(26)	No	2000, 2003, 2003 (IPF)	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003, 2003 (IPF)	--
Record Type (INPUT_RECORD_TYPE)	Record name (always PEND)	char(8)	No	2000, 2003, 2003 (IPF)	--
Total CPU Time (TOTAL_CPU_TIME)	Time (in seconds) required to execute code in kernel mode and user mode	timeval	No	2000, 2003, 2003 (IPF)	USER_TIME + KERNEL_TIME
User CPU % (USER_PERCENT)	In the elapsed time, the rate (%/second) at which the process thread executed code in user mode	float	No	2000, 2003, 2003 (IPF)	$USER\_TIME / (EXIT\_TIME - CREATION\_TIME)$
User Time (USER_TIME)	Time (in seconds) used to execute code in user mode	utime	No	2000, 2003, 2003 (IPF)	--
Working Set Max Kbytes (WORKING_SET_MAX)	Process maximum working set size (in kilobytes)	double	No	2000, 2003, 2003 (IPF)	ReturnValue / 1KB
Working Set Min Kbytes (WORKING_SET_MIN)	Process minimum working set size (in kilobytes)	double	No	2000, 2003, 2003 (IPF)	ReturnValue / 1KB

## 2.8.35 Processor Overview (PI\_PCSR)

### Function

The Processor Overview (PI\_PCSR) record stores performance data, taken at specific intervals, about interrupt rates and time rates. Information stored in this record is as follows:

- Rate of execution of arithmetic and logical computations in each processor
- Rate of initialization of peripheral device operations
- Rate of process thread execution

This is a multi-instance record.

### Notes:

In multi-processor environments, the maximum value of the following fields displayed from `_Total` in the Instance (INSTANCE) field is 100:

- % DPC Time (PCT\_DPC\_TIME)
- % Interrupt Time (PCT\_INTERRUPT\_TIME)
- CPU % (PCT\_PROCESSOR\_TIME)
- Privileged CPU % (PCT\_PRIVILEGED\_TIME)
- User CPU % (PCT\_USER\_TIME)

Table 2.95 Processor Overview (PI\_PCSR) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

Instance (INSTANCE)

Lifetime

None

### Record Size

- Fixed part: 681 bytes
- Variable part: 532 bytes

Table 2.96 Processor Overview (PI\_PCSR) Fields

Processor Overview (PI_PCSR)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
% C1 Time (PCT_C1_TIME)	Rate (%) of the time that the processor was in the C1 low-power consumption status (C1 status).  In this low-power status, the processor retains all contexts, and can quickly return to execution status. 0 is always displayed for processors that do not support the C1 status.	float	No	2003, 2003(IPF)	--
% C2 Time (PCT_C2_TIME)	Rate (%) of the time that the processor was in the C2 low-power consumption status (C2 status).  The C2 status uses less power than the C1 status, since the processor keeps only the system cache context. 0 is always displayed for processors that do not support the C2 status.	float	No	2003	--
% C3 Time (PCT_C3_TIME)	Rate (%) of the time that the processor was in the C3 low-power consumption status (C3 status).  The C3 status uses less power than the C2 status, since the processor is not able to keep the system cache integrity. 0 is always displayed for processors that do not support the C3 status.	float	No	2003	--
% DPC Time (PCT_DPC_TIME)	Rate (%) of processor time used for executing privilege-mode DPC (deferred procedure call) interrupts, which are executed with lower priority than standard interrupts.	float	No	2000, 2003, 2003 (IPF)	--

Processor Overview (PI_PCSR)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
% Idle Time (PCT_IDLE_TIME)	Rate (%) of time that the processor was idle	float	No	2003, 2003 (IPF)	--
% Interrupt Time (PCT_INTERRUPT_TIME)	Rate (%) of time spent by the processor to process interrupts from hardware components (system clock, mouse, disk driver, data communication line, NIC, and other peripheral devices that can raise interrupts)	float	No	2000, 2003, 2003 (IPF)	--
APC Bypasses/sec (APC_BYPASSES_PER_SEC)	Rate (num./second) at which the processor avoided kernel APC (asynchronous procedure call) interrupts	float	No	2000	--
C1 Trans/sec (PCT_C1_TRANSITIONS_PER_SEC)	Rate (num./second) at which the processor entered the C1 low-power consumption status (C1 status).  If the processor is idle for long enough, it enters the C1 status, and exits the C1 status when an interrupt occurs. 0 is always displayed for processors that do not support the C1 status.	float	No	2003, 2003(IPF)	--
C2 Trans/sec (PCT_C2_TRANSITIONS_PER_SEC)	Rate (num./second) at which the processor entered the C2 low-power consumption status (C2 status).  If the processor is using less power than the C1 status, and is idle for long enough, it enters the C2 status, and exits the C2 status when an interrupt occurs. 0 is always displayed for processors that do not support the C2 status.	float	No	2003	--

Processor Overview (PI_PCSR)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
C3 Trans/sec (PCT_C3_TRANSITIONS_P ER_SEC)	Rate (num./second) at which the processor entered the C3 low-power consumption status (C3 status).  If the processor is using less power than the C2 status, and is idle for long enough, it enters the C3 status, and exits the C3 status when an interrupt occurs. 0 is always displayed for processors that do not support the C3 status.	float	No	2003	--
CPU % (PCT_PROCESSOR_TIME)	Processor usage (%). Rate of the elapsed time during which the processor executed non-idle threads.	float	No	2000, 2003, 2003 (IPF)	--
DPC Bypasses/sec (DPC_BYPASSES_PER_SEC )	Rate (num./second) at which the processor avoided privilege-mode DPC (deferred procedure call) interrupts, which are executed with lower priority than standard interrupts	float	No	2000	--
DPC Rate (DPC_RATE)	Average rate at which privilege-mode DPC (deferred procedure call) interrupts, which are executed with lower priority than standard interrupts, were added to the processor DPC queue between time ticks of the processor clock #1	ulong	No	2000, 2003, 2003 (IPF)	--
DPCs Queued/sec (DPCS_QUEUED_PER_SEC)	Average rate (num./second) at which privilege-mode DPC (deferred procedure call) interrupts, which are executed with lower priority than standard interrupts, were added to the processor DPC queue	float	No	2000, 2003, 2003 (IPF)	--

Processor Overview (PI_PCSR)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Instance (INSTANCE)	Instance name for the processor.  This is a number, beginning at 0.	string(256)	No	2000, 2003, 2003 (IPF)	--
Interrupts/sec (INTERRUPTS_PER_SEC)	Rate (num./second) at which the processor processed an interrupt received from hardware components (system clock, mouse, disk driver, data communication line, NIC, or other peripheral device that can raise interrupts).  DPC (deferred procedure call) interrupts are not included. Usually, if this value is extraordinarily high when there is no system activity, it suggests a hardware problem, including the presence of a slow device.	float	No	2000, 2003, 2003 (IPF)	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the last collected value is displayed.	ulong	No	2000, 2003, 2003 (IPF)	RECORD_TIME (T1) - RECORD_TIME (T0)
Interval2 (INTERVAL2)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000, 2003, 2003 (IPF)	RECORD_TIME (T1) - RECORD_TIME (T0)

Processor Overview (PI_PCSR)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Privileged CPU % (PCT_PRIVILEGED_TIME)	Usage (%) of the processor that executed threads in privilege mode. Rate of the elapsed time during which the processor executed non-idle threads in privilege mode.	float	No	2000, 2003, 2003 (IPF)	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003, 2003 (IPF)	--
Record Type (INPUT_RECORD_TYPE)	Record name (always PCSR)	char(8)	No	2000, 2003, 2003 (IPF)	--
User CPU % (PCT_USER_TIME)	Usage (%) of the processor that executed threads in user mode. Rate of the elapsed time during which the processor executed non-idle threads in user mode.	float	No	2000, 2003, 2003 (IPF)	--

## 2.8.36 Server Work Queues Overview (PI\_SVRQ)

### Function

The Server Work Queues Overview (PI\_SVRQ) record stores performance data, taken at specific intervals, about the length of the server queue and processing within the queue. This is a multi-instance record.

**Note:** If the server service provided by the OS (service name: LanmanServer) is stopped, this record cannot be collected.

Table 2.97 Server Work Queues Overview (PI\_SVRQ) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

Instance (INSTANCE)

### Lifetime

None

### Record Size

- Fixed part: 681 bytes
- Variable part: 532 bytes

Table 2.98 Server Work Queues Overview (PI\_SVRQ) Fields

Server Work Queues Overview (PI_SVRQ)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Active Threads (ACTIVE_THREADS)	Number of threads on the processor, processing requests from server clients.  Since the system keeps unnecessary context switches to a minimum, this value is kept as low as possible. #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--

Server Work Queues Overview (PI_SVRQ)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Available Threads (AVAILABLE_THREADS)	Number of server threads on the processor, not processing requests from clients.  The server dynamically adjusts the number of threads, to optimize server performance. #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Available Work Items (AVAILABLE_WORK_ITEMS)	Number of usable work items for the processor (in which all requests from clients are shown, and the server maintains a usable workspace for each processor to expedite processing).  Usually, a value other than 0 for an extended period means that the value of the MinFreeWorkItems registry item of the Server service needs to be increased.  If the instance field is Blocking Queue, this field is always 0. #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Borrowed Work Items (BORROWED_WORK_ITEMS)	Number of unused work items borrowed from another processor, when the usable work items for the processor (in which all requests from clients are shown, and the server maintains a usable workspace for each processor to expedite processing) run out.  Usually, a value that keeps increasing means that the value of the MaxWorkItems or MinFreeWorkItems registry item of the Server service needs to be increased.  If the instance field is Blocking Queue, this field is always 0. #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Bytes Rcvd/sec (BYTES_RECEIVED_PER_SEC)	Rate (bytes/second) at which the server processor received data from network clients	float	No	2000, 2003, 2003 (IPF)	--
Bytes Sent/sec (BYTES_SENT_PER_SEC)	Rate (bytes/second) at which the server processor sent data to network clients	float	No	2000, 2003, 2003 (IPF)	--
Bytes Xferd/sec (BYTES_TRANSFERRED_PER_SEC)	Rate (bytes/second) at which the server processor transferred (sent or received) data for network clients	float	No	2000, 2003, 2003 (IPF)	--

Server Work Queues Overview (PI_SVRQ)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Context Blocks Queued/sec (CONTEXT_BLOCKS_QUEUED_PER_SEC)	Rate (num./second) that work context blocks needed to be put in the FSP queue, due to processing waits on the server	float	No	2000, 2003, 2003 (IPF)	--
Current Clients (CURRENT_CLIENTS)	Number of clients processed by the processor. The server dynamically allocates client load between all servers in the system.  If the instance field is Blocking Queue, this field is always 0. #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Instance (INSTANCE)	Instance name for the server work queue.  Blocking Queue or a number beginning with 0 is displayed.	string(256)	No	2000, 2003, 2003 (IPF)	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the last collected value is displayed.	ulong	No	2000, 2003, 2003 (IPF)	RECORD_TIME(T1) - RECORD_TIME(T0)
Interval2 (INTERVAL2)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000, 2003, 2003 (IPF)	RECORD_TIME(T1) - RECORD_TIME(T0)
Queue Length (QUEUE_LENGTH)	Number of requests of the processor that is waiting for processor time and is ready for execution in the queue.  Usually, if the queue length continuously exceeds 2, it indicates that the processor is congested. #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Read Bytes/sec (READ_BYTES_PER_SEC)	Rate (bytes/second) at which the server processor read data from files, for clients	float	No	2000, 2003, 2003 (IPF)	--
Read Ops/sec (READ_OPERATIONS_PER_SEC)	Rate (num./second) at which the server processor performed read operations to read from files, for clients.  If the instance field is Blocking Queue, this field is always 0.	float	No	2000, 2003, 2003 (IPF)	--

Server Work Queues Overview (PI_SVRQ)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003, 2003 (IPF)	--
Record Type (INPUT_RECORD_TYPE)	Record name (always SVRQ)	char(8)	No	2000, 2003, 2003 (IPF)	--
Total Bytes/sec (TOTAL_BYTES_PER_SEC)	Rate (bytes/second) at which the server processor read data to, or wrote data from files, for clients.	float	No	2000, 2003, 2003 (IPF)	--
Total Ops/sec (TOTAL_OPERATIONS_PER_SEC)	Rate (bytes/second) at which the server processor performed read or write operations to read to or write from files, for clients.  If the instance field is Blocking Queue, this field is always 0.	float	No	2000, 2003, 2003 (IPF)	--
Work Item Shortages (WORK_ITEM_SHORTAGES)	Number of times usable work items for the processor (in which all requests from clients are shown, and the server maintains a usable workspace for each processor to expedite processing) were insufficient.  Usually, a value other than 0 for an extended period means that the value of the MaxWorkItems registry item of the Server service needs to be increased.  If the instance field is Blocking Queue, this field is always 0. #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Write Bytes/sec (WRITE_BYTES_PER_SEC)	Rate (bytes/second) that the server processor wrote data to files, for clients	float	No	2000, 2003, 2003 (IPF)	--
Write Ops/sec (WRITE_OPERATIONS_PER_SEC)	Rate (num./second) at which the server processor performed write operations to write data to files, for clients.  If the instance field is Blocking Queue, this field is always 0.	float	No	2000, 2003, 2003 (IPF)	--

## 2.8.37 Service Process Detail (PD\_SVC)

### Function

The Service Process Detail (PD\_SVC) record stores performance data about application services (at a specific point in time) such as Win32 processes registered in the Service Control Manager (SCM). This is a multi-instance record.

**Note:** This record is not available in Windows Server 2003 (IPF).

Table 2.99 Service Process Detail (PD\_SVC) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

- Service Name (SERVICE\_NAME)
- Service Type (TYPE)

### Lifetime

From the installation to the uninstallation of a service.

### Record Size

- Fixed part: 681 bytes
- Variable part: 1,775 bytes

Table 2.100 Service Process Detail (PD\_SVC) Fields

Service Process Detail (PD_SVC)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Accepted Controls (ACCEPTED_CONTROLS)	<p>Control codes received by the service. Some or all of the values of this field are as follows:</p> <ul style="list-style-type: none"> <li>▪ PAUSE_CONTINUE: Enable pausing and restarting of the service.</li> <li>▪ SHUTDOWN: Notify the service of OS shutdowns.</li> <li>▪ STOP: Enable stopping of the service.</li> <li>▪ PARAMCHANGE: Enable reloading of startup parameters without restarting.</li> <li>▪ NETBINDCHANGE: Enable reception from the network of any binding changes without restarting.</li> <li>▪ HARDWAREPROFILECHANGE: Notify the service of any changes in the hardware profile.</li> <li>▪ POWEREVENT: Notify the service of any changes in the OS power status.</li> <li>▪ SESSIONCHANGE: Notify the service of any changes in the OS session status.</li> </ul>	string(128)	No	2000, 2003	--

Service Process Detail (PD_SVC)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Checkpoint (CHECKPOINT)	Checkpoint progress counter that the service uses to report the progress of start, stop, or continued processing according to the completion of each step (increment method); the value is 0 if there is no such processing	long	No	2000, 2003	--
Display Name (DISPLAY_NAME)	Name used by the user interface program to identify the service	string(256)	No	2000, 2003	--
Image Path (IMAGE_PATH)	Fully qualified path to the service's binary file	string(1024)	No	2000, 2003	--
Interval (INTERVAL)	This is always 0.	ulong	No	2000, 2003	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003	--
Record Type (INPUT_RECORD_TYPE)	Record name (always svc)	char(8)	No	2000, 2003	--
Service Exit Code (SERVICE_EXIT_CODE)	Service-specific exit code	long	No	2000, 2003	--
Service Name (SERVICE_NAME)	Service name used in the Service Control Manager database	string(256)	No	2000, 2003	--
Service Type (TYPE)	<p>One of the following two service types:</p> <ul style="list-style-type: none"> <li>▪ WIN32_OWN_PROCESSES: Indicates that the service application is running in the application's own process.</li> <li>▪ WIN32_SHARE_PROCESSES: Indicates that the service application is sharing a process with another service.</li> </ul> <p><i>Note:</i> The following type is also listed when the service process indicates interactivity with the desktop:</p> <ul style="list-style-type: none"> <li>▪ INTERACTIVE_PROCESSES</li> </ul>	string(64)	No	2000, 2003	--

Service Process Detail (PD_SVC)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
State (STATE)	<p>Service status during data collection; the value of this field is one of the following:</p> <ul style="list-style-type: none"> <li>▪ CONTINUE_PENDING: Indicates that the service is currently in the process of starting because <b>Restart</b> was clicked after the service had been paused.</li> <li>▪ PAUSE_PENDING: Indicates that the service is currently in the process of being paused.</li> <li>▪ PAUSED: Indicates that the service is currently paused.</li> <li>▪ RUNNING: Indicates that the service is currently active.</li> <li>▪ START_PENDING: Indicates that the service is currently in the process of starting.</li> <li>▪ STOP_PENDING: Indicates that the service is currently in the processing of stopping.</li> <li>▪ STOPPED: Indicates that the service is currently stopped.</li> </ul>	string(31)	No	2000, 2003	--
Wait Hint (WAIT_HINT)	Expected duration (in milliseconds) of the start, stop, or continued processing that is placed on hold until the service updates the status or checkpoint	ulong	No	2000, 2003	--
Win32 Exit Code (WIN32_EXIT_CODE)	Win32 exit code	long	No	2000, 2003	--

## 2.8.38 SMTP Server Service Overview (PI\_SMT2)

### Function

The SMTP Server Service Overview (PI\_SMT2) record stores performance data, taken at specific intervals, about the SMTP service used to send email.

The SMTP service is a component of Microsoft Internet Information Services (IIS).

This is a multi-instance record.

### Notes:

- This record is supported by IIS Version 5.0 or later.
- This record is not available in Windows Server 2003 (IPF).

Table 2.101 SMTP Server Service Overview (PI\_SMT2) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

Instance (INSTANCE)

### Lifetime

From the configuration to the deletion of an SMTP virtual server.

### Record Size

- Fixed part: 681 bytes
- Variable part: 2,192 bytes

Table 2.102 SMTP Server Service Overview (PI\_SMT2) Fields

SMTP Server Service Overview (PI_SMT2)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
% Recipients Local (PCT_RECIPIENTS_LOCAL)	Rate (%) of recipients that were distributed locally #1	float	No	2000, 2003	--

SMTP Server Service Overview (PI_SMT2)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
% Recipients Remote (PCT_RECIPIENTS_REMOTE)	Rate (%) of recipients that were distributed remotely #1	float	No	2000, 2003	--
Avg Recipients/msg Rcvd (AVG_RECIPIENTS_PER_MSG_RECEIVED)	Average number of recipients per message received #1	float	No	2000, 2003	--
Avg Recipients/msg Sent (AVG_RECIPIENTS_PER_MSG_SENT)	Average number of recipients per message sent #1	float	No	2000, 2003	--
Avg Retries/msg Delivered (AVG_RETRIES_PER_MSG_DELIVERED)	Average number of retries per locally distributed message #1	float	No	2000, 2003	--
Avg Retries/msg Sent (AVG_RETRIES_PER_MSG_SENT)	Average number of retries per message sent #1	float	No	2000, 2003	--
Badm Msgs Bad Pickup File (BADMAILED_MSGS_BAD_PICKUP_FILE)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Badm Msgs General Failure (BADMAILED_MSGS_GENERAL_FAILURE)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Badm Msgs Hop Count Exceeded (BADMAILED_MSGS_HOP_COUNT_EXCEEDED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Badm Msgs NDR of DSN (BADMAILED_MSGS_NDR_OF_DSN)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Badm Msgs No Recipients (BADMAILED_MSGS_NO_RECIPIENTS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Badm Msgs Triggered via Event (BADMAILED_MSGS_TRIGGERED_VIA_EVENT)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--

SMTP Server Service Overview (PI_SMT2)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Bytes Rcvd (BYTES_RECEIVED_CURR)	Amount (in bytes) of data received by the SMTP service #2	double	No	2000, 2003	BYTES_RECEIVED_TOTAL (T1) - BYTES_RECEIVED_TOTAL (T0)
Bytes Rcvd/sec (BYTES_RECEIVED_PER_SEC)	Rate (bytes/second) at which data was received by the SMTP service	float	No	2000, 2003	--
Bytes Sent (BYTES_SENT_CURR)	Amount (in bytes) of data sent by the SMTP service #2	double	No	2000, 2003	BYTES_SENT_TOTAL (T1) - BYTES_SENT_TOTAL (T0)
Bytes Sent/sec (BYTES_SENT_PER_SEC)	Rate (bytes/second) at which the SMTP service sent data	float	No	2000, 2003	--
Bytes Total/sec (BYTES_TOTAL_PER_SEC)	Rate (bytes/second) at which data was transferred by the SMTP service. This value is the sum of the Bytes Sent/sec and Bytes Rcvd/sec fields.	float	No	2000, 2003	--
Bytes Xferd (BYTES_CURR)	Amount (in bytes) of data transferred (sent or received) by the SMTP service #2	double	No	2000, 2003	BYTES_TOTAL (T1) - BYTES_TOTAL (T0)
Cat Addr lookup compl (CAT_ADDR_LOOKUP_COMPLETIONS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat Addr lookup compl/sec (CAT_ADDR_LOOKUP_COMPLETIONS_PER_SEC)	This is a reserved field; it is not available.	float	No	Not Applicable	--
Cat Addr lookups (CAT_ADDR_LOOKUPS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat Addr lookups not found (CAT_ADDR_LOOKUPS_NOT_FOUND)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat Addr lookups/sec (CAT_ADDR_LOOKUPS_PER_SEC)	This is a reserved field; it is not available.	float	No	Not Applicable	--

SMTP Server Service Overview (PI_SMT2)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Cat Catagor compl (CAT_CATAGOR_COMPL ETED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat Catagor compl success (CAT_CATAGOR_COMPL ETED_SUCCESSFULLY)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat Catagor compl/sec (CAT_CATAGOR_COMPL ETED_PER_SEC)	This is a reserved field; it is not available.	float	No	Not Applicable	--
Cat Catagor fail DS conn failure (CAT_CATAGOR_FAILE D_DS_CONN_FAILURE)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat Catagor fail DS logon fail (CAT_CATAGOR_FAILE D_DS_LOGON_FAILURE )	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat Catagor fail Out Of Memory (CAT_CATAGOR_FAILE D_OUT_OF_MEMORY)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat Catagor fail non-retry err (CAT_CATAGOR_FAILE D_NON_RETRY_ERROR)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat Catagor fail retryable err (CAT_CATAGOR_FAILE D_RETRYABLE_ERROR)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat Catagor fail sink retry err (CAT_CATAGOR_FAILE D_SINK_RETRY_ERROR )	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat Catagor in progress (CAT_CATAGOR_IN_PR OGRESS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat LDAP bind failure (CAT_LDAP_BIND_FAI LURE)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat LDAP binds (CAT_LDAP_BINDS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--

SMTP Server Service Overview (PI_SMT2)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Cat LDAP conn failures (CAT_LDAP_CONNECTION_FAILURES)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat LDAP conns (CAT_LDAP_CONNECTIONS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat LDAP conns currently open (CAT_LDAP_CONNECTIONS_CURRENTLY_OPEN)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat LDAP gen compl failures (CAT_LDAP_GENERAL_COMP_FAILURES)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat LDAP paged srch compl fails (CAT_LDAP_PAGED_SEARCH_COMP_FAILURES)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat LDAP paged srch failure (CAT_LDAP_PAGED_SEARCH_FAILURE)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat LDAP paged srches (CAT_LDAP_PAGED_SEARCHES)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat LDAP paged srches compl (CAT_LDAP_PAGED_SEARCHES_COMPLETED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat LDAP srch compl fail (CAT_LDAP_SEARCH_COMPLETION_FAILURE)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat LDAP srch fail (CAT_LDAP_SEARCH_FAILURES)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat LDAP srches (CAT_LDAP_SEARCHES)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat LDAP srches abandoned (CAT_LDAP_SEARCHES_ABANDONED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--

SMTP Server Service Overview (PI_SMT2)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Cat LDAP srches completed (CAT_LDAP_SEARCHES _COMPLETED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat LDAP srches completed/sec (CAT_LDAP_SEARCHES _COMPLETED_PER_SEC )	This is a reserved field; it is not available.	float	No	Not Applicable	--
Cat LDAP srches pending compl (CAT_LDAP_SEARCHES _PEND_COMPLETION)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat LDAP srches/sec (CAT_LDAP_SEARCHES _PER_SEC)	This is a reserved field; it is not available.	float	No	Not Applicable	--
Cat Msgs Categorized (CAT_MESSAGES_CATE GORIZED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat Msgs aborted (CAT_MESSAGES_ABOR TED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat Msgs bifurcated (CAT_MESSAGES_BIFU RCATED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat Msgs submitted (CAT_MESSAGES_SUBM ITTED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat Msgs submitted/sec (CAT_MESSAGES_SUBM ITTED_PER_SEC)	This is a reserved field; it is not available.	float	No	Not Applicable	--
Cat Recip NDRd ambiguous adrs (CAT_RECIP_NDRD_AM BIGUOUS_ADDRESS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--

SMTP Server Service Overview (PI_SMT2)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Cat Recip NDRd by category (CAT_RECIP_NDRD_BY_CATEGORIZER)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat Recip NDRd fwd loop (CAT_RECIP_NDRD_FORWARDING_LOOP)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat Recip NDRd illegal addr (CAT_RECIP_NDRD_ILLEGAL_ADDRESS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat Recip NDRd sink recip err (CAT_RECIP_NDRD_SINK_RECIP_ERRORS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat Recip NDRd unresolved (CAT_RECIP_NDRD_UNRESOLVED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat Recip after categor (CAT_RECIPIENTS_AFTER_CATEGOR)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat Recip before categor (CAT_RECIP_BEFORE_CATEGOR)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat Recip in categor (CAT_RECIP_IN_CATEGORIZATION)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat Senders unresolved (CAT_SENDERS_UNRESOLVED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat Senders with ambiguous addr (CAT_SENDERS_WITH_AMBIGUOUS_ADDRESS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Cat mailmsg dup collisions (CAT_MAILMSG_DUPLICATE_COLLISIONS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Categorizer Queue Length (CATEGORIZER_QUEUE_LENGTH)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--

SMTP Server Service Overview (PI_SMT2)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Conn Errors/sec (CONNECTION_ERRORS_PER_SEC)	Rate (num./second) at which connection errors occurred	float	No	2000, 2003	--
Current Msgs in Local Delivery (CURRENT_MESSAGES_IN_LOCAL_DELIVERY)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
DNS Queries (DNS_QUERIES_CURR)	Number of DNS queries #2	ulong	No	2000, 2003	DNS_QUERIES_TOTAL (T1) - DNS_QUERIES_TOTAL (T0)
DNS Queries/sec (DNS_QUERIES_PER_SEC)	Rate (num./second) at which DNS queries were performed	float	No	2000, 2003	--
Directory Drops (DIRECTORY_DROPS_CURR)	Number of messages placed in the drop directory #2	ulong	No	2000, 2003	DIRECTORY_DROPS_TOTAL (T1) - DIRECTORY_DROPS_TOTAL (T0)
Directory Drops/sec (DIRECTORY_DROPS_PER_SEC)	Rate (num./second) at which messages were placed in a drop directory	float	No	2000, 2003	--
Directory Pickup Queue Length (DIRECTORY_PICKUP_QUEUE_LENGTH)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
ETRN Messages (ETRN_MESSAGES_CURR)	Number of received ETRN messages #2	ulong	No	2000, 2003	ETRN_MESSAGES_TOTAL (T1) - ETRN_MESSAGES_TOTAL (T0)
ETRN Messages/sec (ETRN_MESSAGES_PER_SEC)	Rate (num./second) at which ETRN messages were received	float	No	2000, 2003	--
Inbound Conns Current (INBOUND_CONNECTIONS_CURRENT)	Number of inbound connections by the SMTP service #1, #2	ulong	No	2000, 2003	--
Instance (INSTANCE)	Name of the SMTP virtual server	string (256)	No	2000, 2003	--

SMTP Server Service Overview (PI_SMT2)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the last collected value is displayed.	ulong	No	2000, 2003	RECORD_TIME (T1) - RECORD_TIME (T0)
Interval2 (INTERVAL2)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000, 2003	RECORD_TIME (T1) - RECORD_TIME (T0)
Local Queue Length (LOCAL_QUEUE_LENGTH)	Number of messages in the local queue #1, #2	ulong	No	2000, 2003	--
Local Retry Queue Length (LOCAL_RETRY_QUEUE_LENGTH)	Number of messages in the local transmission retry queue #1, #2	ulong	No	2000, 2003	--
Messages Sent/sec (MESSAGES_SENT_PER_SEC)	Rate (num./second) at which the SMTP service sent messages	float	No	2000, 2003	--
Msg Bytes (MSG_BYTES_CURR)	Amount (in bytes) of message data transferred by the SMTP service #2	double	No	2000, 2003	MSG_BYTES_TOTAL (T1) - MSG_BYTES_TOTAL (T0)
Msg Bytes Rcvd (MSG_BYTES_RECEIVED_CURR)	Amount (in bytes) of message data received by the SMTP service #2	double	No	2000, 2003	MSG_BYTES_RECEIVED_TOTAL (T1) - MSG_BYTES_RECEIVED_TOTAL (T0)
Msg Bytes Rcvd/sec (MESSAGE_BYTES_RECEIVED_PER_SEC)	Rate (bytes/second) at which the SMTP service received message data	float	No	2000, 2003	--
Msg Bytes Sent (MSG_BYTES_SENT_CURR)	Amount (in bytes) of message data sent by the SMTP service #2	double	No	2000, 2003	MSG_BYTES_SENT_TOTAL (T1) - MSG_BYTES_SENT_TOTAL (T0)

SMTP Server Service Overview (PI_SMT2)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Msg Bytes Sent/sec (MESSAGE_BYTES_SENT_PER_SEC)	Rate (bytes/second) at which the SMTP service sent message data	float	No	2000, 2003	--
Msg Bytes Total/sec (MESSAGE_BYTES_TOTAL_PER_SEC)	Rate (bytes/second) at which the SMTP service sent or received message data	float	No	2000, 2003	--
Msg Delivery Retries (MSG_DELIVERY_RETRIES_CURR)	Number of locally delivered messages for which retry was performed #2	ulong	No	2000, 2003	MSGSDeliveryRetries (T1) - MSGSDeliveryRetries (T0)
Msg Rcvd/sec (MESSAGE_RECEIVED_PER_SEC)	Rate (num./second) at which the SMTP service received messages	float	No	2000, 2003	--
Msgs Currently Undeliverable (MESSAGES_CURRENTLY_UNDELIVERABLE)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Msgs Delivered (MSGSDelivered_CURR)	Number of messages delivered to the local mailbox #2	ulong	No	2000, 2003	MSGSDeliveredTotal (T1) - MSGSDeliveredTotal (T0)
Msgs Delivered/sec (MESSAGES_DELIVERED_PER_SEC)	Rate (num./second) at which messages were delivered to the local mailbox	float	No	2000, 2003	--
Msgs Pending Routing (MESSAGES_PENDING_ROUTING)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Msgs Rcvd (MSGSDelivered_CURR)	Number of messages received by the SMTP service #2	ulong	No	2000, 2003	MSGSDeliveredTotal (T1) - MSGSDeliveredTotal (T0)
Msgs Refused for Address Objects (MSGSDelivered_CURR)	Number of messages refused because no address object existed #2	ulong	No	2000, 2003	MSGSDeliveredForAddressObjects (T1) - MSGSDeliveredForAddressObjects (T0)

SMTP Server Service Overview (PI_SMT2)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Msgs Refused for Mail Objects (MSGSG_REFUSED_FOR_MAIL_OBJS_CURR)	Number of messages refused because no mail object existed #2	ulong	No	2000, 2003	MSGSG_REFUSED_FOR_MAIL_OBJECTS (T1) - MSGSG_REFUSED_FOR_MAIL_OBJECTS (T0)
Msgs Refused for Size (MSGSG_REFUSED_FOR_SIZE_CURR)	Number of messages refused because the amount of data was too large #2	ulong	No	2000, 2003	MSGSG_REFUSED_FOR_SIZE (T1) - MSGSG_REFUSED_FOR_SIZE (T0)
Msgs Retrieved (MSGSG_RETRIEVED_CURR)	This is a reserved field; it is not available.	ulong	No	Not Applicable	MSGSG_RETRIEVED_TOTAL (T1) - MSGSG_RETRIEVED_TOTAL (T0)
Msgs Retrieved/sec (MESSAGES_RETRIEVED_PER_SEC)	This is a reserved field; it is not available.	float	No	Not Applicable	--
Msgs Send Retries (MSG_SEND_CURR)	Number of messages for which transmission was retried #2	ulong	No	2000, 2003	MSGSG_SEND_RETRIES (T1) - MSGSG_SEND_RETRIES (T0)
Msgs Sent (MSGSG_SENT_CURR)	Number of messages sent by the SMTP service #2	ulong	No	2000, 2003	MSGSG_SENT_TOTAL (T1) - MSGSG_SENT_TOTAL (T0)
NDR's Generated (NDRS_GENERATED_CURR)	Number of non-deliverable reports generated #2	ulong	No	2000, 2003	NDRS_GENERATED (T1) - NDRS_GENERATED (T0)
Number of MailFiles Open (NUMBER_OF_MAILFILES_OPEN)	Number of handles to open mail files #1, #2	ulong	No	2000, 2003	--
Number of QueueFiles Open (NUMBER_OF_QUEUEFILES_OPEN)	Number of handles to open queue files #1, #2	ulong	No	2000, 2003	--
Outbound Conns Current (OUTBOUND_CONNECTIONS_CURRENT)	Number of outbound connections for the SMTP service #1, #2	ulong	No	2000, 2003	--
Outbound Conns Refused (OUTBOUND_CONNECTIONS_REFUSED)	Number of outbound connections refused at the remote site #1, #3	ulong	No	2000, 2003	--

SMTP Server Service Overview (PI_SMT2)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Pickup Direct Msgs Retr Total (PICKUP_DIRECT_MESSAGES_RETRI_TOTAL)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Pickup Direct Msgs Retr/sec (PICKUP_DIRECT_MESSAGES_RETRI_PER_SEC)	This is a reserved field; it is not available.	float	No	Not Applicable	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003	--
Record Type (INPUT_RECORD_TYPE)	Record name (always SMT2)	char(8)	No	2000, 2003	--
Remote Queue Length (REMOTE_QUEUE_LENGTH)	Number of messages in the remote queue #1, #2	ulong	No	2000, 2003	--
Remote Retry Queue Length (REMOTE_RETRY_QUEUE_LENGTH)	Number of messages in the queue for retrying transmission, used for remote delivery #1, #2	ulong	No	2000, 2003	--
Routing Table Lookups (ROUTING_TABLE_LOOKUPS_CURR)	Number of lookups of the routing table #2	ulong	No	2000, 2003	ROUTING_TABLE_LOOKUPS_TOTAL (T1) - ROUTING_TABLE_LOOKUPS_TOTAL (T0)
Routing Table Lookups/sec (ROUTING_TABLE_LOOKUPS_PER_SEC)	Rate (num./second) at which lookups of the routing table were performed	float	No	2000, 2003	--
Total Bytes Rcvd (BYTES_RECEIVED_TOTAL)	Total amount (in bytes) of data received by the SMTP service #1, #3	ulong	No	2000, 2003	--
Total Bytes Sent (BYTES_SENT_TOTAL)	Total amount (in bytes) of data sent by the SMTP service #1, #3	double	No	2000, 2003	--
Total Bytes Xfrd (BYTES_TOTAL)	Total amount (in bytes) of data transferred by the SMTP service #1, #3	double	No	2000, 2003	--
Total Conn Errors (TOTAL_CONNECTION_ERRORS)	Total number of connection errors #1, #3	ulong	No	2000, 2003	--

SMTP Server Service Overview (PI_SMT2)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Total DNS Queries (DNS_QUERIES_TOTAL)	Total number of DNS queries #1, #3	ulong	No	2000, 2003	--
Total DSN Failures (TOTAL_DSN_FAILURES)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Total Directory Drops (DIRECTORY_DROPS_TOTAL)	Total number of messages placed in the drop directory #1, #3	ulong	No	2000, 2003	--
Total ETRN Messages (ETRN_MESSAGES_TOTAL)	Total number of received ETRN messages #1, #3	ulong	No	2000, 2003	--
Total Inbound Conns (INBOUND_CONNECTIONS_TOTAL)	Total number of inbound connections for the SMTP service #1, #3	ulong	No	2000, 2003	--
Total Msg Bytes (MSG_BYTES_TOTAL)	Total amount (in bytes) of message data transferred by the SMTP service #1, #3	double	No	2000, 2003	--
Total Msg Bytes Rcvd (MSG_BYTES_RECEIVED_TOTAL)	Total amount (in bytes) of message data received by the SMTP service #1, #3	double	No	2000, 2003	--
Total Msg Bytes Sent (MSG_BYTES_SENT_TOTAL)	Total amount (in bytes) of message data sent by the SMTP service #1, #3	double	No	2000, 2003	--
Total Msg Delivery Retries (MSGS_DELIVERY_RETRIES)	Total number of locally delivered messages for which retry was performed #1, #3	ulong	No	2000, 2003	--
Total Msg Rcvd (MSGS_RECEIVED_TOTAL)	Total number of messages received by the SMTP service #1, #3	ulong	No	2000, 2003	--
Total Msg Refused for Addr Objs (MSGS_REFUSED_FOR_ADDRESS_OBJECTS)	Total number of messages refused because no address object existed #1, #3	ulong	No	2000, 2003	--
Total Msg Refused for Mail Objs (MSGS_REFUSED_FOR_MAIL_OBJECTS)	Total number of messages refused because no mail object existed #1, #3	ulong	No	2000, 2003	--

SMTP Server Service Overview (PI_SMT2)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Total Msg Send Retries (MSGSEND_RETRIES)	Total number of transmission messages retried #1, #3	ulong	No	2000, 2003	--
Total Msgs Delivered (MSGSDELIVERED_TOTAL)	Total number of messages delivered to the local mailbox #1, #3	ulong	No	2000, 2003	--
Total Msgs Refused for Size (MSGSDREFUSED_FOR_SIZE)	Total number of messages refused because the amount of data was too large #1, #3	ulong	No	2000, 2003	--
Total Msgs Retrieved (MSGSDRETRIEVED_TOTAL)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Total Msgs Sent (MSGSDSENT_TOTAL)	Total number of messages sent by the SMTP service #1, #3	ulong	No	2000, 2003	--
Total NDR's Generated (NDRSDGENERATED)	Total number of non-deliverable reports generated #1, #3	ulong	No	2000, 2003	--
Total Outbound Conns (OUTBOUND_CONNECTIONS_TOTAL)	Total number of outbound connections for the SMTP service #1, #3	ulong	No	2000, 2003	--
Total Routing Table Lookups (ROUTING_TABLE_LOOKUPS_TOTAL)	Total number of lookups for the routing table #1, #3	ulong	No	2000, 2003	--
Total msgs submitted (TOTAL_MESSAGES_SUBMITTED)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--

## 2.8.39 System Overview (PI)

### Function

The System Overview (PI) record stores performance data, taken at specific intervals, about the Windows performance objects listed below.

The System Overview (PI) record contains information needed to determine whether the system is being used appropriately. The following explains each Windows performance object:

- **Cache object**

The cache object monitors information about file system caches, areas of physical memory that keep data, to enable fast access without disk access for cache manager and file system driver operations.

The cache object has application I/O indicators that enable ordinary applications to use the cache. When little memory exists, the cache size decreases and efficient operation is difficult to obtain.

- **Memory object**

The memory object manages operations for physical memory and virtual memory.

Physical memory is RAM (random access memory) area. Virtual memory consists of areas in physical memory and on disk.

Virtual memory areas are mapped to physical memory areas, and pages not accessed for longer than a given time are saved to virtual memory to conserve physical memory.

Paging involves moving code and data between disk and physical memory, and consists of page-in operations (loading pages into physical memory) and page-out operations (moving pages to virtual memory).

Page faulting is interrupt processing that occurs when pages that do not exist in physical memory are accessed. Memory shortages due to excessive paging can cause system processing to slow down.

- **Objects object**

The Objects object monitors system logical objects, such as processes, threads, mutexes and semaphores.

Each object needs memory to store basic information about itself. This information can help detection of unnecessary resource consumption.

- **Processor object**

The Processor object monitors processor processing statuses. A computer has multiple processors.

A processor is the part of the computer that performs arithmetic and logical calculations, initializes peripheral device operations, and executed process threads.

- **Redirector object**  
The Redirector object monitors network connections established from client computers.
- **Server object**  
The Server object monitors communication between server computers on the network.
- **System object**  
The System object monitors each kind of processing status for all processors on a system.

*Notes:*

- When record collection starts for System Overview (PI) records, if the startup type of the Windows Management Instrumentation service (service name: WinMgmt), which provides system management information for the OS, is set to **Disabled**, the value of the System Type (SYSTEM\_TYPE) field will not be collected properly.
- If the server service provided by the OS (service name: LanmanServer) is stopped, the following fields corresponding to the server objects cannot be collected.
  - 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)

Table 2.103 System Overview (PI) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	No
Collection Offset	0	
Log	Yes	
LOGIF	(Blank)	

**Key Fields**

None

**Lifetime**

None

**Record Size**

- Fixed part: 3,235 bytes
- Variable part: 0 bytes

Table 2.104 System Overview (PI) Fields

System Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
% Committed Bytes in Use (PCT_COMMITTED_BYTES_IN_USE)	Rate (%) of virtual memory usage. Ratio of Committed Mbytes to Commit Limit Mbytes.#1	float	No	2000, 2003, 2003 (IPF)	--
% Physical Mem (PCT_PHYSICAL_MEMORY)	Rate (%) of physical memory usage #1	double	No	2000, 2003, 2003 (IPF)	100 * USED_PHYSICAL_MEMORY_BYTES / TOTAL_PHYSICAL_MEMORY_KBYTES
% Registry Quota in Use (PCT_REGISTRY_QUOTA_IN_USE)	Rate (%) of all the registry quotas that can be used for the processor, percentage of those used by the system #1	float	No	2000, 2003, 2003 (IPF)	--
% Total DPC Time (PCT_TOTAL_DPC_TIME)	Rate (%) of usage spent by the processor to process privilege-mode DPC (deferred procedure call) interrupts, which are executed with lower priority than standard interrupts.  The maximum is 100 regardless of whether a single-processor or multiprocessor environment is in use.	float	No	2000, 2003, 2003 (IPF)	--
% Total Interrupt Time (PCT_TOTAL_INTERRUPT_TIME)	Rate (%) of usage spent by the processor to process interrupts from hardware components (system clock, mouse, disk driver, data communication line, NIC, and other peripheral devices that can raise interrupts).  The maximum is 100 regardless of whether a single-processor or multiprocessor environment is in use.	float	No	2000, 2003, 2003 (IPF)	--
Active CPUs (NUMBER_OF_ACTIVE_CPUS)	Number of processors	ulong	No	2000, 2003, 2003 (IPF)	--

System Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Alignment Fixups/sec (ALIGNMENT_FIXUPS_PER_SEC)	Rate (num./second) at which alignment faults were fixed by the system by using the processor	float	No	2000, 2003, 2003 (IPF)	--
Async Copy Reads/sec (ASYNC_COPY_READS_PER_SEC)	Rate (num./second) at which asynchronous reads were generated from file system cache pages, including memory copy processing from cache to an application buffer	float	No	2000, 2003, 2003 (IPF)	--
Async Data Maps/sec (ASYNC_DATA_MAPS_PER_SEC)	Rate (num./second) at which there were no waits until a page was retrieved, when pages mapped in the file system cache did not exist in main memory	float	No	2000, 2003, 2003 (IPF)	--
Async Fast Reads/sec (ASYNC_FAST_READS_PER_SEC)	Rate (num./second) at which data was retrieved from the cache by direct asynchronous retrieval, without going through the file system	float	No	2000, 2003, 2003 (IPF)	--
Async MDL Reads/sec (ASYNC_MDL_READS_PER_SEC)	Rate (num./second) of asynchronous retrievals using MDL (memory descriptor list), for accessing file system cache pages	float	No	2000, 2003, 2003 (IPF)	--
Async Pin Reads/sec (ASYNC_PIN_READS_PER_SEC)	Rate (num./second) of asynchronous reads within the file system cache, for pre-processing to write data back to disk	float	No	2000, 2003, 2003 (IPF)	--
Available Mbytes (AVAILABLE_BYTES)	<p>Unused size (in megabytes) of the physical memory. This value is the sum of zero memory, free memory, and standby memory (cached) to be allocated to the process or that can be immediately used by the system.</p> <p>Usually, if this size is continuously less than 5% of the Total Physical Mem Mbytes field, it indicates excessive paging occurrence. #1, #2</p>	double	No	2000, 2003, 2003 (IPF)	ReturnVal ue / 1MB

System Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Blocking Reqs Rejected (BLOCKING_REQUESTS_REJECTED)	Rate (num./second) at which SMB (network protocol for implementing file services and print services) blocking was denied due to insufficient free work items on the server #2	float	No	2000, 2003, 2003 (IPF)	--
Bytes Rcvd/sec (BYTES_RECEIVED_PER_SEC)	Rate (bytes/second) at which the server received data from the network	float	No	2000, 2003, 2003 (IPF)	--
Bytes Total/sec (BYTES_TOTAL_PER_SEC)	Rate (bytes/second) at which the server sent data to or received data from the network	double	No	2000, 2003, 2003 (IPF)	--
Bytes Xmitd/sec (BYTES_TRANSMITTED_PER_SEC)	Rate (bytes/second) at which the server sent data to the network	float	No	2000, 2003, 2003 (IPF)	--
CPU % (PCT_TOTAL_PROCESSOR_TIME)	Processor usage: Rate (%) of the elapsed time during which the processor executed non-idle threads. The maximum is 100 regardless of whether a single-processor or multiprocessor environment is in use.	float	No	2000, 2003, 2003 (IPF)	--
Cache Faults/sec (CACHE_FAULTS_PER_SEC)	Rate (num./second) of page faults that occurred in the file system cache	float	No	2000, 2003, 2003 (IPF)	--
Cache Mbytes (CACHE_BYTES)	Size (in megabytes) being used by the file system cache #1, #2	double	No	2000, 2003, 2003 (IPF)	ReturnVal ue / 1MB
Cache Mbytes Peak (CACHE_BYTES_PEAK)	Maximum size (in megabytes) used by the file system cache #1, #2	double	No	2000, 2003, 2003 (IPF)	ReturnVal ue / 1MB
Commit Limit Mbytes (COMMIT_LIMIT)	Total size (in megabytes) of virtual memory. This is the total memory for which a commit can be performed without extending the paging file #1, #2	double	No	2000, 2003, 2003 (IPF)	ReturnVal ue / 1MB

System Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Committed Mbytes (COMMITTED_BYTES)	Size (in megabytes) used (committed) for virtual memory.  Usually, a value consistently larger than that of the Total Physical Mem Mbytes field indicates that more memory may be necessary. #1, #2	double	No	2000, 2003, 2003 (IPF)	ReturnVal ue / 1MB
Conns Core (CONNECTS_CORE)	Number of times a connection was needed to a server running the original MS-Net SMB protocol, since the OS started. #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Conns LAN Manager 2.0 (CONNECTS_LAN_MANAGER_20)	Number of connections to LAN Manager 2.0 servers (including LMX servers) #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Conns LAN Manager 2.1 (CONNECTS_LAN_MANAGER_21)	Number of connections to LAN Manager 2.1 servers (including LMX servers) #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Conns Windows NT (CONNECTS_WINDOWS_NT)	Number of previous connections to the OS (for Windows 2000, connections to Windows NT) since the OS started #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Context Blocks Queued/sec (CONTEXT_BLOCKS_QUEUED_PER_SEC)	Rate (num./second) at which work context blocks on the server needed to be put in the FSP queue because of processing waits	float	No	2000, 2003, 2003 (IPF)	--
Context Switches/sec (CONTEXT_SWITCHES_PER_SEC)	Rate (num./second) at which context switches occurred in all the process threads (when the execution thread releases any processor, when the processor was interrupted by a thread with a higher priority, or when a context was switched from user mode to privilege mode or vice versa to use an Executive or subsystem service).	float	No	2000, 2003, 2003 (IPF)	--

System Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Copy Read Hits % (COPY_READ_HITS_PCT)	Rate (%) of read requests that did from the file system cache	float	No	2000, 2003, 2003 (IPF)	--
Copy Reads/sec (COPY_READS_PER_SEC)	Rate (num./second) of read operations from file system cache pages, including memory copy processing from cache to the application buffer	float	No	2000, 2003, 2003 (IPF)	--
Current Commands (CURRENT_COMMANDS)	Number of requests to redirectors in the queue due to processing waits #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Current Processes (CURRENT_PROCESSES)	Number of processes executing on the processor #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Current Threads (CURRENT_THREADS)	Number of threads executing on the processor #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Data Flush Pages/sec (DATA_FLUSH_PAGES_PER_SEC)	Rate (num./second) at which the file system cache wrote the cache page contents to disk	float	No	2000, 2003, 2003 (IPF)	--
Data Flushes/sec (DATA_FLUSHES_PER_SEC)	Rate (num./second) at which the file system cache wrote the cache contents to disk	float	No	2000, 2003, 2003 (IPF)	--
Data Map Hits % (DATA_MAP_HITS_PCT)	Rate (%) of requests to data maps in the file system cache that can be resolved without paging	float	No	2000, 2003, 2003 (IPF)	--
Data Map Pins/sec (DATA_MAP_PINS_PER_SEC)	This field is not supported; its value is always 0.	float	No	Not Applicable	--
Data Maps/sec (DATA_MAPS_PER_SEC)	Rate (num./second) of page mappings to the file system cache	float	No	2000, 2003, 2003 (IPF)	--
Demand Zero Faults/sec (DEMAND_ZERO_FAULTS_PER_SEC)	Rate (num./second) at which zero pages (zero pages emptied of previously saved data) were needed to resolve page faults	float	No	2000, 2003, 2003 (IPF)	--

System Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Errors Access Permissions (ERRORS_ACCESS_PERMISSIONS)	Number of times STATUS_ACCESS_DENIED has occurred since the OS started, due to a file open error caused by the user who (as a client) attempted to access a file that was not appropriately protected. When this field is summarized in a historical report, the maximal value is displayed. #1	ulong	No	2000, 2003, 2003 (IPF)	--
Errors Granted Access (ERRORS_GRANTED_ACCESS)	Number of times access has been denied since the OS started, due to a user's attempt to access a normally open file although the user is not granted permission for the file. When this field is summarized in a historical report, the maximal value is displayed. #1	ulong	No	2000, 2003, 2003 (IPF)	--
Errors Logon (ERRORS_LOGON)	Number of times attempts to log on to the server have failed since the OS started. This type of failure suggests that a password guessing program was used in an attempt to break the server's security. When this field is summarized in a historical report, the maximal value is displayed. #1	ulong	No	2000, 2003, 2003 (IPF)	--
Errors System (ERRORS_SYSTEM)	Number of times unpredicted errors occurred on the server since the OS started #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Events (EVENTS)	Number of active events (for which execution is synchronized for two or more threads) #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Exception Dispatches/sec (EXCEPTION_DISPATCHES_PER_SEC)	Rate (num./second) of exceptions dispatched by the system processor	float	No	2000, 2003, 2003 (IPF)	--

System Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Fast Read Not Possibles/sec (FAST_READ_NOT_POSS IBLES_PER_SEC)	Rate (num./second) of failed attempts by the file system to obtain file system cache data by API calls without calling the file system	float	No	2000, 2003, 2003 (IPF)	--
Fast Read Resource Misses/sec (FAST_READ_RESOURCE _MISSES_PER_SEC)	Rate (num./second) of cache misses due to unprocessable requests because of resource insufficiency	float	No	2000, 2003, 2003 (IPF)	--
Fast Reads/sec (FAST_READS_PER_SEC )	Rate (num./second) of data retrievals directly from the cache without using the file system	float	No	2000, 2003, 2003 (IPF)	--
File Control Bytes/sec (FILE_CONTROL_BYTES _PER_SEC)	Rate (bytes/second) at which data was transferred by the processor, for operations other than file system data reads and writes	float	No	2000, 2003, 2003 (IPF)	--
File Control Ops/sec (FILE_CONTROL_OPERAT IONS_PER_SEC)	Rate (num./second) of operations performed by the processor, other than operations to read data from or write data to the file system	float	No	2000, 2003, 2003 (IPF)	--
File Data Ops/sec (FILE_DATA_OPERATIO NS_PER_SEC)	Rate (num./second) of operations performed by the processor to read data from or write data to the file system	float	No	2000, 2003, 2003 (IPF)	--
File Directory Searches (FILE_DIRECTORY_SEA RCHES)	Number of searches on the server for currently active files #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
File Read Bytes/sec (FILE_READ_BYTES_P ER_SEC)	Rate (bytes/second) at which data was transferred by the processor for file system data reads	float	No	2000, 2003, 2003 (IPF)	--
File Read Ops/sec (FILE_READ_OPERATIO NS_PER_SEC)	Rate (num./second) of read operations performed by the processor to read data from the file system	float	No	2000, 2003, 2003 (IPF)	--
File Write Bytes/sec (FILE_WRITE_BYTES_P ER_SEC)	Rate (bytes/second) at which data was transferred by the processor for file system data writes	float	No	2000, 2003, 2003 (IPF)	--

System Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
File Write Ops/sec (FILE_WRITE_OPERATIONS_PER_SEC)	Rate (num./second) of write operations performed by the processor to write data into the file system	float	No	2000, 2003, 2003 (IPF)	--
Files Open (FILES_OPEN)	Number of files currently open on the server #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Files Opened Total (FILES_OPENED_TOTAL)	Number of successful attempts by the server to open files on behalf of a client, since the OS started #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Floating Emulations/sec (FLOATING_EMULATIONS_PER_SEC)	Rate (num./second) of floating emulations executed by the system on the system processor	float	No	2000, 2003, 2003 (IPF)	--
Free System Page Table Entries (FREE_SYSTEM_PAGE_TABLE_ENTRIES)	Number of page table entries not used by the system #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000, 2003, 2003 (IPF)	RECORD_TIME (T1) - RECORD_TIME (T0)
Lazy Write Flushes/sec (LAZY_WRITE_FLUSHES_PER_SEC)	Rate (num./second) of writes from cache to disk by the delay writing threads (disk update processing performed after pages were changed in memory)	float	No	2000, 2003, 2003 (IPF)	--
Lazy Write Pages/sec (LAZY_WRITE_PAGES_PER_SEC)	Rate (num./second) of writes to disk by the delay writing thread (disk update processing performed after pages were changed in memory)	float	No	2000, 2003, 2003 (IPF)	--
Logon Total (LOGON_TOTAL)	Total number of interactive logons, network logons, service logons, successful logons, and failed logons to the server since the OS started #1, #3	ulong	No	2000, 2003, 2003 (IPF)	--

System Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Logon/sec (LOGON_PER_SEC)	Rate (num./second) at which interactive logons, network logons, service logons, successful logons, and failed logons occurred	float	No	2000, 2003, 2003 (IPF)	--
MDL Read Hits % (MDL_READ_HITS_PCT)	Rate (%) of read requests that used MDL (memory descriptors list) to access pages in the file system cache	float	No	2000, 2003, 2003 (IPF)	--
MDL Reads/sec (MDL_READS_PER_SEC)	Rate (num./second) of read operations that used MDL (memory descriptors list) to access pages in the file system cache	float	No	2000, 2003, 2003 (IPF)	--
Mutexes (MUTEXES)	Number of active mutexes. (Mutexes control thread execution and ensure that only one thread is executing a section of code.) #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Net Errors/sec (NETWORK_ERRORS_PER_SEC)	Rate (num./second) of unexpected errors that occurred due to serious communication failures between Redirector and the server	float	No	2000, 2003, 2003 (IPF)	--
Non Committed Mbytes (NON_COMMITTED_BYTES)	Size (in megabytes) of unused space in virtual memory #1, #2	double	No	2000, 2003, 2003 (IPF)	COMMIT_LIMIT - COMMITTED_BYTES
Page Faults/sec (PAGE_FAULTS_PER_SEC)	Rate (num./second) of page faults. Usually, if this rate exceeds 5 continuously, it indicates a memory bottleneck.	float	No	2000, 2003, 2003 (IPF)	--
Page Reads/sec (PAGE_READS_PER_SEC)	Rate (num./second) of pages that were paged in when a page fault occurred	float	No	2000, 2003, 2003 (IPF)	--
Page Writes/sec (PAGE_WRITES_PER_SEC)	Rate (num./second) of pages that were paged out when a page fault occurred	float	No	2000, 2003, 2003 (IPF)	--
Pages Input/sec (PAGES_INPUT_PER_SEC)	Rate (num./second) of page-in operations when a page fault occurred	float	No	2000, 2003, 2003 (IPF)	--

System Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Pages Output/sec (PAGES_OUTPUT_PER_SEC)	Rate (num./second) of page-out operations when a page fault occurred	float	No	2000, 2003, 2003 (IPF)	--
Pages/sec (PAGES_PER_SEC)	Rate (num./second) of page-in and page-out operations when a page fault occurred. This value is the sum of the Pages Input/sec and Pages Output/sec fields. Usually, if this rate continuously exceeds 5, it indicates a memory bottleneck.	float	No	2000, 2003, 2003 (IPF)	--
Pin Read Hits % (PIN_READ_HITS_PCT)	Rate (%) of read requests that did not have to read disk data in order to access a page in the file system cache	float	No	2000, 2003, 2003 (IPF)	--
Pin Reads/sec (PIN_READS_PER_SEC)	Rate (num./second) of reads into the file system cache before writing the data back to disk	float	No	2000, 2003, 2003 (IPF)	--
Pkts Rcvd/sec (PACKETS_RECEIVED_PER_SEC)	Rate (num./second) at which the Redirector received packets (also called server message blocks (SMBs))	float	No	2000, 2003, 2003 (IPF)	--
Pkts Xmitd/sec (PACKETS_TRANSMITTED_PER_SEC)	Rate (num./second) at which the Redirector sent packets (also called server message blocks (SMBs))	float	No	2000, 2003, 2003 (IPF)	--
Pkts/sec (PACKETS_PER_SEC)	Rate (num./second) at which the Redirector processed packets (also called server message blocks (SMBs))	float	No	2000, 2003, 2003 (IPF)	--
Pool Nonpaged Allocs (POOL_NONPAGED_ALLOCS)	Number of times unpageable physical memory space (which is an area acquired by a system component to execute a task) was allocated #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--

System Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Pool Nonpaged Bytes (POOL_NONPAGED_BYTES)	Size (in kilobytes) of the physical memory that cannot be paged out, the area allocated when the system component executed the task. Usually, if this field is constantly increasing although the server active status is not increasing, a process where a memory leak has occurred may be being executed. #1, #2	double	No	2000, 2003, 2003 (IPF)	--
Pool Nonpaged Failures (POOL_NONPAGED_FAILURES)	Average (num./second) number of allocations of unpageable memory that failed because of the lack of physical memory on the server #2	float	No	2000, 2003, 2003 (IPF)	--
Pool Nonpaged Peak (POOL_NONPAGED_PEAK)	Maximum value (in bytes) of the size of the unpageable memory, which is an area acquired by a system component to execute a task, that the server was using (at a specific point in time) since the OS started. The value of this field will be a reference mark of the setting value for the physical memory to be installed in the computer. #1, #2	double	No	2000, 2003, 2003 (IPF)	--
Pool Paged Allocs (POOL_PAGED_ALLOCS)	Number of times pageout-enabled physical memory (which is an area acquired by a system component to execute a task) was allocated #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Pool Paged Bytes (POOL_PAGED_BYTES)	Size (in kilobytes) of the physical memory that can be paged out, the area allocated when the system component executed the task #1, #2	double	No	2000, 2003, 2003 (IPF)	--
Pool Paged Failures (POOL_PAGED_FAILURES)	Number of times allocation of pageable memory failed since the OS started because of the lack of physical or virtual memory on the server #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--

System Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Pool Paged Peak (POOL_PAGED_PEAK)	Maximum value (in bytes) of the size of the pageable memory (which is an area acquired by a system component to execute a task) allocated by the server at a time point since the OS started.  The value of this field will be a reference mark of the setting value for the physical memory and virtual memory to be installed in the computer. #1, #2	double	No	2000, 2003, 2003 (IPF)	--
Pool Paged Resident Bytes (POOL_PAGED_RESIDENT_BYTES)	Size (in kilobytes) of the pageout-enabled resident physical memory, which is an area acquired by a system component to execute a task #1, #2	double	No	2000, 2003, 2003 (IPF)	--
Privileged CPU % (PCT_TOTAL_PRIVILEGED_TIME)	Usage (%) of the processor that executed threads in privilege mode. Rate of the elapsed time during which the processor executed non-idle threads in privilege mode. The maximum is 100 regardless of whether a single-processor or multiprocessor environment is in use.	float	No	2000, 2003, 2003 (IPF)	--
Processes (PROCESSES)	Number of active processes in memory #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Processor Queue Length (PROCESSOR_QUEUE_LENGTH)	Number of requests of the processor that is waiting for processor time and is ready for execution in the queue. Usually, if the queue length continuously exceeds 2, it indicates that the processor is congested. #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--

System Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Read Aheads/sec (READ_AHEADS_PER_SEC)	Rate (num./second) at which the Cache Manager detected sequential file accesses and read data from the cache	float	No	2000, 2003, 2003 (IPF)	--
Read Bytes Cache/sec (READ_BYTES_CACHE_PER_SEC)	Rate (bytes/second) at which applications read data in the file system cache using Redirector	float	No	2000, 2003, 2003 (IPF)	--
Read Bytes Net/sec (READ_BYTES_NETWORK_PER_SEC)	Rate (bytes/second) at which applications read data via a network because data was not in the file system cache	float	No	2000, 2003, 2003 (IPF)	--
Read Bytes Nonpaging/sec (READ_BYTES_NON_PAGING_PER_SEC)	Rate (bytes/second) at which Redirector read data from a network computer in response to normal file requests by applications	float	No	2000, 2003, 2003 (IPF)	--
Read Bytes Paging/sec (READ_BYTES_PAGING_PER_SEC)	Rate (bytes/second) at which Redirector read data in response to application page faults	float	No	2000, 2003, 2003 (IPF)	--
Read Ops Random/sec (READ_OPERATIONS_RANDOM_PER_SEC)	Rate (num./second) of random read operations made after acquiring data on a file-by-file basis using a specific file handler	float	No	2000, 2003, 2003 (IPF)	--
Read Pkts Small/sec (READ_PACKETS_SMALL_PER_SEC)	Rate (num./second) at which applications read less than 1/4 of the server's negotiated buffer size	float	No	2000, 2003, 2003 (IPF)	--
Read Pkts/sec (READ_PACKETS_PER_SEC)	Rate (num./second) at which read packets sent with a read request were sent to a network	float	No	2000, 2003, 2003 (IPF)	--
Reads Denied/sec (READS_DENIED_PER_SEC)	Rate (num./second) at which the server was unable to accept read requests	float	No	2000, 2003, 2003 (IPF)	--
Reads Large/sec (READS_LARGE_PER_SEC)	Rate (num./second) at which applications read more than twice of the server's negotiated buffer size	float	No	2000, 2003, 2003 (IPF)	--

System Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003, 2003 (IPF)	--
Record Type (INPUT_RECORD_TYPE)	Record name (always PI)	char(8)	No	2000, 2003, 2003 (IPF)	--
Redir Bytes Rcvd/sec (REDIR_BYTES_RECEIVED_PER_SEC)	Rate (bytes/second) at which the Redirector received data from the network	float	No	2000, 2003, 2003 (IPF)	--
Redir Bytes Total/sec (REDIR_BYTES_TOTAL_PER_SEC)	Rate (bytes/second) at which the Redirector received data from or sent data to the network	float	No	2000, 2003, 2003 (IPF)	--
Redir Bytes Xmitd/sec (REDIR_BYTES_TRANSMITTED_PER_SEC)	Rate (bytes/second) at which the Redirector sent data to the network	float	No	2000, 2003, 2003 (IPF)	--
Redir File Data Ops/sec (REDIR_FILE_DATA_OPERATIONS_PER_SEC)	Rate (num./second) of data operations by the Redirector	float	No	2000, 2003, 2003 (IPF)	--
Redir File Read Ops/sec (REDIR_FILE_READ_OPERATIONS_PER_SEC)	Rate (num/second) at which applications requested data from the Redirector	float	No	2000, 2003, 2003 (IPF)	--
Redir File Write Ops/sec (REDIR_FILE_WRITE_OPERATIONS_PER_SEC)	Rate (num/second) at which applications sent data to the Redirector	float	No	2000, 2003, 2003 (IPF)	--
Redir Server Sessions (REDIR_SERVER_SESSIONS)	Number of security object sessions managed by the Redirector since the OS started #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Sections (SECTIONS)	Number of active sections (virtual memory space created by processes to store data) #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Semaphores (SEMAPHORES)	Number of active semaphores (which is used to acquire exclusive access to data that is shared with other threads) #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Server Disconnects (SERVER_DISCONNECTS)	Number of times the server disconnected from the Redirector since the OS started #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--

System Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Server Pool Nonpaged Bytes (SERVER_POOL_NONPAGE D_BYTES)	Size (in bytes) of unpageable memory, which is an area acquired by a system component to execute a task #1, #2	double	No	2000, 2003, 2003 (IPF)	--
Server Pool Paged Bytes (SERVER_POOL_PAGED_B YTES)	Size (in bytes) of the pageable memory (which is an area acquired by a system component to execute a task) used by the server #1, #2	double	No	2000, 2003, 2003 (IPF)	--
Server Reconnects (SERVER_RECONNECTS)	Number of times the Redirector needed to reconnect to the server to complete a new active request, since the OS started #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Server Sessions (SERVER_SESSIONS)	Number of active sessions on the server #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Server Sessions Hung (SERVER_SESSIONS_HUN G)	Number of active sessions that cannot continue processing because a timeout occurred (the remote server has made no reply) #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Sessions Errored Out (SESSIONS_ERRORED_OU T)	Number of sessions that were closed due to an unexpected error, automatic disconnection timeout, or normally connected session, since the OS started #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Sessions Forced Off (SESSIONS_FORCED_OFF )	Number of sessions that were forced to log off since the OS started #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Sessions Logged Off (SESSIONS_LOGGED_OFF )	Number of sessions that were closed normally since the OS started #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Sessions Timed Out (SESSIONS_TIMED_OUT)	Number of sessions that were closed because the idle time exceeded the server's AutoDisconnect parameter value, since the OS started #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--

System Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Sync Copy Reads/sec (SYNC_COPY_READS_PER_SEC)	Rate (num./second) at which synchronous read operations from pages of the file system cache involved memory copies of data from the cache to the application's buffer	float	No	2000, 2003, 2003 (IPF)	--
Sync Data Maps/sec (SYNC_DATA_MAPS_PER_SEC)	Rate (num./second) at which the file system waited for a page to be retrieved when the page mapped to the file system cache is not in main memory	float	No	2000, 2003, 2003 (IPF)	--
Sync Fast Reads/sec (SYNC_FAST_READS_PER_SEC)	Rate (num./second) at which synchronous read operations bypassed the file system and retrieved data directly from the cache	float	No	2000, 2003, 2003 (IPF)	--
Sync MDL Reads/sec (SYNC_MDL_READS_PER_SEC)	Rate (num./second) of synchronous read operations that used MDL (memory descriptors list) to access pages in the file system cache	float	No	2000, 2003, 2003 (IPF)	--
Sync Pin Reads/sec (SYNC_PIN_READS_PER_SEC)	Rate (num./second) of synchronous read operations to the file system cache, before writing data back to disk	float	No	2000, 2003, 2003 (IPF)	--
System Cache Resident Bytes (SYSTEM_CACHE_RESIDENT_BYTES)	Size (in bytes) of pageable physical memory in the file system cache used by OS code (file system read by Ntoskrnl.exe, Hal.dll, the boot driver, or Ntldr/osloader) #1, #2	double	No	2000, 2003, 2003 (IPF)	--
System Calls/sec (SYSTEM_CALLS_PER_SEC)	Rate (num./second) of system service routines called by processes being executed by the processor	float	No	2000, 2003, 2003 (IPF)	--

System Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
System Code Resident Bytes (SYSTEM_CODE_RESIDENT_BYTES)	Size (in bytes) of pageable physical memory used by OS code (file system read by Ntoskrnl.exe, Hal.dll, the boot driver, or Ntldr/osloader) #1, #2	double	No	2000, 2003, 2003 (IPF)	--
System Code Total Bytes (SYSTEM_CODE_TOTAL_BYTES)	Size (in bytes) of pageable virtual memory used by OS code (file system read by Ntoskrnl.exe, Hal.dll, the boot driver, or Ntldr/osloader) #1, #2	double	No	2000, 2003, 2003 (IPF)	--
System Driver Resident Bytes (SYSTEM_DRIVER_RESIDENT_BYTES)	Size (in bytes) of the pageable physical memory used by the device driver #1, #2	double	No	2000, 2003, 2003 (IPF)	--
System Driver Total Bytes (SYSTEM_DRIVER_TOTAL_BYTES)	Size (in bytes) of the pageable virtual memory that the device driver uses #1, #2	double	No	2000, 2003, 2003 (IPF)	--
System Type (SYSTEM_TYPE)	Processor type	string(50)	No	2000, 2003, 2003 (IPF)	--
System Up Time (SYSTEM_UP_TIME)	Total time (in seconds) the system has been running since the OS started #3	ulong	No	2000, 2003, 2003 (IPF)	--
Threads (THREADS)	Number of active threads being held in memory #1, #2	ulong	No	2000, 2003, 2003 (IPF)	--
Total APC Bypasses/sec (TOTAL_APC_BYPASSES_PER_SEC)	Rate (num./second) at which the processor avoided kernel APC (asynchronous procedure call) interrupts	float	No	2000	--

System Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Total DPC Bypasses/sec (TOTAL_DPC_BYPASSES_PER_SEC)	Rate (num./second) at which the processor avoided privilege mode DPC (deferred procedure call) interrupts, which are executed with lower priority than standard interrupts	float	No	2000	--
Total DPC Rate (TOTAL_DPC_RATE)	Average rate at which privilege-mode DPC (deferred procedure call) interrupts, which are executed with lower priority than standard interrupts, were added to the processor DPC queue between time clicks of the processor clock #1	ulong	No	2000, 2003, 2003 (IPF)	--
Total DPCs Queued/sec (TOTAL_DPCS_QUEUED_PER_SEC)	Average rate (num./second) at which privilege-mode DPC (deferred procedure call) interrupts, which are executed with lower priority than standard interrupts, were added to the processor DPQ queue	float	No	2000, 2003, 2003 (IPF)	--
Total Interrupts/sec (TOTAL_INTERRUPTS_PER_SEC)	Rate (num./second) at which the processor processed interrupts received from hardware components (system clock, mouse, disk driver, data communication line, NIC, or other peripheral device that can raise interrupts).  DPC (deferred procedure call) interrupts are not included. Usually, if this value is extraordinarily high when there is not system activity, it suggests a hardware problem, including the presence of a slow device.	float	No	2000, 2003, 2003 (IPF)	--
Total Physical Mem Mbytes (TOTAL_PHYSICAL_MEMORY_KBYTES)	Total size (in megabytes) of the physical memory #1, #3	double	No	2000, 2003, 2003 (IPF)	Return Value / 1MB

System Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Trans Pages RePurposed/sec (TRANS_PAGES_REPURPOSED_PER_SEC)	Rate (num./second) of transition cache pages that remained in the cache and were reused for a different purpose	double	No	2000, 2003, 2003 (IPF)	--
Transition Faults/sec (TRANSITION_FAULTS_PER_SEC)	Rate (num./second) of pages that were not paged even if a page used by another shared process or a page in the updated page listing or standby listing was recovered when a page fault occurred	float	No	2000, 2003, 2003 (IPF)	--
Used Physical Mem Mbytes (USED_PHYSICAL_MEMORY_BYTES)	Size (in megabytes) of the used physical memory space #1, #2	double	No	2000, 2003, 2003 (IPF)	TOTAL_PHYSICAL_MEMORY_KBYTES - AVAILABLE_BYTES
User CPU % (PCT_TOTAL_USER_TIME)	Usage (%) of the processor that executed threads in user mode. Rate of the elapsed time during which the processor executed non-idle threads in user mode. The maximum is 100 regardless of whether a single-processor or multiprocessor environment is in use.	float	No	2000, 2003, 2003 (IPF)	--
Work Item Shortages (WORK_ITEM_SHORTAGES)	Rate (num./second) at which STATUS_DATA_NOT_ACCEPTED (unable to use work item or unable to allocate work item) was returned at reception notification #2	float	No	2000, 2003, 2003 (IPF)	--
Write Bytes Cache/sec (WRITE_BYTES_CACHE_PER_SEC)	Rate (bytes/second) at which applications wrote data into the file system cache by using Redirector	float	No	2000, 2003, 2003 (IPF)	--
Write Bytes Net/sec (WRITE_BYTES_NETWORK_PER_SEC)	Rate (bytes/second) at which applications wrote data because data was not in the file system cache via a network	float	No	2000, 2003, 2003 (IPF)	--

System Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Write Bytes Nonpaging/sec (WRITE_BYTES_NON_PAGING_PER_SEC)	Rate (bytes/second) at which Redirector wrote data to a network computer in response to normal file requests by applications	float	No	2000, 2003, 2003 (IPF)	--
Write Bytes Paging/sec (WRITE_BYTES_PAGING_PER_SEC)	Rate (bytes/second) at which Redirector wrote data in response to application page faults	float	No	2000, 2003, 2003 (IPF)	--
Write Copies/sec (WRITE_COPIES_PER_SEC)	Rate (num./second) at which pages were copied from another area in physical memory when a page fault occurred	float	No	2000, 2003, 2003 (IPF)	--
Write Ops Random/sec (WRITE_OPERATIONS_RANDOM_PER_SEC)	Rate (num./second) at which random write operations were made after acquiring data on a file-by-file basis using a specific file handler	float	No	2000, 2003, 2003 (IPF)	--
Write Pkts Small/sec (WRITE_PACKETS_SMALL_PER_SEC)	Rate (num./second) at which applications wrote less than 1/4 of the server's negotiated buffer size	float	No	2000, 2003, 2003 (IPF)	--
Write Pkts/sec (WRITE_PACKETS_PER_SEC)	Rate (num./second) at which write packets sent with a write request were sent to the network	float	No	2000, 2003, 2003 (IPF)	--
Writes Denied/sec (WRITES_DENIED_PER_SEC)	Rate (num./second) at which the server was unable to accept write requests	float	No	2000, 2003, 2003 (IPF)	--
Writes Large/sec (WRITES_LARGE_PER_SEC)	Rate (num./second) at which applications wrote more than twice of the server's negotiated buffer size	float	No	2000, 2003, 2003 (IPF)	--

## 2.8.40 TCP Overview (PI\_TCP)

### Function

The TCP Overview (PI\_TCP) record stores performance data, taken at specific intervals, about the rate at which TCP segments were sent or received using the TCP protocol and about the number of TCP connections, etc.

*Note:* This record is not available in Windows Server 2003 (IPF).

Table 2.105 TCP Overview (PI\_TCP) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

None

### Lifetime

None

### Record Size

- Fixed part: 825 bytes
- Variable part: 0 bytes

Table 2.106 TCP Overview (PI\_TCP) Fields

TCP Overview (PI_TCP)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Conn Failures (CONNECTION_FAILURES)	Total number of times that TCP connections changed directly from a SYN-SENT or SYN-RCVD state to the CLOSED state, and the number of times the TCP connections changed directly from the SYN-RCVD state to the LISTEN state. (This is the cumulative value since the OS started.) #1, #2	ulong	No	2000, 2003	--
Conns Active (CONNECTIONS_ACTIVE)	Number of times that TCP connections changed directly from the CLOSED state to the SYN-SENT state. (This is the cumulative value since the OS started.) #1, #2	ulong	No	2000, 2003	--
Conns Established (CONNECTIONS_ESTABLISHED)	Total number of TCP connections in the ESTABLISHED state or CLOSE-WAIT state #1, #2	ulong	No	2000, 2003	--
Conns Passive (CONNECTIONS_PASSIVE)	Number of times that TCP connections changed from the LISTEN state to the SYN-RCVD state. (This is the cumulative value since the OS started.) #1, #2	ulong	No	2000, 2003	--
Conns Reset (CONNECTIONS_RESET)	Number of times that TCP connections changed directly from the ESTABLISHED or CLOSE-WAIT state to the CLOSED state. (This is the cumulative value since the OS started.) #1, #2	ulong	No	2000, 2003	--

TCP Overview (PI_TCP)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000, 2003	RECORD_TIME (T1) - RECORD_TIME (T0)
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003	--
Record Type (INPUT_RECORD_TYPE)	Record name (always TCP).	char(8)	No	2000, 2003	--
Segments Rcvd/sec (SEGMENTS_RECEIVED_PER_SEC)	Rate (num./second) at which segments were received, including segments received erroneously and segments existing on the established connection	float	No	2000, 2003	--
Segments Retransmitted/sec (SEGMENTS_RETRANSMITTED_PER_SEC)	Rate (num./second) at which previously transferred segments containing at least one byte of data were retransferred	float	No	2000, 2003	--
Segments Sent/sec (SEGMENTS_SENT_PER_SEC)	Rate (num./second) at which segments were sent, including connected segments but not including segments containing retransferred bytes	float	No	2000, 2003	--
Segments/sec (SEGMENTS_PER_SEC)	Rate (num./second) at which TCP segments were sent or received using the TCP protocol	float	No	2000, 2003	--

## 2.8.41 UDP Overview (PI\_UDP)

### Function

The UDP Overview (PI\_UDP) record stores performance data, taken at specific intervals, about the rate at which UDP datagrams were sent or received using UDP, and the number of various UDP errors, etc.

*Note:* This record is not available in Windows Server 2003 (IPF).

Table 2.107 UDP Overview (PI\_UDP) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

None

### Lifetime

None

### Record Size

- Fixed part: 761 bytes
- Variable part: 0 bytes

Table 2.108 UDP Overview (PI\_UDP) Fields

UDP Overview (PI_UDP)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Datagrams No Port/sec (DATAGRAMS_NO_PORT_PER_SEC)	Rate (num./second) of received UDP datagrams for which there was no application at the destination port	float	No	2000, 2003	--
Datagrams Rcvd Errors (DATAGRAMS_RECEIVED_ERRORS)	Number of received UDP datagrams that could not be delivered for reasons other than the absence of an application at the destination port #1, #2	ulong	No	2000, 2003	--

UDP Overview (PI_UDP)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Datagrams Rcvd/sec (DATAGRAMS_RECEIVED_PER_SEC)	Rate (num./second) at which UDP datagrams were delivered to UDP users	float	No	2000, 2003	--
Datagrams Sent/sec (DATAGRAMS_SENT_PER_SEC)	Rate (num./second) at which entities sent UDP datagrams	float	No	2000, 2003	--
Datagrams/sec (DATAGRAMS_PER_SEC)	Rate (num./second) at which entities sent or received UDP datagrams	float	No	2000, 2003	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000, 2003	RECORD_TIME (T1) - RECORD_TIME (T0)
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003	--
Record Type (INPUT_RECORD_TYPE)	Record name (always UDP)	char(8)	No	2000, 2003	--

## 2.8.42 Web Proxy Server Cache Overview (PI\_WPSC)

### Function

The Web Proxy Server Cache Overview (PI\_WPSC) record stores performance data, taken at specific intervals, about Web Proxy Server's URL cache.

### Notes:

- This record is supported by Proxy Server 2.0 and IIS Version 5.0 (in the Windows 2000 environment).
- This record is not available in Windows Server 2003 and Windows Server 2003 (IPF).

Table 2.109 Web Proxy Server Cache Overview (PI\_WPSC) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

None

### Lifetime

None

### Record Size

- Fixed part: 917 bytes
- Variable part: 0 bytes

Table 2.110 Web Proxy Server Cache Overview (PI\_WPSC) Fields

Web Proxy Server Cache Overview (PI_WPSC)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Active Refresh Bytes Rate (ACTIVE_REFRESH_BYTES_RATE)	Rate (bytes/second) at which data was retrieved from the Internet to actively refresh general URLs in the URL cache.	float	No	2000	--
Active URL Refresh Rate (ACTIVE_URL_REFRESH_RATE)	Rate (num./second) at which general URLs in the URL cache were actively refreshed from the Internet	float	No	2000	--
Bytes Committed Rate (BYTES_COMMITTED_RATE)	Rate (bytes/second) at which data was committed to the URL cache	float	No	2000	--
Bytes Retrieved Rate (BYTES_RETRIEVED_RATE)	Rate (bytes/second) at which data was retrieved from the URL cache	float	No	2000	--
Bytes in Cache (BYTES_IN_CACHE)	Amount (in bytes) of data contained in the URL cache #1, #2	double	No	2000	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000	RECORD_TIME (T1) - RECORD_TIME (T0)
Max Bytes Cached (MAX_BYTES_CACHED)	Maximum amount (in bytes) of data stored in the URL cache #1, #2	double	No	2000	--
Max URLs Cached (MAX_URLS_CACHED)	Maximum number of URLs stored in URL cache #1, #2	double	No	2000	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000	--
Record Type (INPUT_RECORD_TYPE)	Record name (always WPSC)	char (8)	No	2000	--

Web Proxy Server Cache Overview (PI_WPSC)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Total Actively Refreshed URLs (TOTAL_ACTIVELY_REFRESHED_URLS)	Number of general URLs in URL cache that were refreshed actively from the Internet since the Web Proxy Server started #1, #3	double	No	2000	--
Total Bytes Actively Refreshed (TOTAL_BYTES_ACTIVELY_REFRESHED)	Total amount (in bytes) of data retrieved from the Internet to actively refresh general URLs in the URL cache #1, #2	double	No	2000	--
Total Bytes Cached (TOTAL_BYTES_CACHED)	Total amount (in bytes) of data that has been stored in the URL cache since Web Proxy Server started #1, #3	double	No	2000	--
Total Bytes Retrieved (TOTAL_BYTES_RETRIEVED)	Total amount (in bytes) of data that has been retrieved from the URL cache since Web Proxy Server started #1, #3	double	No	2000	--
Total URLs Cached (TOTAL_URLS_CACHED)	Number of URLs stored in URL cache since Web Proxy Server started #1, #3	double	No	2000	--
Total URLs Retrieved (TOTAL_URLS_RETRIEVED)	Number of URLs retrieved from URL cache since Web Proxy Server started #1, #3	double	No	2000	--
URL Commit Rate (URL_COMMIT_RATE)	Rate (num./second) at which URLs were committed to the URL cache	float	No	2000	--
URL Retrieve Rate (URL_RETRIEVE_RATE)	Rate (num./second) at which URLs were retrieved from the URL cache	float	No	2000	--
URLs in Cache (URLS_IN_CACHE)	Number of URLs contained in the URL cache #1, #2	double	No	2000	--

## 2.8.43 Web Proxy Server Service (PI\_WPSS)

### Function

The Web Proxy Server Service (PI\_WPSS) record stores performance data, taken at specific intervals, about Web Proxy Server.

### Notes:

- This record is supported by Proxy Server 2.0 and IIS Version 5.0 (in the Windows 2000 environment).
- This record is not available in Windows Server 2003 and Windows Server 2003 (IPF).

Table 2.111 Web Proxy Server Service (PI\_WPSS) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

None

### Lifetime

None

### Record Size

- Fixed part: 1,257 bytes
- Variable part: 0 bytes

Table 2.112 Web Proxy Server Service (PI\_WPSS) Fields

Web Proxy Server Service (PI_WPSS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Cache Hit % (CACHE_HIT_RATIO_PCT)	Rate of request numbers that were processed using cached data to all the Internet service requests to Web Proxy Server (%) #1	float	No	2000	--
Client Bytes Rcvd/sec (CLIENT_BYTES_RECEIVED_PER_SEC)	Rate (bytes/second) that Web Proxy Server received data from Web Proxy Client.	float	No	2000	--

Web Proxy Server Service (PI_WPSS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Client Bytes Sent/sec (CLIENT_BYTES_SENT_PER_SEC)	Rate (bytes/second) that Web Proxy Server sent data to Web Proxy clients.	float	No	2000	--
Client Bytes Total/sec (CLIENT_BYTES_TOTAL_PER_SEC)	Rate (bytes/second) at which data was transferred between Web Proxy Server and all Web Proxy clients. This value is the sum of the Client Bytes Sent/sec and Client Bytes Rcvd/sec fields.	float	No	2000	--
Current Users (CURRENT_USERS)	Number of users connecting to Web Proxy Server #1, #2	ulong	No	2000	--
DNS Cache Entries (DNS_CACHE_ENTRIES)	Number of DNS domain name entries cached by Web Proxy Server #1, #2	ulong	No	2000	--
DNS Cache Flushes (DNS_CACHE_FLUSHES)	Number of times Web Proxy Server flushed or cleared the DNS cache #1, #2	ulong	No	2000	--
DNS Cache Hits (DNS_CACHE_HITS)	Number of times a DNS domain name was found in the DNS cache #1, #2	ulong	No	2000	--
DNS Cache Hits % (DNS_CACHE_HITS_PCT)	Rate (%) of all DNS entries retrieved from the Web Proxy Server cache, as a percentage of the DNS entries retrieved by the Web Proxy Server #1	float	No	2000	--
DNS Retrievals (DNS_RETRIEVALS)	Number of DNS domain names retrieved by Web Proxy Server #1, #2	ulong	No	2000	--
FTP Reqs (FTP_REQUESTS)	Number of FTP requests executed on Web Proxy Server #1, #2	ulong	No	2000	--
Gopher Reqs (GOPHER_REQUESTS)	Number of Gopher requests executed on Web Proxy Server #1, #2	ulong	No	2000	--
HTTP Reqs (HTTP_REQUESTS)	Number of HTTP requests executed on Web Proxy Server #1, #2	ulong	No	2000	--
HTTPS Sessions (HTTPS_SESSIONS)	Number of HTTP-protected sessions serviced by the SSL tunnel #1, #2	ulong	No	2000	--
Internet Bytes Rcvd/sec (INET_BYTES_RECEIVED_PER_SEC)	This field is not supported; its value is always 0.	float	No	Not Applicable	--

Web Proxy Server Service (PI_WPSS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Internet Bytes Sent/sec (INET_BYTES_SENT_PER_SEC)	This field is not supported; its value is always 0.	float	No	Not Applicable	--
Internet Bytes Total/sec (INET_BYTES_TOTAL_PER_SEC)	This field is not supported; its value is always 0.	float	No	Not Applicable	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records. For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000	RECORD_TIME (T1) - RECORD_TIME (T0)
Max Users (MAXIMUM_USERS)	Maximum number of users concurrently connected to Web Proxy Server #1, #2	ulong	No	2000	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000	--
Record Type (INPUT_RECORD_TYPE)	Record name (always WPSS)	char(8)	No	2000	--
SNEWS Sessions (SNEWS_SESSIONS)	Number of SNEWS sessions serviced by the SSL tunnel #1, #2	ulong	No	2000	--
SSL Client Bytes Rcvd/sec (SSL_CLIENT_BYTES_RECEIVED_PER_SEC)	Rate (bytes/second) at which the Web Proxy Server received SSL data from protected Web Proxy clients.	float	No	2000	--
SSL Client Bytes Sent/sec (SSL_CLIENT_BYTES_SENT_PER_SEC)	Rate (bytes/second) at which the Web Proxy Server sent SSL data to protected Web Proxy Clients	float	No	2000	--
SSL Client Bytes Total/sec (SSL_CLIENT_BYTES_TOTAL_PER_SEC)	Rate (bytes/second) at which data was transferred (sent or received) between Web Proxy Server and protected Web Proxy Clients. This value is the sum of the SSL Client Bytes Sent/sec and SSL Client Bytes Rcvd/sec fields.	float	No	2000	--
SSL Sessions Scavenged (SSL_SESSIONS_SCAVENGED)	Number of SSL sessions closed due to too many idle timeouts and SSL demands #1, #2	ulong	No	2000	--
Sites Denied (SITES_DENIED)	Number of Internet sites to which Web Proxy Server denied access #1, #2	ulong	No	2000	--

Web Proxy Server Service (PI_WPSS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Sites Granted (SITES_GRANTED)	Number of Internet sites for which Web Proxy Server granted access #1, #2	ulong	No	2000	--
Thread Pool Active Sessions (THREAD_POOL_ACTIVE_SESSIONS)	Number of sessions actively serviced by thread pool threads #1, #2	ulong	No	2000	--
Thread Pool Failures (THREAD_POOL_FAILURES)	Number of Internet service requests rejected because the thread pool was overcommitted #1, #2	ulong	No	2000	--
Thread Pool Size (THREAD_POOL_SIZE)	Number of threads in the thread pool #1, #2	ulong	No	2000	--
Total Cache Fetches (TOTAL_CACHE_FETCHES)	Total number of Internet service requests processed using data cached in the Web Proxy Server cache #1	ulong	No	2000	--
Total Failing Reqs (TOTAL_FAILING_REQUESTS)	Total number of Internet service requests that Web Proxy Server failed to process due to errors. Errors can be the result of Web Proxy Server failing to locate a requested server URL on the Internet, or the client being denied access to the requested URL. #1	ulong	No	2000	--
Total Internet Fetches (TOTAL_INTERNET_FETCHES)	This field is not supported; its value is always 0	ulong	No	Not Applicable	--
Total Reqs (TOTAL_REQUESTS)	Total number of Internet service requests that have been executed on Web Proxy Server so far #1, #2	ulong	No	2000	--
Total SSL Sessions (TOTAL_SSL_SESSIONS)	Total number of SSL sessions serviced by the SSL tunnel #1, #2	ulong	No	2000	--
Total Successful Reqs (TOTAL_SUCCESSFUL_REQUESTS)	Total number of Internet requests successfully processed by Web Proxy Server #1, #2	ulong	No	2000	--
Total Users (TOTAL_USERS)	Total number of users connected to Web Proxy Server #1, #2	ulong	No	2000	--

Web Proxy Server Service (PI_WPSS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Unknown SSL Sessions (UNKNOWN_SSL_SESSIONS)	Number of unknown SSL sessions serviced by the SSL tunnel #1, #2	ulong	No	2000	--

## 2.8.44 Web Service Overview (PI\_WEB)

### Function

The Web Service Overview (PI\_WEB) record stores performance data, taken at specific intervals, about the Web service, which is a component of Microsoft Internet Information Services(IIS).

This is a multi-instance record.

### Notes:

- This record is supported by IIS Version 5.0 or later.
- This record is not available in Windows Server 2003 (IPF).

Table 2.113 Web Service Overview (PI\_WEB) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

Instance (INSTANCE)

### Lifetime

From the website setup to the modification or deletion of its settings.

### Record Size

- Fixed part: 681 bytes
- Variable part: 1,434 bytes

Table 2.114 Web Service Overview (PI\_WEB) Fields

Web Service Overview (PI_WEB)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Anonymous Users/sec (ANONYMOUS_USERS_PER_SEC)	Rate (num./second) of anonymous users who connected to the Web service	float	No	2000, 2003	--

Web Service Overview (PI_WEB)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Async I/O Bandwidth Usage/min (MEASURED_ASYNC_IO_BANDWIDTH_USAGE)	Asynchronous I/O bandwidth (average number of bytes/minute) that the Web service sent or received. This field is used to calculate the total volume of user traffic on the server. #1, #2	ulong	No	2000, 2003	--
Bytes Rcvd/sec (BYTES_RECEIVED_PER_SEC)	Rate (bytes/second) at which the Web service received data	float	No	2000, 2003	--
Bytes Sent/sec (BYTES_SENT_PER_SEC)	Rate (bytes/second) at which the Web service sent data	float	No	2000, 2003	--
Bytes Total/sec (BYTES_TOTAL_PER_SEC)	Rate (bytes/second) at which the Web service sent or received data. This value is the sum of the Bytes Sent/sec and Bytes Rcvd/sec fields.	float	No	2000, 2003	--
CGI Reqs/sec (CGI_REQUESTS_PER_SEC)	Rate (num./second) at which CGI requests were concurrently processed by the Web service	float	No	2000, 2003	--
Conn Attempts/sec (CONNECTION_ATTEMPTS_PER_SEC)	Rate (num./second) at which connections to the Web service were attempted	float	No	2000, 2003	--
Copy Requests/Sec (COPY_REQUESTS_PER_SEC)	This is a reserved field; it is not available.	float	No	Not Applicable	--
Curr CAL Count for Authctd Users (CURRENT_CAL_FOR_AUTH_USERS)	Number of licenses concurrently used by the Web service for authorized connections. This is always 0 for Windows Server 2003. #1, #2	ulong	No	2000, 2003	--
Current Anonymous Users (CURRENT_ANONYMOUS_USERS)	Number of anonymous users connected to the Web service #1, #2	ulong	No	2000, 2003	--
Current Blocked Async I/O Reqs (CURRENT_BLOCKED_ASYNC_IO_REQUESTS)	Number of requests blocked temporarily due to bandwidth adjustment settings. Blocked requests are held in the buffer and released if the usable bandwidth increases before the timeout limit expires. #1, #2	ulong	No	2000, 2003	--

Web Service Overview (PI_WEB)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Current CAL Count for SSL Conns (CURRENT_CAL_FOR_SSL_ CONNS)	Number of licenses concurrently used by the Web service for connection.  This is always 0 for Windows Server 2003. #1, #2	ulong	No	2000, 2003	--
Current CGI Reqs (CURRENT_CGI_REQUESTS )	Number of CGI requests concurrently processed by the Web service #1,#2	ulong	No	2000, 2003	--
Current Conns (CURRENT_CONNECTIONS)	Number of connections established by the Web service. This value is the sum of the anonymous and nonanonymous user connections. #1,#2	ulong	No	2000, 2003	--
Current ISAPI Extension Reqs (CURRENT_ISAPI_EXTENS ION_REQUESTS)	Number of ISAPI extension requests concurrently processed by the Web service #1,#2	ulong	No	2000, 2003	--
Current Nonanonymous Users (CURRENT_NONANONYMOUS _USERS)	Number of nonanonymous users connected to the Web service.  Where valid authentication data is returned by the client following rejection of an anonymous connection request, the connection is counted as nonanonymous. #1,#2	ulong	No	2000, 2003	--
DELETE Reqs/sec (DELETE_REQUESTS_PER_ SEC)	Rate (num./second) of HTTP requests executed using the DELETE method	float	No	2000, 2003	--
Failed CAL Reqs for Authctd Usrs (FAILED_CAL_REQS_FOR_ AUTH_USERS)	Number of HTTP requests that have failed since the Web service started because an authorized user license was not available.  This is always 0 for Windows Server 2003. #1, #3	ulong	No	2000, 2003	--

Web Service Overview (PI_WEB)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Failed CAL Reqs for SSL Conns (FAILED_CAL_REQS_FOR_SSL_CONNS)	Number of HTTP requests that failed because a license for SSL connection was not available  This is always 0 for Windows Server 2003. #1, #2	ulong	No	2000, 2003	--
Files Rcvd/sec (FILES_RECEIVED_PER_SEC)	Rate (num./second) at which the Web service received files	float	No	2000, 2003	--
Files Sent/sec (FILES_SENT_PER_SEC)	Rate (num./second) at which the Web service sent files	float	No	2000, 2003	--
Files/sec (FILES_PER_SEC)	Rate (num./second) at which the Web service sent or received files	float	No	2000, 2003	--
GET Reqs/sec (GET_REQUESTS_PER_SEC)	Rate (num./second) of HTTP requests made using the GET method	float	No	2000, 2003	--
HEAD Reqs/sec (HEAD_REQUESTS_PER_SEC)	Rate (num./second) of HTTP requests made using the HEAD method	float	No	2000, 2003	--
ISAPI Extension Reqs/sec (ISAPI_EXTENSION_REQUESTS_PER_SEC)	Rate (num./second) of ISAPI extension requests concurrently processed by the Web service	float	No	2000, 2003	--
Instance (INSTANCE)	Web site name	string(526)	No	2000, 2003	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. Where summarized in a historical report, the last value stored is displayed.	ulong	No	2000, 2003	RECORD_TIME (T1) - RECORD_TIME (T0)
Interval2 (INTERVAL2)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000, 2003	RECORD_TIME (T1) - RECORD_TIME (T0)

Web Service Overview (PI_WEB)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Lock Requests/Sec (LOCK_REQUESTS_PER_SEC)	This is a reserved field; it is not available.	float	No	Not Applicable	--
Locked Errors/sec (LOCKED_ERRORS_PER_SEC)	This is a reserved field; it is not available.	float	No	Not Applicable	--
Logon Attempts/sec (LOGON_ATTEMPTS_PER_SEC)	Rate (num./second) of successful logons to the Web service	float	No	2000, 2003	--
Max Anonymous Users (MAXIMUM_ANONYMOUS_USERS)	Maximum number of anonymous users who connected concurrently to the Web service since the service started #1, #3	ulong	No	2000, 2003	--
Max CAL Count for Authctd Users (MAXIMUM_CAL_FOR_AUTH_USERS)	Maximum number of licenses concurrently used by the Web service for authorized connection.  This is always 0 for Windows Server 2003. #1, #2	ulong	No	2000, 2003	--
Max CAL Count for SSL Conns (MAXIMUM_CAL_FOR_SSL_CONNS)	Maximum number of licenses concurrently used by the Web service for SSL connection.  This is always 0 for Windows Server 2003. #1, #2	ulong	No	2000, 2003	--
Max CGI Reqs (MAXIMUM_CGI_REQUESTS)	Maximum number of CGI requests concurrently processed by the Web service since the service started #1, #2	ulong	No	2000, 2003	--
Max Conns (MAXIMUM_CONNECTIONS)	Maximum number of CGI requests that were processed concurrently by the Web service since the service started. This value is the sum of the anonymous and nonanonymous user connections. #1, #2	ulong	No	2000, 2003	--
Max ISAPI Extension Reqs (MAXIMUM_ISAPI_EXTENSION_REQUESTS)	Maximum number of ISAPI extension requests concurrently processed by the Web service since the service started #1, #2	ulong	No	2000, 2003	--

Web Service Overview (PI_WEB)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Max Nonanonymous Users (MAXIMUM_NONANONYMOUS_USERS)	Maximum number of nonanonymous users who connected concurrently to the Web service since the service started.  Where valid authentication data is returned by the client following rejection of an anonymous connection request, the connection is counted as nonanonymous. #1, #3	ulong	No	2000, 2003	--
Mkcol Requests/sec (MKCOL_REQUESTS_PER_SEC)	This is a reserved field; it is not available.	float	No	Not Applicable	--
Move Requests/sec (MOVE_REQUESTS_PER_SEC)	This is a reserved field; it is not available.	float	No	Not Applicable	--
Nonanonymous Users/sec (NONANONYMOUS_USERS_PER_SEC)	Rate (num./second) of nonanonymous user connections to the Web service.  Where valid authentication data is returned by the client following rejection of an anonymous connection request, the connection is counted as nonanonymous.	float	No	2000, 2003	--
Not-Found Errors/sec (NOT_FOUND_ERRORS_PER_SEC)	Rate (num./second) at which the server was unable to process requests because the requested document was not found.  Usually, this is notified to clients as the HTTP error code 404.	float	No	2000, 2003	--
Options Requests/Sec (OPTIONS_REQUESTS_PER_SEC)	This is a reserved field; it is not available.	float	No	Not Applicable	--

Web Service Overview (PI_WEB)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Other Req Methods/sec (OTHER_REQUEST_METHODS_PER_SEC)	Rate (num./second) of HTTP requests made using a method other than DELETE, GET, HEAD, POST, PUT and TRACE.  Usually, LINK or other methods supported by gateway applications are included.	float	No	2000, 2003	--
POST Reqs/sec (POST_REQUESTS_PER_SEC)	Rate (num./second) of HTTP requests made using the POST method	float	No	2000, 2003	--
PUT Reqs/sec (PUT_REQUESTS_PER_SEC)	Rate (num./second) of HTTP requests made using the PUT method.	float	No	2000, 2003	--
Propfind Requests/sec (PROPFIND_REQUESTS_PER_SEC)	This is a reserved field; it is not available.	float	No	Not Applicable	--
Proppatch Requests/sec (PROPPATCH_REQUESTS_PER_SEC)	This is a reserved field; it is not available.	float	No	Not Applicable	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003	--
Record Type (INPUT_RECORD_TYPE)	Record name (always WEB)	char(8)	No	2000, 2003	--
Search Requests/sec (SEARCH_REQUESTS_PER_SEC)	This is a reserved field; it is not available.	float	No	Not Applicable	--
Service Uptime (SERVICE_UPTIME)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
System Code Resident Bytes (SYSTEM_CODE_RESIDENT_BYTES)	This is a reserved field; it is not available.	float	No	Not Applicable	--
Total Allowed Async I/O Reqs (TOTAL_ALLOWED_ASYNC_IO_REQUESTS)	Total number of user requests that have been authorized by the Web service since the service started.  Bandwidth adjustment limits the number of user requests allowed. #1, #3	ulong	No	2000, 2003	--

Web Service Overview (PI_WEB)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Total Anonymous Users (TOTAL_ANONYMOUS_USERS)	Total number of anonymous users who connected concurrently to the Web service since the service started. #1, #3	ulong	No	2000, 2003	--
Total Blocked Async I/O Reqs (TOTAL_BLOCKED_ASYNC_IO_REQUESTS)	Total number of requests blocked temporarily due to bandwidth throttling settings since the Web service started.  Blocked requests are held in the buffer and released if the usable bandwidth increases before the timeout limit expires. #1, #3	ulong	No	2000, 2003	--
Total CGI Reqs (TOTAL_CGI_REQUESTS)	Total number of CGI requests executed since the Web service started #1, #3	ulong	No	2000, 2003	--
Total Conn Attempts (TOTAL_CONNECTION_ATTEMPTS)	Total number of times an attempt was made to connect to the Web service since the service started #1, #3	ulong	No	2000, 2003	--
Total Copy Requests (TOTAL_COPY_REQUESTS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Total DELETE Reqs (TOTAL_DELETE_REQUESTS)	Total number of HTTP requests made using the DELETE method since the Web service started #1, #3	ulong	No	2000, 2003	--
Total Files Rcvd (TOTAL_FILES_RECEIVED)	Total number of files the Web service has received since the Web service started #1, #3	ulong	No	2000, 2003	--
Total Files Sent (TOTAL_FILES_SENT)	Total number of files the Web service has sent since the Web service started #1, #3	ulong	No	2000, 2003	--
Total Files Xferd (TOTAL_FILES_TRANSFERRED)	Total number of files the Web service has transferred (sent or received) since the Web service started.  This value is the sum of the Total Files Sent and Total Files Rcvd fields. #1, #3	ulong	No	2000, 2003	--

Web Service Overview (PI_WEB)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Total GET Reqs (TOTAL_GET_REQUESTS)	Total number of HTTP requests made using the GET method since the Web service started #1, #3	ulong	No	2000, 2003	--
Total HEAD Reqs (TOTAL_HEAD_REQUESTS)	Total number of HTTP requests made using the HEAD method since the Web service started #1, #3	ulong	No	2000, 2003	--
Total ISAPI Extension Reqs (TOTAL_ISAPI_EXTENSION_REQUESTS)	Total number of ISAPI extension requests concurrently processed by the Web service since the service started #1, #3	ulong	No	2000, 2003	--
Total Lock Requests (TOTAL_LOCK_REQUESTS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Total Locked Errors (TOTAL_LOCKED_ERRORS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Total Logon Attempts (TOTAL_LOGON_ATTEMPTS)	Total number of successful logons to the Web service since the service started #1, #3	ulong	No	2000, 2003	--
Total Method Reqs (TOTAL_METHOD_REQUESTS)	Total number of HTTP requests made using the DELETE, GET, HEAD, POST, PUT, or TRACE method #1, #3	ulong	No	2000, 2003	--
Total Method Reqs/sec (TOTAL_METHOD_REQUESTS_PER_SEC)	Rate (num./second) of HTTP requests executed using DELETE, GET, HEAD, POST, PUT, or TRACE	float	No	2000, 2003	--
Total Mkcol Requests (TOTAL_MKCOL_REQUESTS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Total Move Requests (TOTAL_MOVE_REQUESTS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--

Web Service Overview (PI_WEB)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Total Nonanonymous Users (TOTAL_NONANONYMOUS_USERS)	Total number of nonanonymous users who connected concurrently to the Web service since the service started.  Where valid authentication data is returned by the client following rejection of an anonymous connection request, the connection is counted as nonanonymous. #1, #3	ulong	No	2000, 2003	--
Total Not-Found Errors (TOTAL_NOT_FOUND_ERRORS)	Total number of requests the server was unable to process since the Web service started because the requested document was not found.  Usually, this is notified to clients as the HTTP error code 404. #1, #3	ulong	No	2000, 2003	--
Total Options Requests (TOTAL_OPTIONS_REQUESTS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Total Other Req Methods (TOTAL_OTHER_REQUEST_METHODS)	Total number of HTTP requests that have been made using a method other than the DELETE, GET, HEAD, POST, PUT, and TRACE methods since the Web service started.  Usually, LINK or other methods supported by gateway applications are included. #1, #3	ulong	No	2000, 2003	--
Total POST Reqs (TOTAL_POST_REQUESTS)	Total number of HTTP requests that have been made using the POST method since the Web service started #1, #3	ulong	No	2000, 2003	--
Total PUT Reqs (TOTAL_PUT_REQUESTS)	Total number of HTTP requests that have been made using the PUT method since the Web service started #1, #3	ulong	No	2000, 2003	--
Total Propfind Requests (TOTAL_PROPFIND_REQUESTS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--

Web Service Overview (PI_WEB)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Total Proppatch Requests (TOTAL_PROPPATCH_REQUESTS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Total Rejected Async I/O Reqs (TOTAL_REJECTED_ASYNC_IO_REQUESTS)	Total number of requests that have been rejected due to bandwidth throttling settings since the Web service started. Unlike blocked requests, rejected requests are not held in the buffer. #1, #3	ulong	No	2000, 2003	--
Total Search Requests (TOTAL_SEARCH_REQUESTS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Total TRACE Reqs (TOTAL_TRACE_REQUESTS)	Total number of HTTP requests that have been made using the TRACE method since the Web service started #1, #3	ulong	No	2000, 2003	--
Total Unlock Requests (TOTAL_UNLOCK_REQUESTS)	This is a reserved field; it is not available.	ulong	No	Not Applicable	--
Trace Requests/sec (TRACE_REQUESTS_PER_SEC)	This is a reserved field; it is not available.	float	No	Not Applicable	--
Unlock Requests/sec (UNLOCK_REQUESTS_PER_SEC)	This is a reserved field; it is not available.	float	No	Not Applicable	--

## 2.8.45 WinSock Proxy Server Overview (PI\_WSPTS)

### Function

The WinSock Proxy Server Overview (PI\_WSPTS) record stores performance data, taken at specific intervals, about Microsoft WinSock Proxy Server.

### Notes:

- This record is supported by Proxy Server 2.0 and IIS Version 5.0 (in the Windows 2000 environment).
- This record is not available in Windows Server 2003 and Windows Server 2003 (IPF).

Table 2.115 WinSock Proxy Server Overview (PI\_WSPTS) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

None

### Lifetime

None

### Record Size

- Fixed part: 953 bytes
- Variable part: 0 bytes

Table 2.116 WinSock Proxy Server Overview (PI\_WSPTS) Fields

WinSock Proxy Server Overview (PI_WSPTS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Accepting TCP Conns (ACCEPTING_TCP_CONNEC TIONS)	Number of objects that waited for a TCP connection from Microsoft WinSock Proxy Client #1, #2	ulong	No	2000	--
Active Sessions (ACTIVE_SESSIONS)	Number of active Microsoft WinSock Proxy Server sessions #1, #2	ulong	No	2000	--

WinSock Proxy Server Overview (PI_WSPS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Active TCP Conns (ACTIVE_TCP_CONNECTIONS)	Number of active TCP connections, not including connections that are pending or not established #1, #2	ulong	No	2000	--
Active UDP Conns (ACTIVE_UDP_CONNECTIONS)	Number of active UDP connections #1, #2	ulong	No	2000	--
Available Control Worker Threads (AVAILABLE_CONTROL_WORKER_THREADS)	This field is not supported; its value is always 0.	ulong	No	Not Applicable	--
Available Data Worker Threads (AVAILABLE_DATA_WORKER_THREADS)	This field is not supported; its value is always 0.	ulong	No	Not Applicable	--
Back-Connecting TCP Conns (BACK_CONNECTING_TCP_CONNECTIONS)	Number of TCP connections waiting for completion of incoming connect () calls #1, #2	ulong	No	2000	--
Bytes Read/sec (BYTES_READ_PER_SEC)	Rate (bytes/second) at which data was read by the data pump	float	No	2000	--
Bytes Written/sec (BYTES_WRITTEN_PER_SEC)	Rate (bytes/second) at which data was written by the data pump	float	No	2000	--
Connecting TCP Conns (CONNECTING_TCP_CONNECTIONS)	Number of TCP connections waiting for completion between Microsoft WinSock Proxy Server and a remote computer #1, #2	ulong	No	2000	--
Control Worker Threads (CONTROL_WORKER_THREADS)	This field is not supported; its value is always 0.	ulong	No	Not Applicable	--
Data Worker Threads (DATA_WORKER_THREADS)	This field is not supported; its value is always 0.	ulong	No	Not Applicable	--
Failed DNS Resolutions (FAILED_DNS_RESOLUTIONS)	Number of gethostbyname () and gethostbyaddr () API calls that failed. These calls are used to resolve host DNS domain names and IP addressees when connecting to Microsoft WinSock Proxy. #1, #2	ulong	No	2000	--

WinSock Proxy Server Overview (PI_WSPTS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Interval (INTERVAL)	Interval (in seconds) between collections of stored records. For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000	RECORD_TIME (T1) - RECORD_TIME (T0)
Listening TCP Conns (LISTENING_TCP_CONNECTIONS)	Number of connected objects waiting for a TCP connection from a remote Internet computer #1, #2	ulong	No	2000	--
Nonconnected UDP Mappings (NON_CONNECTED_UDP_MAPPINGS)	Number of mappings available for UDP connection #1, #2	ulong	No	2000	--
Pending DNS Resolutions (PENDING_DNS_RESOLUTIONS)	Number of gethostbyname() and gethostbyaddr() API calls that are pending. These calls are used to resolve host DNS domain names and IP addresses when connecting to Microsoft WinSock Proxy. #1, #2	ulong	No	2000	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000	--
Record Type (INPUT_RECORD_TYPE)	Record name (always WSPS)	char(8)	No	2000	--
Successful DNS Resolutions (SUCCESSFUL_DNS_RESOLUTIONS)	Number of gethostbyname() and gethostbyaddr() API calls successfully returned. These calls are used to resolve host DNS domain names and IP addresses when connecting to Microsoft WinSock Proxy. #1, #2	ulong	No	2000	--

## 2.8.46 WINS Server Overview (PI\_WINS)

### Function

The WINS Server Overview (PI\_WINS) record stores performance data, taken at specific intervals, about the WINS server.

### Notes:

- This record is not available in Windows Server 2003 (x64) or Windows Server 2003 (IPF).
- Windows Internet Naming Service (WINS), which is a network service, must be installed.

Table 2.117 WINS Server Overview (PI\_WINS) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	No
Log	No	Yes
LOGIF	(Blank)	

### Key Fields

None

### Lifetime

None

### Record Size

- Fixed part: 921 bytes
- Variable part: 0 bytes

Table 2.118 WINS Server Overview (PI\_WINS) Fields

WINS Server Overview (PI_WINS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Failed Queries/sec (FAILED_QUERIES_PER_SEC)	Rate (num./second) of queries that WINS Server was unable to receive	float	No	2000, 2003	--
Failed Releases/sec (FAILED_RELEASES_PER_SEC)	Rate (num./second) of releases that WINS Server was unable to receive	float	No	2000, 2003	--

WINS Server Overview (PI_WINS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Group Conflicts/sec (GROUP_CONFLICTS_PER_SEC)	Rate (num./second) of incidents in which group registrations received by the WINS Server resulted in conflicts with records in the database	float	No	2000, 2003	--
Group Registrations/sec (GROUP_REGISTRATIONS_PER_SEC)	Rate (num./second) of group registrations received by WINS Server	float	No	2000, 2003	--
Group Renewals/sec (GROUP_RENEWALS_PER_SEC)	Rate (num./second) of group renewals received by WINS Server	float	No	2000, 2003	--
Interval (INTERVAL)	Interval (in seconds) between collections of stored records.  For real-time reports, the initial value is 5. For historical report summaries, the total for the summarized records is displayed.	ulong	No	2000, 2003	RECORD_TIME(T1) - RECORD_TIME(T0)
Queries/sec (QUERIES_PER_SEC)	Rate (num./second) of queries received by WINS Server	float	No	2000, 2003	--
Record Time (RECORD_TIME)	Record creation time	time_t	No	2000, 2003	--
Record Type (INPUT_RECORD_TYPE)	Record name (always WINS)	char(8)	No	2000, 2003	--
Releases/sec (RELEASES_PER_SEC)	Rate (num./second) of releases received by WINS Server	float	No	2000, 2003	--
Successful Queries/sec (SUCCESSFUL_QUERIES_PER_SEC)	Rate (num./second) of successful queries received by WINS Server	float	No	2000, 2003	--
Successful Releases/sec (SUCCESSFUL_RELEASES_PER_SEC)	Rate (num./second) of successful releases received by WINS Server	float	No	2000, 2003	--
Total Conflicts/sec (TOTAL_NUMBER_OF_CONFLICTS_PER_SEC)	Rate (num./second) of conflicts recognized by WINS Server. This value is the sum of the Group Conflicts/sec and Unique Conflicts/sec fields.	float	No	2000, 2003	--

WINS Server Overview (PI_WINS)					
View Name (Manager Name)	Description	Format	Delta	Supported Versions	Data Source
Total Registrations/sec (TOTAL_NUMBER_OF_REGS_ PER_SEC)	Rate (num./second) of registrations received by WINS Server. This value is the sum of the Group Registrations/sec and Unique Registrations/sec fields.	float	No	2000, 2003	--
Total Renewals/sec (TOTAL_NUMBER_OF_RENEW ALS_PER_SEC)	Rate (num./second) of renewals received by WINS Server. This value is the sum of the Group Renewals/sec and Unique Renewals/sec fields.	float	No	2000, 2003	--
Unique Conflicts/sec (UNIQUE_CONFLICTS_PER_ SEC)	Rate (num./second) of incidents in which unique registrations and renewals received by WINS Server conflicted with records in the database.	float	No	2000, 2003	--
Unique Registrations/sec (UNIQUE_REGISTRATIONS_ PER_SEC)	Rate (num./second) of unique registrations received by WINS Server	float	No	2000, 2003	--
Unique Renewals/sec (UNIQUE_RENEWALS_PER_S EC)	Rate (num./second) of unique renewals received by WINS Server	float	No	2000, 2003	--

## 2.8.47 Reserved and Unavailable Records

The following records are reserved and unavailable:

- Active Server Pages Overview (PI\_ASP)
- Broker Service - MSNLogon (PI\_BRKS)
- Chat Service Overview (PI\_CHAT)
- Content Index Detail (PD\_CIND)
- Content Index Filter Detail (PD\_CINF)
- Exchange Database Overview (PI\_EDB)
- FTP Server Overview (PI\_FTPS)
- Gateway Service for NetWare (PI\_GTWY)
- Generic Data Detail (PD\_GEND)
- Generic Data Interval (PI\_GENI)
- Gopher Service Overview (PI\_GOPH)
- HTTP Content Index Overview (PI\_HTCL)
- HTTP Service Overview (PI\_HTTP)
- Image Detail (PD\_IMAG)
- Internet Addon Services Global (PI\_IASG)
- 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 Segment Overview (PI\_NSEG)
- NNTP Server Client Overview (PI\_NTCL)
- NNTP Server Service Overview (PI\_NTSS)
- POP3 Server Overview (PI\_POP3)
- Process Address Space Detail (PD\_ADRS)
- Send Mail Overview (PI\_SNDM)
- SMTP Server Overview (PI\_SMTP)
- Telephony Overview (PI\_TELE)
- Thread Detail (PD\_THRD)
- Thread Details Detail (PD\_THD)
- Vote Management Overview (PI\_VOTE)

## 2.9 Agent for Platform (UNIX) Records

Table 2.119 lists the records that can be collected by Agent for Platform and the information that is stored in each record.

**Table 2.119 Records of Agent for Platform (UNIX) Records**

Record Name	Record ID	Information Stored in Record
CPU - Per Processor Detail	PI_CPUP	Performance data, taken at specific intervals, about usage status of a processor.
Device Detail	PI_DEVD	Performance data, taken at specific intervals, about usage status of a local disk device.
Device Summary	PI_DEVS	Performance data that summarizes information in the Device Detail (PI_DEVD) records (at specific intervals).
File System Detail - Local	PD_FSL	Performance data indicating the capacity (at a specific point in time) of a local file system.
File System Detail - Remote	PD_FSR	Performance data indicating the capacity (at a specific point in time) of a remote file system.
IPC Summary	PD_IPCS	Performance data indicating the status (at a specific point in time) of interprocess communication (IPC) functionality, such as the message queue, semaphores, and shared memory. This record is not available in Solaris 10 and Linux.
Logged Messages	PL_MESS	Messages written in the log file specified in the default monitoring log file or in the event file. This record is not available in Linux. The default monitoring log files used for each OS are as follows: <ul style="list-style-type: none"> <li>▪ HP-UX <code>/var/adm/syslog/syslog.log</code></li> <li>▪ Solaris <code>/var/adm/messages</code></li> <li>▪ AIX There is no default monitoring log file.</li> </ul>
Message Queue Detail	PD_MSQD	Performance data indicating the status (at a specific point in time) of the message queue. This record is not available in Solaris 10, AIX and Linux.
Network Interface Detail	PI_NIND	Performance data, taken at specific intervals, about a network interface.
Network Interface Summary	PI_NINS	Performance data that summarizes information in the Network Interface Detail (PD_NIND) records (at specific intervals).
NFS Client Detail	PI_NCD	Performance data (detailed information), taken at specific intervals, about NFS client activity. This record is not available in Solaris 10 and Linux.

Record Name	Record ID	Information Stored in Record
NFS Client Overview	PI_NCO	Performance data (overview information), taken at specific intervals, about NFS client activity. This record is not available in Solaris 10 and Linux.
NFS Server Detail	PI_NSD	Performance data (detailed information), taken at specific intervals, about NFS server activity. This record is not available in Solaris 10 and Linux.
NFS Server Overview	PI_NSO	Performance data (overview information), taken at specific intervals, about NFS server activity. This record is not available in Solaris 10 and Linux.
Process Detail	PD	Performance data indicating the status (at a specific point in time) of a process.
Process Detail Interval	PD_PDI	Performance data, taken at specific intervals, about a process.
Process Summary	PD_PDS	Performance data that summarizes information in Process Detail (PD) records (at a specific point in time).
Program Summary	PD_PGM	Performance data that summarizes information in Process Detail (PD) records. A Program Summary (PD_PGM) record summarizes the information (at a specific point in time) for each program.
Quotas	PD_UFSQ	Performance data indicating a user's disk file quota (at a specific point in time) for a local file system. This record is not available in Solaris 10, AIX 5L V5.3 and Linux.
Semaphore Detail	PD_SEMD	Performance data indicating the status (at a specific point in time) of a semaphore. This record is not available in Solaris 10, AIX and Linux.
Shared Memory Detail	PD_SHMD	Performance data indicating the status (at a specific point in time) of shared memory mapping and usage. This record is not available in HP-UX 11i V2 (PA-RISC), Solaris 10, AIX, and Linux.
System Summary Overview	PI	Performance data, taken at specific intervals, about the entire system.
Tape Device Summary	PI_TAPS	Performance data that summarizes information in Device Detail (PI_DEVD) records. A Device Summary (PI_TAPS) record summarizes the information (taken at specific intervals) about tape-device usage. This record is not available in HP-UX, Solaris 10, AIX and Linux.
Terminal Summary	PD_TERM	Performance data that summarizes information in Process Detail (PD) records. A Terminal Summary (PD_TERM) record summarizes the information (at a specific point in time) for each terminal. One record is created for each terminal.
User Data Detail	PD_UPD	Reserved record (not available).
User Data Detail - Extended	PD_UPDB	
User Data Interval	PI_UPI	

Record Name	Record ID	Information Stored in Record
User Data Interval - Extended	PI_UPIB	
User File System Storage	PD_UFSS	Performance data indicating the status (at a specific point in time) of the local file system being used by a user registered in the system. This record is not available in Solaris 10 and Linux 4.
User Summary	PD_USER	Performance data that summarizes information in Process Detail (PD) records. A User Summary (PD_USER) record summarizes the information (at a specific point in time) for each user.
Workgroup Summary	PI_WGRP	Performance data that summarizes information in Process Detail (PD) records. A Workgroup Summary (PI_WGRP) record summarizes the information (at a specific point in time) for each workgroup.

## 2.9.1 CPU - Per Processor Detail (PI\_CPUP)

### Function

The CPU - Per Processor Detail (PI\_CPUP) record stores performance data, taken at specific intervals, about usage status of a processor. Each time you collect performance data, one record is created for each processor. This is a multi-instance record.

### Notes:

- In the global zone of Solaris 10, processes in all zones will be collected.
- Some performance data cannot be collected correctly if the CPU system resource is changed during startup of a service of Agent for Platform by using any of the following functions: the DLPAR function of AIX 5L V5.2 (or later), vPars function of HP-UX 11i V1, or DR function of Solaris 8 (or later). For details about changing system resources, see section 2.6.3.2.
- When micro-partitioning is used in AIX 5L V5.3, records are created for each logically partitioned processor. For information about the records and fields affected by micro-partitioning, see section 2.6.3.3.

Table 2.120 CPU - Per Processor Detail (PI\_CPUP) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	
Log	No	
LOGIF	(Blank)	

### Key Fields

Processor ID (LOGICAL\_PROCESSOR\_ID)

### Lifetime

None

### Record Size

- Fixed part: 681 bytes
- Variable part: 376 bytes

Table 2.121 CPU - Per Processor Detail (PI\_CPUP) Fields

CPU - Per Processor Detail (PI_CPUP)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Boot Time (SYSTEM_BOOT_TIME)	Time of the last boot	time_t	No	--	--
Context Switches (PROCESSOR_CONTEXT_SWITCHES)	Number of times context switch was executed	ulong	Yes	HP-UX, Linux	--
Context Switches/sec (PROCESSOR_CONTEXT_SWITCHES_PER_SECOND)	Frequency at which context switch was executed (times per second)	float	Yes	HP-UX, Linux	PROCESSOR_CONTEXT_SWITCHES / INTERVAL
CPU % (KERNELMODE_USERMODE_PERCENT)	Utilization rate (%) of the CPU by the processor	float	No	--	$((\text{PROCESSOR\_USER\_TIME} + \text{PROCESSOR\_SYSTEM\_TIME}) / (\text{PROCESSOR\_USER\_TIME} + \text{PROCESSOR\_SYSTEM\_TIME} + \text{PROCESSOR\_IDLE\_TIME} + \text{PROCESSOR\_WAIT\_TIME})) * 100$
Idle % (PROCESSOR_IDLE_PERCENT)	Percentage (%) of time the processor was idle	float	No	--	$\text{PROCESSOR\_IDLE\_TIME} / (\text{PROCESSOR\_USER\_TIME} + \text{PROCESSOR\_SYSTEM\_TIME} + \text{PROCESSOR\_IDLE\_TIME} + \text{PROCESSOR\_WAIT\_TIME}) * 100$
Idle Time (PROCESSOR_IDLE_TIME)	Length of time (in seconds) the processor was idle	utime	Yes	--	--
Interrupts (PROCESSOR_INTERRUPTS)	Number of interrupts that occurred	ulong	Yes	HP-UX, AIX,	--
Interrupts/sec (PROCESSOR_INTERRUPTS_PER_SECOND)	Frequency at which interrupts occurred (interrupts per second)	float	Yes	HP-UX, AIX	PROCESSOR_INTERRUPTS / INTERVAL

CPU - Per Processor Detail (PI_CPUP)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Interval (INTERVAL)	Interval (in seconds) for storing the CPU - Per Processor Detail (PI_CPUP) record	ulong	Yes	--	<ul style="list-style-type: none"> <li>▪ For real-time reports: RECORD_TIME - <i>last-boot-time</i></li> <li>▪ For other reports: RECORD_TIME - <i>previous-record-time</i></li> </ul>
Processor ID (LOGICAL_PROCESSOR_ID)	Processor identifier	string(12)	No	--	--
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record type (always CPUP)	char(8)	No	--	--
Status (PROCESSOR_STATUSES)	Processor status	string(12)	No	--	--
Sys Calls/sec (PROCESSOR_SYSTEM_CALLS_PER_SECOND)	Frequency at which system calls occurred (calls per second)	float	Yes	HP-UX, Linux	PROCESSOR_SYSTEM_CALLS / INTERVAL
System % (PROCESSOR_SYSTEM_PERCENT)	Percentage (%) of time the system operated in kernel mode	float	No	--	PROCESSOR_SYSTEM_TIME / (PROCESSOR_USER_TIME + PROCESSOR_SYSTEM_TIME + PROCESSOR_IDLE_TIME + PROCESSOR_WAIT_TIME) * 100
System Calls (PROCESSOR_SYSTEM_CALLS)	Number of system calls that occurred	ulong	Yes	HP-UX, Linux	--
System Time (PROCESSOR_SYSTEM_TIME)	Length of time (in seconds) the processor operated in kernel mode	utime	Yes	--	--
Traps (PROCESSOR_TRAPS)	Number of traps executed	ulong	Yes	HP-UX, AIX, Linux	--

CPU - Per Processor Detail (PI_CPUP)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Traps/sec (PROCESSOR_TRAPS_PER_SECOND)	Frequency at which traps were set (traps per second)	float	Yes	HP-UX, AIX, Linux	PROCESSOR_TRAPS / INTERVAL
Type (PROCESSOR_TYPE)	Processor description	string(40)	No	--	--
Up Time (SYSTEM_UP_TIME)	Length of time (in seconds) since last boot	string(20)	No	--	RECORD_TIME - SYSTEM_BOOT_TIME
User % (PROCESSOR_USER_PERCENT)	Percentage (%) of time the processor operated in user mode	float	No	--	PROCESSOR_USER_TIME / (PROCESSOR_USER_TIME + PROCESSOR_SYSTEM_TIME + PROCESSOR_IDLE_TIME + PROCESSOR_WAIT_TIME) * 100
User Time (PROCESSOR_USER_TIME)	Length of time (in seconds) the processor operated in user mode	utime	Yes	--	--
Wait % (PROCESSOR_WAIT_PERCENT)	Percentage of time (%) the processor was waiting for I/Os	float	No	--	PROCESSOR_WAIT_TIME / (PROCESSOR_USER_TIME + PROCESSOR_SYSTEM_TIME + PROCESSOR_IDLE_TIME + PROCESSOR_WAIT_TIME) * 100
Wait Time (PROCESSOR_WAIT_TIME)	Length of time (in seconds) the processor was waiting for I/Os	utime	Yes	--	--

## 2.9.2 Device Detail (PI\_DEVD)

### Function

The Device Detail (PI\_DEVD) record stores performance data, taken at specific intervals, about usage status of a local disk device. Each time you collect performance data, one record is created for each local disk device. This is a multi-instance record.

### Notes:

- To collect Device Detail (PI\_DEVD) records in AIX, execute the `smitty chgsys` command and set **Continuously maintain DISK I/O history to true**.
- In Linux, the Device Detail (PI\_DEVD) record collects performance data for the block device where the major number and block information exists in `devices.txt`<sup>#</sup> among the information recorded in `/proc/partitions`.

#

`devices.txt` is located under the following directories:

- Linux 3  
`/usr/share/doc/MAKEDEV-3.3.12.3`
  - Linux 4  
`/usr/share/doc/MAKEDEV-3.15`
- Some performance data cannot be collected correctly if the device system resource is changed during startup of a service of Agent for Platform by using the DR function of Solaris 8 or later. For details about changing system resources, see section 2.6.3.2.

Table 2.122 Device Detail (PI\_DEVD) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	
Log	Yes	
LOGIF	(Blank)	

### Key Fields

Device Name (`DEVICE_NAME`)

Lifetime

None

Record Size

- Fixed part: 681 bytes
- Variable part: 405 bytes

Table 2.123 Device Detail (PI\_DEVD) Fields

Device Detail (PI_DEVD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Avg Service Time (AVG_SERVICE_TIME)	Average I/O operation time (in seconds) on a device	utime	No	--	TOTAL_SERV ICE_TIME / TOTAL_OPS
Avg Wait Time (AVG_WAIT_TIME)	Average I/O wait time (in seconds) on a device	utime	No	AIX	TOTAL_WAIT_ TIME / TOTAL_OPS
Busy % (BUSY_PERCENT)	Disk busy rate (%). If operations are continuously performed on a device, this value might exceed 100.	float	No	--	(TOTAL_BUSY TIME / INTERVAL) * 100
Device Name (DEVICE_NAME)	Device name. In Linux 3, the device name is displayed in the format <code>dev"major-number" - "minor-number"</code> .	string(40)	No	--	--
Device Type (DEVICE_TYPE)	Device type: disk or tape	string(5)	No	--	--
I/O Mbytes (TOTAL_IO_MBYTES)	Total transfer size (in megabytes) of I/O processes	float	Yes	--	--
Interval (INTERVAL)	Interval (in seconds) for storing the Device Detail (PI_DEVD) record	ulong	Yes	--	<ul style="list-style-type: none"> <li>▪ For real-time reports: RECORD_TI ME - <i>last-boot-time</i></li> <li>▪ For other reports: RECORD_TI ME - <i>previous-record-time</i></li> </ul>
Mbytes Xferd/sec (MBYTES_TRANSFERR ED_PER_SECOND)	Average I/O speed (megabytes per second)	float	Yes	--	TOTAL_IO_MB BYTES / INTERVAL
Queue Length (QUEUE_LENGTH)	Device queue length. One unit of this value is one second of I/O operations.	ulong	No	AIX	--
Read % (READ_OPS_PERCENT)	Percentage of I/O processes that were read processes (%)	float	No	HP-UX, AIX,	READ_OPS / (READ_OPS + WRITE_OPS) * 100

Device Detail (PI_DEVD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Read Mbytes (TOTAL_READ_MBYTES)	Transfer size of read processes (in megabytes)	float	Yes	HP-UX	--
Read Ops (READ_OPS)	Number of read processes that occurred	ulong	Yes	HP-UX, AIX,	--
Reads/sec (READ_OPS_PER_SECOND)	Frequency at which read processes occurred (times per second)	float	Yes	HP-UX, AIX,	READ_OPS / INTERVAL
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record type (always DEVD)	char(8)	No	--	--
Seek Ops (SEEK_OPS)	Number of seek processes	ulong	Yes	Solaris, AIX, Linux	--
Total Busy Time (TOTAL_BUSY_TIME)	Total busy time of a device (in seconds). If operations are continuously performed on a device, this value might exceed the Interval value.	utime	Yes	--	--
Total I/O Ops (TOTAL_OPS)	Number of I/O processes that occurred	ulong	Yes	--	--
Total I/O Ops/sec (TOTAL_OPS_PER_SECOND)	Frequency at which I/O processes occurred (times per second)	float	Yes	--	TOTAL_OPS / INTERVAL
Total Service Time (TOTAL_SERVICE_TIME)	Total operating time of processes on a device (in seconds). This value includes wait time. In HP-UX, this value is the total operation time of all I/Os. If operations are continuously performed on a device, this value might greatly exceed the Interval value. In the same situation on other OSs, this value might also exceed the Interval value.	utime	Yes	--	--

Device Detail (PI_DEVD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Total Wait Time (TOTAL_WAIT_TIME)	Total wait time of processes on a device (in seconds).  In HP-UX and Linux, this value is the total operation time of all I/Os. If operations are continuously performed on a device, this value might greatly exceed the Interval value.	utime	Yes	AIX	--
Wait Length Time (WAIT_LEN_TIME)	Total I/O wait time on a device (in seconds). This value is calculated by integrating the wait time and the result of the following expression: <i>(number-of-I/O-operations-on-wait)/(number-of-I/O-operations-that-can-be-performed-in-one-second)</i> .	utime	Yes	AIX	--
Write % (WRITE_OPS_PERCENT)	Percentage of I/O processes that were write processes (%)	float	No	HP-UX, AIX	$\frac{\text{WRITE\_OPS}}{\text{READ\_OPS} + \text{WRITE\_OPS}} * 100$
Write Mbytes (TOTAL_WRITE_MBYTES)	Transfer size of write processes (in megabytes)	float	Yes	HP-UX	--
Write Ops (WRITE_OPS)	Number of write processes that occurred	ulong	Yes	HP-UX, AIX	--
Writes/sec (WRITE_OPS_PER_SECOND)	Frequency at which write processes occurred (times per second)	float	Yes	HP-UX, AIX	$\frac{\text{WRITE\_OPS}}{\text{INTERVAL}}$

### 2.9.3 Device Summary (PI\_DEVS)

#### Function

The Device Summary (PI\_DEVS) record stores performance data that summarizes information in the Device Detail (PI\_DEVD) records (at specific intervals). Even without collecting Device Detail (PI\_DEVD) records, the collected performance data is stored in this record.

#### Notes:

- To collect Device Summary (PI\_DEVS) records in AIX, execute the `smitty chgsys` command and set **Continuously maintain DISK I/O history** to true.
- In Linux 3, the Device Summary (PI\_DEVS) record collects performance data for the devices that have the major numbers 3, 8, 22, 33, 34, 56, 57, 65 to 71, 88 to 91, and 128 to 135 in `devices.txt`<sup>#</sup> among the information recorded in `/proc/partitions`.

For major numbers, see the numerical values directly after `dev` in the Device Name (DEVICE\_NAME) field of the Device Detail (PI\_DEVD) record.

#

`devices.txt` is located under the following directory:

- Linux3

`/usr/share/doc/MAKEDEV-3.3.12.3`

- In Linux 4, the Device Summary (PI\_DEVS) record collects performance data for the devices that have the major numbers 3, 8, 22, 33, 34, 56, 57, 65 to 71, 88 to 91, and 128 to 135 in `devices.txt`<sup>#</sup> among the information recorded in `/proc/partitions`.

For major numbers, see the block devices that match the contents of the Device Name (DEVICE\_NAME) fields of Device Detail (PI\_DEVD) records and that are specified in `devices.txt`.

#

`devices.txt` is located under the following directory:

- Linux4

`/usr/share/doc/MAKEDEV-3.15`

- Some performance data cannot be collected correctly if the device system resource is changed during startup of a service of Agent for Platform by using the DR function of Solaris 8 or later. For details about changing system resources, see section 2.6.3.2.

Table 2.124 Device Summary (PI\_DEVS) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	
Log	No	
LOGIF	(Blank)	

## Key Fields

None

## Lifetime

None

## Record Size

- Fixed part: 1,069 bytes
- Variable part: 0 bytes

Table 2.125 Device Summary (PI\_DEVS) Fields

Device Summary (PI_DEVS)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Avg Service Time/device (SERVICE_TIME)	Average time of operations on devices per device (in seconds). In HP-UX, this value is the total operation time of all I/Os. If operations are continuously performed on a device, this value might greatly exceed the Interval value. In the same situation on other OSs, this value might also exceed the Interval value.	utime	No	--	TOTAL_SERVICE_TIME / DEVICE_COUNT
Avg Service Time/op (AVG_SERVICE_TIME)	Average I/O operation time on a device (in seconds)	utime	No	--	TOTAL_SERVICE_TIME / TOTAL_IO_OPS
Busy % (BUSY_PERCENT)	Average disk busy rate (%). If operations are continuously performed on a device, this value might exceed 100.	float	No	--	((TOTAL_BUSY_TIME / INTERVAL) / DEVICE_COUNT) * 100
Devices (DEVICE_COUNT)	Number of devices	ulong	No	--	Number of Device Detail (PI_DEVD) records summarized in the Device Summary (PI_DEVS) record

Device Summary (PI_DEVS)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
I/O Mbytes (TOTAL_IO_MBYTES)	Total transfer size of I/O processes (in megabytes)	double	Yes	--	--
Interval (INTERVAL)	Interval (in seconds) for storing the Device Summary (PI_DEVS) record	ulong	Yes	--	<ul style="list-style-type: none"> <li>▪ For real-time reports: RECORD_TIME - last-boot-time</li> <li>▪ For other reports: RECORD_TIME - previous-record-time</li> </ul>
Mbytes Xferd/sec (MBYTES_TRANSFERRED_PER_SECOND)	Average speed of I/O processes (in megabytes per second)	float	Yes	--	TOTAL_IO_MBYTES / INTERVAL
Queue Length (QUEUE_LENGTH)	Average queue length of the device. One unit of this value is one second of I/O operations.	ulong	No	AIX	sum-of-queue-lengths-of-all-devices / DEVICE_COUNT
Read Ops % (READ_OPS_PERCENT)	Percentage of I/O processes that were read processes (%)	float	No	HP-UX, AIX	TOTAL_READ_OPS / TOTAL_IO_OPS * 100
Reads (TOTAL_READ_OPS)	Number of read processes that occurred	ulong	Yes	HP-UX, AIX	--
Reads/sec (READ_OPS_PER_SECOND)	Frequency at which read processes occurred (times per second)	float	Yes	HP-UX, AIX	TOTAL_READ_OPS / INTERVAL
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record type (always DEVS)	char(8)	No	--	--
Seek Ops (SEEK_OPS)	Number of seek processes	ulong	Yes	Solaris, AIX, Linux	--

Device Summary (PI_DEVS)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Total Busy Time (TOTAL_BUSY_TIME)	Total busy time on a device (in seconds). If operations are continuously performed on a device, this value field might exceed the result of Interval x Devices.	utime	Yes	--	--
Total I/O Ops (TOTAL_IO_OPS)	Number of I/O processes that occurred	ulong	Yes	--	TOTAL_READ_OPS + TOTAL_WRITE_OPS
Total I/O Ops/sec (TOTAL_OPS_PER_SECOND)	Frequency at which I/O processes occurred (times per second)	float	Yes	--	TOTAL_IO_OPS / INTERVAL
Total Service Time (TOTAL_SERVICE_TIME)	Total operating time of processes on devices (including wait time) (in seconds). In HP-UX, this value is the total operation time of all I/Os. If operations are continuously performed on a device, this value might greatly exceed the result of Interval x Devices. In the same situation on other OSs, this value might also exceed the result of Interval x Devices.	utime	Yes	--	--
Total Wait Length Time (TOTAL_WAIT_LENGTH_TIME)	Total device wait time (in seconds). This value is calculated by integrating the wait time and the result of the following expression: <i>(number-of-I/O-operations-on-wait)/(number-of-I/O-operations-that-can-be-performed-in-one-second)</i> .	utime	Yes	AIX	--

Device Summary (PI_DEVS)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Total Wait Time (TOTAL_WAIT_TIME)	Total wait time of processes on devices (in seconds).  In HP-UX and Linux, this value is the total operation time of all I/Os. If operations are continuously performed on a device, this value might greatly exceed the result of Interval X Devices.	utime	Yes	AIX	--
Wait Length Time (WAIT_LEN_TIME)	Average wait time (in seconds) for I/O operations per device. This value is calculated by integrating the wait time and the result of the following expression, and then dividing the integration result by the number of devices: <i>(number-of-I/O-operations-on-wait)/(number-of-I/O-operations-that-can-be-performed-in-one-second)</i> .	utime	No	AIX	TOTAL_WAIT_LEN_TIME / DEVICE_COUNT
Wait Time (WAIT_TIME)	Average wait time (in seconds) for operations per device.  In HP-UX and Linux, this value is the total operation time of all I/Os. If operations are continuously performed on a device, this value might greatly exceed the Interval value.	utime	No	AIX	TOTAL_WAIT_TIME / DEVICE_COUNT
Write Ops % (WRITE_OPS_PERCENT)	Percentage (%) of I/O processes that were write processes	float	No	HP-UX, AIX	TOTAL_WRITE_OPS / TOTAL_IO_OPS * 100
Writes (TOTAL_WRITE_OPS)	Number of write processes that occurred	ulong	Yes	HP-UX, AIX	--
Writes/sec (WRITE_OPS_PER_SECOND)	Frequency at which write processes occurred (times per second)	float	Yes	HP-UX, AIX	TOTAL_WRITE_OPS / INTERVAL

## 2.9.4 File System Detail - Local (PD\_FSL)

### Function

The File System Detail - Local (PD\_FSL) record stores performance data indicating the capacity (at a specific point in time) of a local file system. One record is created for each local file system. This is a multi-instance record.

### Notes:

- Operate Agent for Platform (UNIX) so it can reference information about remote file systems that are mounted (a status in which the `df` command executes normally). If no response is returned from a remote file system that is mounted, the Agent Collector service hangs up when it attempts to collect the File System Detail - Local (PD\_FSL) record and cannot continue collecting performance data.  
  
For details about the error recovery methods when collection of performance data cannot continue, see section 2.6.3.1.
- In HP-UX, Solaris, and Linux, the file system region for general users is defined as the sum of the file system regions currently in use and the file system regions that are available. The superuser file system region also includes reserved file system regions. There are no reserved regions with AIX, so there is no distinction between the general user file system region and the superuser file system region.
- In HP-UX, Solaris, and Linux, the i-node count for general users is defined as the sum of the i-nodes currently in use and the i-nodes that are available. The i-node count for superusers also includes the number of reserved i-nodes. There are no reserved i-nodes with AIX, so there is no distinction between the i-node count for general users and the i-node count for superusers.
- For special file systems, it may not be possible to collect performance data. For example, a remote file system that cannot fetch the remote host name may not be able to handle a virtual local file system as a local file system.
- In the field table of this record, the *fundamental filesystem block size* (FFBS) is an allocation unit that is used for creating a file system. The number of blocks for the fundamental filesystem block size is called the *number of fundamental blocks*. The *preferred filesystem block size* (PFBS) is an allocation unit that is used for I/O operations. The number of blocks for the preferred filesystem block size is called the *number of logical blocks*.
- In Solaris 10, `/system/contract` and `/system/object` will not be collected.
- In Linux 4, `/sys` and `/var/lib/nfs/pro_pipefs` will not be collected.

Table 2.126 File System Detail - Local (PD\_FSL) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	3600	Yes
Collection Offset	0	
Log	Yes	
LOGIF	(Blank)	

**Key Fields**

File System (FILESYSTEM\_NAME)

**Lifetime**

From when the file system is mounted until the file system is unmounted.

**Record Size**

- Fixed part: 681 bytes
- Variable part: 1,216 bytes

Table 2.127 File System Detail - Local (PD\_FSL) Fields

File System Detail - Local (PD_FSL)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Available Space % (TOTAL_MBYTES_AVAILABLE_PERCENT)	Percentage (%) of space (in megabytes) available to general users	float	No	--	$(\text{TOTAL\_MBYTES\_AVAILABLE} / (\text{TOTAL\_SIZE\_IN\_MBYTES} - \text{TOTAL\_MBYTES\_RESERVED})) * 100$
Available Space Blocks (TOTAL_BLOCKS_AVAILABLE)	Number of logical blocks available to general users	double	No	--	--
Available Space Mbytes (TOTAL_MBYTES_AVAILABLE)	Amount of space (in megabytes) available to general users	double	No	--	$(\text{number-of-fundamental-blocks-available-to-general-users} * \text{fundamental-file-system-block-size}) / 1\text{MB}$

File System Detail - Local (PD_FSL)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Block Size (BLOCKSIZE)	Logical block size (in bytes)	double	No	--	--
Blocks Free (TOTAL_BLOCKS_FREE)	Number of logical blocks not in use	double	No	--	--
Blocks in Use (TOTAL_BLOCKS_IN_USE)	Number of logical blocks in use	double	No	--	--
Device Name (DEVICE_NAME)	Name of the device where the file system resides	string(40)	No	--	--
File System (FILESYSTEM_NAME)	Mount point of the file system	string(1024)	No	--	--
File System Type (FILESYSTEM_TYPE)	File system type (e.g., UFS, HFS)	string(20)	No	--	--
Interval (INTERVAL)	Interval (in seconds) for storing the File System Detail - Local (PD_FSL) record	ulong	No	All	--
Mbytes Free (TOTAL_MBYTES_FREE)	Amount of space (in megabytes) not in use	double	No	--	(TOTAL_BLOCKS_FREE * fundamental-file- system-block- size) / 1MB
Mbytes Free % (TOTAL_MBYTES_FREE_PERCENT)	Percentage (%) of space (in megabytes) not in use	float	No	--	(TOTAL_MBYTES_FREE / TOTAL_SIZE_IN_MBYTES) * 100
Mbytes Rsvd (TOTAL_MBYTES_RESERVED)	Amount of space (in megabytes) reserved for superusers	double	No	AIX	TOTAL_MBYTES_FREE - TOTAL_MBYTES_AVAILABLE
Mbytes Rsvd % (TOTAL_MBYTES_RESERVED_PERCENT)	Percentage (%) of space (in megabytes) reserved for superusers	float	No	AIX	(TOTAL_MBYTES_RESERVED / TOTAL_SIZE_IN_MBYTES) * 100

File System Detail - Local (PD_FSL)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Mbytes in Use (TOTAL_MBYTES_IN_USE)	Amount of space (in megabytes) used by general users	double	No	--	$((TOTAL\_SIZE\_IN\_BLOCKS - TOTAL\_BLOCKS\_FREE) * fundamental-block-size) / 1MB$
Mbytes in Use % (TOTAL_MBYTES_IN_USE_PERCENT)	Percentage (%) of space (in megabytes) used by general users	float	No	--	$(TOTAL\_BYTES\_IN\_USE / (TOTAL\_SIZE\_IN\_BYTES - TOTAL\_BYTES\_RESERVED)) * 100$
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record type (always FSL)	char(8)	No	--	--
Total Inodes (TOTAL_NUMBER_OF_INODES)	Number of file system i-nodes	ulong	No	--	--
Total Inodes Available (TOTAL_INODES_AVAILABLE)	Number of i-nodes available to general users	ulong	No	--	--
Total Inodes Available % (TOTAL_INODES_AVAILABLE_PERCENT)	Percentage (%) of i-nodes available to general users	float	No	--	$(TOTAL\_INODES\_AVAILABLE / (TOTAL\_NUMBER\_OF\_INODES - TOTAL\_INODES\_RESERVED)) * 100$
Total Inodes Free (TOTAL_INODES_FREE)	Number of i-nodes not in use	ulong	No	--	--
Total Inodes Free % (TOTAL_INODES_FREE_PERCENT)	Percentage (%) of i-nodes not in use	float	No	--	$(TOTAL\_INODES\_FREE / TOTAL\_NUMBER\_OF\_INODES) * 100$

File System Detail - Local (PD_FSL)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Total Inodes Rsvd (TOTAL_INODES_RESERVED)	Number of i-nodes reserved for superuser	ulong	No	AIX, Linux	TOTAL_INODES_FREE - TOTAL_INODES_AVAILABLE
Total Inodes Rsvd % (TOTAL_INODES_RESERVED_PERCENT)	Percentage (%) of i-nodes reserved for superuser	float	No	AIX, Linux	(TOTAL_INODES_RESERVED / TOTAL_NUMBER_OF_INODES) * 100
Total Inodes in Use (TOTAL_INODES_IN_USE)	Number of i-nodes in use	ulong	No	--	TOTAL_NUMBER_OF_INODES - TOTAL_INODES_FREE
Total Inodes in Use % (TOTAL_INODES_IN_USE_PERCENT)	Percentage (%) of i-nodes in use	float	No	--	(TOTAL_INODES_IN_USE / (TOTAL_NUMBER_OF_INODES - TOTAL_INODES_RESERVED)) * 100
Total Size Blocks (TOTAL_SIZE_IN_BLOCKS)	Number of logical blocks in the file system	double	No	--	--
Total Size Mbytes (TOTAL_SIZE_IN_MBYTES)	Size of the file system (in megabytes)	double	No	--	(number-of-fundamental-blocks * fundamental-file-system-block-size) / 1MB

## 2.9.5 File System Detail - Remote (PD\_FSR)

### Function

The File System Detail - Remote (PD\_FSR) record stores performance data indicating the capacity (at a specific point in time) of a remote file system. One record is created for each remote file system. This is a multi-instance record.

### Notes:

- Operate Agent for Platform (UNIX) so it can reference information about remote file systems that are mounted (a status in which the `df` command executes normally). If no response is returned from a remote file system that is mounted, the Agent Collector service hangs up when it attempts to collect the File System Detail - Remote (PD\_FSR) record and cannot continue collecting performance data.  
  
For details about the error recovery methods when collection of performance data cannot continue, see section 2.6.3.1.
- In HP-UX, Solaris, and Linux, the file system region for general users is defined as the sum of the file system regions currently in use and the file system regions that are available. The superuser file system region also includes reserved file system regions. There are no reserved regions with AIX, so there is no distinction between the general user file system region and the superuser file system region.
- For special file systems, it may not be possible to collect performance data. For example, a remote file system that cannot fetch the remote host name may not be able to handle a virtual local file system as a local file system.
- The *Not Supported* column in the field table of the File System Detail - Remote (PD\_FSR) record indicates the platform of the remote file system.
- In the field table of this record, the *fundamental filesystem block size* (FFBS) is an allocation unit that is used for creating a file system. The number of blocks for the fundamental filesystem block size is called the *number of fundamental blocks*. The *preferred filesystem block size* (PFBS) is an allocation unit that is used for I/O operations. The number of blocks for the preferred filesystem block size is called the *number of logical blocks*.

Table 2.128 File System Detail - Remote (PD\_FSR) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	3600	Yes
Collection Offset	0	
Log	Yes	
LOGIF	(Blank)	

## Key Fields

- File System (FILESYSTEM\_NAME)
- IP Address (IP\_ADDRESS)

## Lifetime

From when the file system is mounted until the file system is unmounted

## Record Size

- Fixed part: 681 bytes
- Variable part: 1,672 bytes

Table 2.129 File System Detail - Remote (PD\_FSR) Fields

File System Detail - Remote (PD_FSR)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Available Blocks (TOTAL_BLOCKS_AVAILABLE)	Number of logical blocks available to general users	double	No	--	--
Available Space % (TOTAL_MBYTES_AVAILABLE_PERCENT)	Percentage (%) of space (in megabytes) available to general users	float	No	--	(TOTAL_MBYTES_AVAILABLE / (TOTAL_SIZE_IN_MBYTES - TOTAL_MBYTES_RESERVED)) * 100
Available Space Mbytes (TOTAL_MBYTES_AVAILABLE)	Amount of space (in megabytes) available to general users	double	No	--	(number-of-fundamental-blocks-available-to-general-users * fundamental-file-system-block-size) / 1MB
Block Size (BLOCKSIZE)	Logical block size (in bytes)	double	No	--	--
Blocks Free (TOTAL_BLOCKS_FREE)	Number of logical blocks not in use	double	No	--	--
Blocks in Use (TOTAL_BLOCKS_IN_USE)	Number of logical blocks in use	double	No	--	--

File System Detail - Remote (PD_FSR)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Host (HOSTNAME)	Host name where the file system resides	string(256)	No	--	--
IP Address (IP_ADDRESS)	IP address of the host where the file system resides	string(20)	No	--	--
Interval (INTERVAL)	Interval (in seconds) for storing the File System Detail - Remote (PD_FSR) record	ulong	No	All	--
Mbytes Free (TOTAL_MBYTES_FREE)	Amount of space (in megabytes) not in use	double	No	--	$(TOTAL\_BLOCKS\_FREE * fundamental-block-size) / 1MB$
Mbytes Free % (TOTAL_MBYTES_FREE_PERCENT)	Percentage (%) of space (in megabytes) not in use	float	No	--	$(TOTAL\_MBYTES\_FREE / TOTAL\_SIZE\_IN\_MBYTES) * 100$
Mbytes Rsvd (TOTAL_MBYTES_RESERVED)	Amount of space (in megabytes) reserved for superusers	double	No	AIX	$TOTAL\_MBYTES\_FREE - TOTAL\_MBYTES\_AVAILABLE$
Mbytes Rsvd % (TOTAL_MBYTES_RESERVED_PERCENT)	Percentage (%) of space (in megabytes) reserved for superusers	float	No	AIX	$(TOTAL\_MBYTES\_RESERVED / TOTAL\_SIZE\_IN\_MBYTES) * 100$
Mbytes in Use (TOTAL_MBYTES_IN_USE)	Amount of space (in megabytes) used by general users	double	No	--	$((TOTAL\_SIZE\_IN\_BLOCKS - TOTAL\_BLOCKS\_FREE) * fundamental-block-size) / 1MB$

File System Detail - Remote (PD_FSR)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Mbytes in Use % (TOTAL_MBYTES_IN_USE_PERCENT)	Percentage (%) of space (in megabytes) used by general users	float	No	--	$(\text{TOTAL\_MBYTES\_IN\_USE} / (\text{TOTAL\_SIZE\_IN\_MBYTES} - \text{TOTAL\_MBYTES\_RESERVED})) * 100$
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record type (always FSR)	char(8)	No	--	--
Remote File System (REMOTE_FILESYSTEM_NAME)	Remote file system name	string(256)	No	--	--
Total Size Blocks (TOTAL_SIZE_IN_BLOCKS)	Number of logical blocks in the file system	double	No	--	--
Total Size Mbytes (TOTAL_SIZE_IN_MBYTES)	Size of the file system (in megabytes)	double	No	--	$(\text{number-of-fundamental-blocks} * \text{fundamental-block-size}) / 1\text{MB}$

## 2.9.6 IPC Summary (PD\_IPCS)

### Function

The IPC Summary (PD\_IPCS) record stores performance data indicating the status (at a specific point in time) of the interprocess communications (IPC) functionality, such as the status of the message queue, semaphores, and shared memory.

### Notes:

- This record is not available in Solaris 10 and Linux.
- To collect IPC Summary (PD\_IPCS) records using Solaris, you must first execute the following three commands:
  - `modload -p sys/msgsys`
  - `modload -p sys/semsys`
  - `modload -p sys/shmsys`

Table 2.130 IPC Summary (PD\_IPCS) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	3600	Yes
Collection Offset	0	
Log	No	
LOGIF	(Blank)	

### Key Fields

None

### Lifetime

None

### Record Size

- Fixed part: 797 bytes
- Variable part: 0 bytes

Table 2.131 IPC Summary (PD\_IPCS) Fields

IPC Summary (PD_IPCS)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Interval (INTERVAL)	Interval (in seconds) for storing the IPC Summary (PD_IPCS) record (always 0)	ulong	No	All	--
Max Message Entries (MSGMAP)	Maximum number of messages that can be stored in the message queue	ulong	No	Solaris, AIX, Linux	--
Max Msg Outstanding (MSGTQL)	Maximum number of messages that can be left nonprocessed (under AIX, this value is calculated by multiplying the maximum number of messages that can be stored in the message queue by the maximum message queue ID value)	ulong	No	Solaris 10, AIX, Linux	--
Max Msg Queue IDs (MSGMNI)	Maximum message queue ID value	ulong	No	Solaris 10, Linux	--
Max Msg Size (MSGMAX)	Maximum message size (in bytes)	ulong	No	Solaris 10, Linux	--
Max Msg Total Bytes (MSGMNB)	Maximum size that can be stored in the message queue (in bytes)	ulong	No	Solaris 10, Linux	--
Max Semaphores/ID (SEMMSL)	Maximum number of semaphores allowed for one ID	ulong	No	Solaris 10, Linux	--
Max Semops (SEMOPM)	Maximum number of processes allowed for one semaphore	ulong	No	Solaris 10, Linux	--
Max Shared Mem Segments (SHMSEG)	Maximum number of shared memory segments that can be attached to one process	ulong	No	Solaris 9, Solaris 10, AIX, Linux	--
Max Shared Mem Size (SHMMAX)	Maximum size of shared memory segments (in bytes)	double	No	Solaris 10, AIX, Linux	--
Max Undo (SEMUME)	Maximum number of undo entries allowed for one process	ulong	No	Solaris 10, Linux	--

IPC Summary (PD_IPCS)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Min Shared Mem Size (SHMMIN)	Minimum size of shared memory segments (in bytes)	ulong	No	Solaris 9, Solaris 10, Linux	--
Msg Segment Size (MSGSSZ)	Message segment size (in bytes)	ulong	No	Solaris, AIX, Linux	--
Msg Segments Alloc (MSGSEG)	Number of message segments used	ulong	No	Solaris, AIX, Linux	--
Processes Attached (SHRSEGNPROC)	Number of processes attached to shared memory segment	ulong	No	HP-UX 11i V2 (PA-RISC), Solaris 10, AIX, Linux	--
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	time_t	No	Solaris 10, Linux	--
Record Type (INPUT_RECORD_TYPE)	Record type (always IPCS)	char (8)	No	Solaris 10, Linux	--
Semaphore IDs (SEMMNI)	Number of defined semaphore IDs	ulong	No	Solaris 10, Linux	--
Semaphore Adjust Max Value (SEMAEM)	When a semaphore value is SEM_UNDO, the value used to adjust the semaphore when it is detached from a process. As a result, changes processing makes to the semaphore value are undone when detached.	ulong	No	Solaris 10, Linux	--
Semaphore IDs in Use (SEMNID)	Number of semaphore IDs in use	ulong	No	Solaris 10, AIX, Linux	--
Semaphore Map Entries (SEMMAP)	Number of entries defined by the semaphore map	ulong	No	Solaris, AIX, Linux	--
Semaphore Max Value (SEMVMX)	Maximum semaphore value	ulong	No	Solaris 10, Linux	--
Semaphore Undo Structures (SEMMNU)	Number of undo entries in the system (under AIX, this value is the same as the NPROC kernel variable)	ulong	No	Solaris 10, Linux	--
Semaphores (SEMMNS)	Number of semaphores in the system	ulong	No	Solaris 10, AIX, Linux	--

IPC Summary (PD_IPCS)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Semaphores in Use (SEMNUM)	Number of semaphores in use	ulong	No	Solaris 10, AIX, Linux	--
Shared Mem % in Swap (SHRSEGPERCUSE)	Percentage (%) of the amount of shared memory (in bytes) in the swap region	float	No	HP-UX 11i V2 (PA-RISC), Solaris 10, AIX, Linux	--
Shared Mem Alloc (SHRSEGTOTAL)	Shared memory size (in bytes) in use	double	No	HP-UX 11i V2 (PA-RISC), Solaris 10, AIX, Linux	--
Shared Mem IDs (SHMMNI)	Number of shared memory IDs	ulong	No	Solaris 10, Linux	--
Shared Mem Segments (SHRSEGN)	Number of shared memory segments in use	ulong	No	HP-UX 11i V2 (PA-RISC), Solaris 10, AIX, Linux	--
Undo Size (SEMUSZ)	Total size (in bytes) of undo entries	ulong	No	Solaris 10, Linux	--

## 2.9.7 Logged Messages (PL\_MESS)

### Function

The Logged Messages (PL\_MESS) record stores the messages that have been written in the log file specified in the default monitoring log file or in the event file. One record is created per message line in the log file. This is a multi-instance record.

The default monitoring log files used for each OS are as follows:

- HP-UX

`/var/adm/syslog/syslog.log`

- Solaris

`/var/adm/messages`

- AIX

There is no default monitoring log file.

For details about the event file, see the *HiCommand Tuning Manager Agent Administration Guide*.

### Notes:

- This record is not available in Linux.
- To collect this record in AIX 5L V5.2, optional packages for the OS need to be installed. For details on the optional packages, see the appendix in the *HiCommand Tuning Manager Installation Guide*.
- The only log files this record monitors are incremental files. The increments since the start of log file monitoring are collected as data. If there is no increment, no data is collected.
- For the log file to be monitored, specify its absolute path name in the event file. If log files are specified in both the default monitoring log file and the event file, both files are monitored. If the log file specified in the event file is invalid, an OS error occurs when Agent for Platform starts, and the `KAVF10203-W` message is displayed. When this message is displayed, correct the log file and then restart Agent for Platform.
- Log file information will not be collected if an asterisk (\*) is contained in the logfile item of the event file.
- If the same path and identifier (ID) are specified more than once in the event file, they are summarized in a single record. If the same path and identifier (ID) are specified in both the default monitoring log file and the event file, they are treated as separate records.

- If you specify a space for a log file, that log file will not be monitored.
- To display this record in real-time reports, the display changes as follows:
  - If the definition for displaying a delta value has not been made, all message texts added from the service startup time to the current time are displayed.
  - If the definition for displaying a delta value has been made, only the message texts added between display intervals are displayed.

Table 2.132 Logged Messages (PL\_MESS) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	
Log	No	
LOGIF	(Blank)	

### Key Fields

Message Text (MESSAGE\_TEXT)

### Lifetime

None

### Record Size

- Fixed part: 681 bytes
- Variable part: 512 bytes

Table 2.133 Logged Messages (PL\_MESS) Fields

Logged Messages (PL_MESS)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Interval (INTERVAL)	Interval (in seconds) for storing the Logged Messages (PL_MESS) record (always 0)	ulong	No	All	--
Message Text (MESSAGE_TEXT)	Message text (consists of one line of information taken from the log file)	string(512)	No	Linux	--
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	time_t	No	Linux	--
Record Type (INPUT_RECORD_TYPE)	Record type (always MESS)	char(8)	No	Linux	--

## 2.9.8 Message Queue Detail (PD\_MSQD)

### Function

The Message Queue Detail (PD\_MSQD) record stores performance data indicating the status (at a specific point in time) of the message queue. This is a multi-instance record.

### Notes:

- This record is not available in Solaris 10, AIX, and Linux.
- To collect Message Queue Detail (PD\_MSQD) in Solaris, you must execute the following command in advance: `modload -p sys/msgsys`

Table 2.134 Message Queue Detail (PD\_MSQD) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	3600	Yes
Collection Offset	0	
Log	No	
LOGIF	(Blank)	

### Key Fields

- Key (KEY)
- ID (ID)

### Lifetime

From when the message queue is created until the queue is deleted

### Record Size

- Fixed part: 681 bytes
- Variable part: 212 bytes

Table 2.135 Message Queue Detail (PD\_MSQD) Fields

Message Queue Detail (PD_MSQD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Bytes Outstanding (CBYTES)	Size of unprocessed messages (in bytes)	ulong	No	Solaris 10, AIX, Linux	--
Change Time (CTIME)	Time at which message queue was created or modified	time_t	No	Solaris 10, AIX, Linux	--

Message Queue Detail (PD_MSQD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Creator Group ID (CGROUP)	Group ID of the creator	ulong	No	Solaris 10, AIX, Linux	--
Creator Group Name (CREATOR_GROUP)	Group name of the creator	string(36)	No	Solaris 10, AIX, Linux	Search based on the value of the Creator Group ID field
Creator Login ID (CREATOR)	Login ID of the creator	ulong	No	Solaris 10, AIX, Linux	--
Creator Login Name (CREATOR_NAME)	Login name of the creator	string(36)	No	Solaris 10, AIX, Linux	Search based on the value of the Creator Login ID field
ID (ID)	Message queue identifier	ulong	No	Solaris 10, AIX, Linux	--
Interval (INTERVAL)	Interval (in seconds) for storing the Message Queue Detail (PD_MSQD) record (always 0)	ulong	No	All	--
Key (KEY)	Key for creating and defining IPC packets	ulong	No	Solaris 10, AIX, Linux	--
Last Receive Time (RTIME)	Time the message queue last received a message	time_t	No	Solaris 10, AIX, Linux	--
Last Receiving PID (LRPID)	Process ID that last received a message from the message queue	ulong	No	Solaris 10, AIX, Linux	--
Last Send Time (STIME)	Time the message queue last sent a message	time_t	No	Solaris 10, AIX, Linux	--
Last Sending PID (LSPID)	Process ID that last sent a message to the message queue	ulong	No	Solaris 10, AIX, Linux	--
Max Outstanding Bytes (QBYTES)	Maximum size of an unprocessed message that can be stored (in bytes)	ulong	No	Solaris 10, AIX, Linux	--
Messages Outstanding (QNUM)	Number of unprocessed messages	ulong	No	Solaris 10, AIX, Linux	--
Mode (MODE)	Access permissions of the message queue	string(12)	No	Solaris 10, AIX, Linux	--

Message Queue Detail (PD_MSQD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Owner Group ID (GROUP)	Group ID of the owner	ulong	No	Solaris 10, AIX, Linux	--
Owner Group Name (OWNER_GROUP)	Group name of the owner	string(36)	No	Solaris 10, AIX, Linux	Search based on the value of the Owner Group ID field
Owner Login ID (OWNER)	Login ID of the owner	ulong	No	Solaris 10, AIX, Linux	--
Owner Login name (OWNER_NAME)	Login name of the owner	string(36)	No	Solaris 10, AIX, Linux	Search based on the value of the Owner Login ID field
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	time_t	No	Solaris 10, AIX, Linux	--
Record Type (INPUT_RECORD_TYPE)	Record type (always MSQD)	char(8)	No	Solaris 10, AIX, Linux	--

## 2.9.9 Network Interface Detail (PI\_NIND)

### Function

The Network Interface Detail (PI\_NIND) record stores performance data, taken at specific intervals, about a network interface. The interfaces include the loopback, local token ring adapter, and Ethernet adapter interfaces. You can place multiple network interfaces on a single machine. Each interface has multiple IP addresses. Each time you collect performance data, one record is created for each network interface. However, only the first IP address found is used. Some of the performance data stored in this record is also stored in System Summary Overview (PI) records. This is a multi-instance record.

### Notes:

- The interface flag set in the Flags (FLAGS) field allows you to determine the following flags:
  - AIX:  
UP, BROADCAST, DEBUG, LOOPBACK, POINTOPOINT, NOTRAILERS, RUNNING, NOARP, PROMISC, ALLMULTI, OACTIVE, SIMPLEX, MULTICAST
  - HP-UX:  
UP and LOOPBACK
  - Solaris:  
UP, BROADCAST, DEBUG, LOOPBACK, POINTOPOINT, NOTRAILERS, RUNNING, NOARP, PROMISC, ALLMULTI, INTELLIGENT, MULTICAST, MULTI\_BCAST, UNNUMBERED, PRIVATE
  - Linux:  
UP, BROADCAST, DEBUG, LOOPBACK, POINTOPOINT, NOTRAILERS, RUNNING, NOARP, PROMISC, ALLMULTI, MULTICAST, MASTER, SLAVE, PORTSEL, AUTOMEDIA, DYNAMIC
- In Linux 4, the `sit0` interface will not be collected.
- In Solaris 10, only the physical interface will be collected.
- Some performance data cannot be collected correctly if the LAN board system resource is changed during startup of a service of Agent for Platform by using the DR function of Solaris 8 or later. For details about changing system resources, see section 2.6.3.2.

Table 2.136 Network Interface Detail (PI\_NIND) Default and Changeable Values

Item	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	
Log	No	
LOGIF	(Blank)	

**Key Fields**

- Interface (INTERFACE\_NAME)
- IP Address (IP\_ADDRESS)

**Lifetime**

None

**Record Size**

- Fixed part: 681 bytes
- Variable part: 620 bytes

Table 2.137 Network Interface Detail (PI\_NIND) Fields

Network Interface Detail (PI_NIND)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Broadcast Address (BROADCAST_ADDRESS)	First broadcast address found (displayed in Internet address format). In HP-UX, Solaris and Linux, the broadcast address of a loopback instance is not displayed.	string(20)	No	--	--
Flags (FLAGS)	Interface flag setting. If this value consists of 80 or more characters, the last character is >. Under HP-UX, all flags that express the interface status are included in this value (with the ifconfig command, only one part of the flag is displayed)	string(80)	No	--	--
IP Address (IP_ADDRESS)	First IP address found (displayed in Internet address format)	string(20)	No	--	--

Network Interface Detail (PI_NIND)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Interface (INTERFACE_NAME)	Interface name	string(40)	No	--	--
Interval (INTERVAL)	Interval (in seconds) for storing the Network Interface Detail (PI_NIND) record	ulong	Yes	--	<ul style="list-style-type: none"> <li>▪ For real-time reports: RECORD_TIME - <i>last-boot-time</i></li> <li>▪ For other reports: RECORD_TIME - <i>previous-record-time</i></li> </ul>
Max Transmission Unit (MAX_TRANSMISSION_UNIT)	Maximum packet size (in bytes)	ulong	No	--	--
Network Mask (NETWORK_MASK)	Subnet mask of the first IP address found (displayed in Internet address format)	string(20)	No	--	--
Network Name (NETWORK_NAME)	Network name. Network names larger than 1,027 bytes cannot be used. Also, if the network name is larger than 39 bytes, only the first 39 bytes are displayed. Under AIX, HP-UX and Linux, if NIS is operating and there are no entries in the NIS database for network addresses, a masking process is performed on the first IP address of the interface found and that result is displayed.	string(256)	No	--	--
Pkt Collisions (PACKET_COLLISIONS)	Number of packet collisions that occurred	ulong	Yes	--	--

Network Interface Detail (PI_NIND)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Pkt Receive Errors (PACKET_RECEIVE_ERRORS)	Number of errors during packet reception	ulong	Yes	--	--
Pkt Xmit Errors (PACKET_TRANSMIT_ERRORS)	Number of errors during packet transmission	ulong	Yes	--	--
Pkts Rcvd (PACKETS_RECEIVED)	Number of packets received	ulong	Yes	--	--
Pkts Rcvd/sec (PACKETS_RECEIVED_PER_SECOND)	Frequency at which packets were received (packets per second)	float	Yes	--	PACKETS_RECEIVED / INTERVAL
Pkts Xmitd (PACKETS_TRANSMITTED)	Number of packets transmitted	ulong	Yes	--	--
Pkts Xmitd/sec (PACKETS_TRANSMITTED_PER_SECOND)	Frequency at which packets were transmitted (packets per second)	float	Yes	--	PACKETS_TRANSMITTED / INTERVAL
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record type (always NIND)	char(8)	No	--	--
Total Pkt Errors (TOTAL_PACKET_ERRORS)	Number of errors that occurred during packet transmission and reception (including number of packet collisions)	ulong	Yes	--	PACKET_TRANSMIT_ERRORS + PACKET_RECEIVE_ERRORS + PACKET_COLLISIONS
Total Pkts (TOTAL_PACKETS)	Number of packets transmitted or received	ulong	Yes	--	PACKETS_RECEIVED + PACKETS_TRANSMITTED
Total Xmit Receive Errors (TOTAL_TRANS_RECEIVE_ERRORS)	Number of errors that occurred during packet transmission and reception (not including number of packet collisions)	ulong	Yes	--	PACKET_TRANSMIT_ERRORS + PACKET_RECEIVE_ERRORS
Type (INTERFACE_TYPE)	Interface type	string(20)	No	--	--

## 2.9.10 Network Interface Summary (PI\_NINS)

### Function

The Network Interface Summary (PI\_NINS) record stores performance data that summarizes information in the Network Interface Detail (PI\_NIND) records (at specific intervals).

The interfaces include the loopback, local token ring adapter, and Ethernet adapter interfaces. You can place multiple network interfaces on a single machine. Each interface has multiple IP addresses. Each time you collect performance data, one record is created for each network interface. However, only the first IP address found is used. Some of the performance data stored in this record is also stored in System Summary Overview (PI) records. Even without collecting Network Interface Detail (PI\_NIND) records, the collected performance data is stored in this record.

**Note:** Some performance data cannot be collected correctly if the LAN board system resource is changed during startup of a service of Agent for Platform by using the DR function of Solaris 8 or later. For details about changing system resources, see section 2.6.3.2.

Table 2.138 Network Interface Summary (PI\_NINS) Default and Changeable Values

Items	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	
Log	No	
LOGIF	(Blank)	

### Key Fields

None

### Lifetime

None

### Record Size

- Fixed part: 797 bytes
- Variable part: 0 bytes

Table 2.139 Network Interface Summary (PI\_NINS) Fields

Network Interface Summary (PI_NINS)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Interface Count (NUMBER_OF_INTERFACES)	Number of interfaces	ulong	No	--	Number of Network Interface Detail (PI_NIND) records summarized in the Network Interface Summary (PI_NINS) record
Interval (INTERVAL)	Interval (in seconds) for storing the Network Interface Summary (PI_NINS) record	ulong	Yes	--	<ul style="list-style-type: none"> <li>▪ For real-time reports: RECORD_TIME - <i>last-boot-time</i></li> <li>▪ For other reports: RECORD_TIME - <i>previous-record-time</i></li> </ul>
Pkt Collisions (PACKET_COLLISIONS)	Number of packet collisions that occurred	ulong	Yes	--	--
Pkt Receive Errors (PACKET_RECEIVE_ERRORS)	Number of errors during packet reception	ulong	Yes	--	--
Pkt Xmit Errors (PACKET_TRANSMIT_ERRORS)	Number of errors during packet transmission	ulong	Yes	--	--
Pkts Rcvd (TOTAL_PACKETS_RECEIVED)	Number of packets received	ulong	Yes	--	--
Pkts Rcvd/sec (PACKETS_RECEIVED_PER_SECOND)	Frequency at which packets were received (packets per second)	float	Yes	--	TOTAL_PACKETS_RECEIVED / INTERVAL
Pkts Xmitd (PACKETS_TRANSMITTED)	Number of packets transmitted	ulong	Yes	--	--
Pkts Xmitd/sec (PACKETS_TRANSMITTED_PER_SECOND)	Frequency at which packets were transmitted (packets per second)	float	Yes	--	PACKETS_TRANSMITTED / INTERVAL

Network Interface Summary (PI_NINS)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record type (always NINS)	char(8)	No	--	--

## 2.9.11 NFS Client Detail (PI\_NCD)

### Function

The NFS Client Detail (PI\_NCD) record stores performance data (detailed information), taken at specific intervals, about NFS client activity. The performance data stored in these records is the same as the data collected by the `nfsstat` command.

The end of each field name indicates the version number of the NFS performance data stored in that field.

**Note:** This record is not available in Solaris 10 and Linux.

Table 2.140 NFS Client Detail (PI\_NCD) Default and Changeable Values

Items	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	
Log	No	
LOGIF	(Blank)	

### Key Fields

None

### Lifetime

None

### Record Size

- Fixed part: 1,689 bytes
- Variable part: 0 bytes

Table 2.141 NFS Client Detail (PI\_NCD) Fields

NFS Client Detail (PI_NCD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Access Ops V3 (ACCESS_OPS_V3)	Number of times access processes occurred on the NFS client (Version 3.0)	ulong	Yes	Solaris 10, Linux	--

NFS Client Detail (PI_NCD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Commit Ops V3 (COMMIT_OPS_V3)	Number of times commit processes occurred on the NFS client (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Create Ops V2 (CREATE_OPS_V2)	Number of times create processes occurred on the NFS client (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Create Ops V3 (CREATE_OPS_V3)	Number of times create processes occurred on the NFS client (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Fsinfo V3 (FSINFO_V3)	Number of times fsinfo processes occurred on the NFS client (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Fsstat Ops V3 (FSSTAT_OPS_V3)	Number of times fsstat processes occurred on the NFS client (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Getattr Ops V2 (GETATTR_OPS_V2)	Number of times getattr processes occurred on the NFS client (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Getattr Ops V3 (GETATTR_OPS_V3)	Number of times getattr processes occurred on the NFS client (Version 3.0)	ulong	Yes	Solaris 10, Linux	--

NFS Client Detail (PI_NCD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Interval (INTERVAL)	Interval (in seconds) for storing the NFS Client Detail (PI_NCD) record	ulong	Yes	Solaris 10, Linux	<ul style="list-style-type: none"> <li>▪ For real-time reports: RECORD_TIME - <i>last-boot-time</i></li> <li>▪ For other reports: RECORD_TIME - <i>previous-record-time</i></li> </ul>
Link Ops V2 (LINK_OPS_V2)	Number of times link processes occurred on the NFS client (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Link Ops V3 (LINK_OPS_V3)	Number of times link processes occurred on the NFS client (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Lookup Ops V2 (LOOKUP_OPS_V2)	Number of times lookup processes occurred on the NFS client (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Lookup Ops V3 (LOOKUP_OPS_V3)	Number of times lookup processes occurred on the NFS client (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Mkdir Ops V2 (MKDIR_OPS_V2)	Number of times mkdir processes occurred on the NFS client (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Mkdir Ops V3 (MKDIR_OPS_V3)	Number of times mkdir processes occurred on the NFS client (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Mknod V3 (MKNOD_V3)	Number of times mknod processes occurred on the NFS client (Version 3.0)	ulong	Yes	Solaris 10, Linux	--

NFS Client Detail (PI_NCD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Null Ops V2 (NULL_OPS_V2)	Number of times null processes occurred on the NFS client (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Null Ops V3 (NULL_OPS_V3)	Number of times null processes occurred on the NFS client (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Pathconf V3 (PATHCONF_V3)	Number of times pathconf processes occurred on the NFS client (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
RPC Bad Calls V2 (RPC_BADCALLS_V2)	Number of bad connectionless type RPCs	ulong	Yes	Solaris 10, Linux	--
RPC Bad Calls V3 (RPC_BADCALLS_V3)	Number of bad connection type RPCs	ulong	Yes	HP-UX, Solaris 10, Linux	--
RPC Bad Verifier V2 (RPC_BADVERFS_V2)	Number of bad connectionless type RPCs due to invalid response verification	ulong	Yes	Solaris 10, Linux	--
RPC Bad Verifier V3 (RPC_BADVERFS_V3)	Number of bad connection type RPCs due to invalid response verification	ulong	Yes	HP-UX, Solaris 10, Linux	--
RPC Bad XID V2 (RPC_BADXID_V2)	Number of connectionless type RPC packets that received an invalid transaction ID	ulong	Yes	Solaris 10, Linux	--
RPC Bad XID V3 (RPC_BADXID_V3)	Number of connection type RPC packets that received an invalid transaction ID	ulong	Yes	HP-UX, Solaris 10, Linux	--
RPC Calls V2 (RPC_CALLS_V2)	Number of connectionless type RPCs	ulong	Yes	Solaris 10, Linux	--
RPC Calls V3 (RPC_CALLS_V3)	Number of connection type RPCs	ulong	Yes	HP-UX, Solaris 10, Linux	--

NFS Client Detail (PI_NCD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
RPC Can't Send V2 (RPC_CANTSEND_V2)	Number of bad connectionless type RPCs due to connection fault	ulong	Yes	Solaris 10, Linux	--
RPC Can't Send V3 (RPC_CANTCONN_V3)	Number of bad connection type RPCs due to connection fault	ulong	Yes	HP-UX, Solaris 10, Linux	--
RPC Interrupts V3 (RPC_INTERRUPTS_V3)	Number of connection type RPCs that failed due to an interrupt	ulong	Yes	HP-UX, Solaris 10, Linux	--
RPC NewCred V2 (RPC_NEWCRED_V2)	Number of authentication information updates due to connectionless type RPC propagation	ulong	Yes	Solaris 10, Linux	--
RPC NewCred V3 (RPC_NEWCRED_V3)	Number of authentication information updates due to connection type RPC propagation	ulong	Yes	HP-UX, Solaris 10, Linux	--
RPC No Mem V2 (RPC_NOMEM_V2)	Number of bad connectionless type RPCs due to memory fault	ulong	Yes	Solaris 10, Linux	--
RPC No Mem V3 (RPC_NOMEM_V3)	Number of bad connection type RPCs due to memory fault	ulong	Yes	HP-UX, Solaris 10, Linux	--
RPC Retrans V2 (RPC_RETRANS_V2)	Number of times a connectionless type RPC caused a retransmission	ulong	Yes	Solaris 10, Linux	--
RPC Timeout V2 (RPC_TIMEOUT_V2)	Number of connectionless type RPC packets not received within the monitoring interval	ulong	Yes	Solaris 10, Linux	--
RPC Timeout V3 (RPC_TIMEOUT_V3)	Number of connection type RPC packets not received within the monitoring interval	ulong	Yes	HP-UX, Solaris 10, Linux	--

NFS Client Detail (PI_NCD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
RPC Timers V2 (RPC_TIMERS_V2)	Number of times the timeout value calculated by connectionless type RPCs exceeded the specified minimum timeout value	ulong	Yes	Solaris 10, Linux	--
RPC Timers V3 (RPC_TIMERS_V3)	Number of times the timeout value calculated by connection type RPCs exceeded the specified minimum timeout value	ulong	Yes	HP-UX, Solaris 10, Linux	--
RPC Wait V2 (RPC_WAIT)	Number of connectionless type RPCs waiting for release of the handle	ulong	Yes	HP-UX, Solaris, Linux	--
Read Ops V2 (READ_OPS_V2)	Number of times read processes occurred on the NFS client (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Read Ops V3 (READ_OPS_V3)	Number of times read processes occurred on the NFS client (Version 3.0)	ulong	Yes	HP-UX, Solaris 10, Linux	--
Readdir Ops V2 (REaddir_OPS_V2)	Number of times readdir processes occurred on the NFS client (Version 2.0)	ulong	Yes	Solaris10, Linux	--
Readdir Ops V3 (REaddir_OPS_V3)	Number of times readdir processes occurred on the NFS client (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Readdirplus V3 (REaddirPLUS_V3)	Number of times readdirplus processes occurred on the NFS client (Version 3.0)	ulong	Yes	Solaris 10, Linux	--

NFS Client Detail (PI_NCD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Readlink Ops V2 (READLINK_OPS_V2)	Number of times readlink processes occurred on the NFS client (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Readlink Ops V3 (READLINK_OPS_V3)	Number of times readlink processes occurred on the NFS client (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	time_t	No	Solaris 10, Linux	--
Record Type (INPUT_RECORD_TYPE)	Record type (always NCD)	char(8)	No	Solaris 10, Linux	--
Remove Ops V2 (REMOVE_OPS_V2)	Number of times remove processes occurred on the NFS client (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Remove Ops V3 (REMOVE_OPS_V3)	Number of times remove processes occurred on the NFS client (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Rename Ops V2 (RENAME_OPS_V2)	Number of times rename processes occurred on the NFS client (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Rename Ops V3 (RENAME_OPS_V3)	Number of times rename processes occurred on the NFS client (Version 3.0)	ulong	Yes	HP-UX, Solaris 10, Linux	--
Rmdir Ops V2 (RMDIR_OPS_V2)	Number of times rmdir processes occurred on the NFS client (Version 2.0)	ulong	Yes	Solaris 10, Linux	--

NFS Client Detail (PI_NCD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Rmdir Ops V3 (RMDIR_OPS_V3)	Number of times <code>rmdir</code> processes occurred on the NFS client (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Root Ops V2 (ROOT_OPS_V2)	Number of times <code>root</code> processes occurred on the NFS client (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Setattr Ops V2 (SETATTR_OPS_V2)	Number of times <code>setattr</code> processes occurred on the NFS client (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Setattr Ops V3 (SETATTR_OPS_V3)	Number of times <code>setattr</code> processes occurred on the NFS client (Version 3.0)	ulong	Yes	HP-UX, Solaris 10, Linux	--
Statfs Ops V2 (STATFS_OPS_V2)	Number of times <code>statfs</code> processes occurred on the NFS client (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Symlink Ops V2 (SYMLINK_OPS_V2)	Number of times <code>symlink</code> processes occurred on the NFS client (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Symlink Ops V3 (SYMLINK_OPS_V3)	Number of times <code>symlink</code> processes occurred on the NFS client (Version 3.0)	ulong	Yes	Solaris 10, Linux	--

NFS Client Detail (PI_NCD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Total Ops V2 (TOTAL_OPS_V2)	Total number of processes that occurred on the NFS client (Version 2.0)	ulong	Yes	Solaris 10, Linux	READ_OPS_V2 + WRITE_OPS_V2 + LOOKUP_OPS_V 2 + STATFS_OPS_V 2 + NULL_OPS_V2 + GETATTR_OPS_ V2 + SETATTR_OPS_ V2 + ROOT_OPS_V2 + READLINK_OPS_ _V2 + WRITE_CACHE_ OPS_V2 + CREATE_OPS_V 2 + REMOVE_OPS_V 2 + RENAME_OPS_V 2 + LINK_OPS_V2 + SYMLINK_OPS_ V2 + MKDIR_OPS_V2 + RMDIR_OPS_V2 + REaddir_OPS_ V2

NFS Client Detail (PI_NCD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Total Ops V3 (TOTAL_OPS_V3)	Total number of processes that occurred on the NFS client (Version.3.0)	ulong	Yes	Solaris 10, Linux	READ_OPS_V3 + WRITE_OPS_V3 + LOOKUP_OPS_V3 + FSSTAT_OPS_V3 + NULL_OPS_V3 + GETATTR_OPS_V3 + SETATTR_OPS_V3 + READLINK_OPS_V3 + COMMIT_OPS_V3 + CREATE_OPS_V3 + REMOVE_OPS_V3 + RENAME_OPS_V3 + LINK_OPS_V3 + SYMLINK_OPS_V3 + MKDIR_OPS_V3 + RMDIR_OPS_V3 + REaddir_OPS_V3 + ACCESS_OPS_V3 + MKNOD_V3 + REaddirPLUS_V3 + FSINFO_V3 + PATHCONF_V3
Write Ops V2 (WRITE_OPS_V2)	Number of times write processes occurred on the NFS client (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Write Ops V3 (WRITE_OPS_V3)	Number of times write processes occurred on the NFS client (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Writecache Ops V2 (WRITE_CACHE_OPS_V2)	Number of times writecache processes occurred on the NFS client (Version 2.0)	ulong	Yes	Solaris 10, Linux	--

## 2.9.12 NFS Client Overview (PI\_NCO)

### Function

The NFS Client Overview (PI\_NCO) record stores performance data (overview information), taken at specific intervals, about NFS client activity. Some of the performance data stored in these records is also stored in System Summary Overview (PI) records.

The end of each field name indicates the version number of the performance data stored in that field.

The total value of the performance data of NFS Version 2 and NFS Version 3 is stored in value storage fields that do not include V2 or V3 in their field names. If the platform supports only one of either NFS Version 2 or NFS Version 3, the value for one of the versions is displayed. To check the version, see the end of the field view name, and the *description* column or *Not Supported* column, in the field table of the NFS Client Detail (PI\_NCD) records.

**Note:** This record is not available in Solaris 10 and Linux.

Table 2.142 NFS Client Overview (PI\_NCO) Default and Changeable Values

Items	Default Values	Changeable?
Collection Interval	60	Yes
Collection Offset	0	
Log	No	
LOGIF	(Blank)	

### Key Fields

None

### Lifetime

None

### Record Size

- Fixed part: 1,945 bytes
- Variable part: 0 bytes

Table 2.143 NFS Client Overview (PI\_NCO) Fields

NFS Client Overview (PI_NCO)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Access Ops V3 (ACCESS_OPS_V3)	Number of times access processes occurred on the NFS client (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Access Ops V3 % (ACCESS_OPS_V3_PERCENT)	Percentage (%) of all processes occurring on the NFS client (Version 3.0) that were access processes	float	No	Solaris 10, Linux	$(ACCESS\_OPS\_V3 / TOTAL\_OPS) * 100$
Avg Ops/sec (AVG_OPS_PER_SECOND)	Frequency at which processes occurred on the NFS client (times per second)	float	Yes	Solaris 10, Linux	$TOTAL\_OPS / INTERVAL$
Create Ops (CREATE_OPS)	Number of times create processes occurred on the NFS client	ulong	Yes	Solaris 10, Linux	--
Create Ops % (CREATE_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS client that were create processes	float	No	Solaris 10, Linux	$(CREATE\_OPS / TOTAL\_OPS) * 100$
Credential Ops (CREDENTIAL_OPS)	Number of processes occurring on the NFS client that queried and set up file properties	ulong	Yes	Solaris 10, Linux	$SYMLINK\_OPS + SETATTR\_OPS + GETATTR\_OPS$
Data-In Ops (DATA_IN_OPS)	Number of times data input processes occurred on the NFS client	ulong	Yes	Solaris 10, Linux	$READ\_OPS + REaddir\_OPS + READLINK\_OPS + REaddirPLUS\_V3$
Data-Out Ops (DATA_OUT_OPS)	Number of times data output processes occurred on the NFS client	ulong	Yes	Solaris 10, Linux	$WRITE\_OPS + REMOVE\_OPS + CREATE\_OPS + LINK\_OPS$

NFS Client Overview (PI_NCO)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Directory Ops (DIRECTORY_OPS)	Number of times directory processes occurred on the NFS client	ulong	Yes	Solaris 10, Linux	LOOKUP_OPS + MKDIR_OPS + RMDIR_OPS + RENAME_OPS + MKNOD_V3
Fsinfo V3 (FSINFO_V3)	Number of times fsinfo processes occurred on the NFS client	ulong	Yes	Solaris 10, Linux	--
Fsinfo V3 % (FSINFO_V3_PERCENT)	Percentage (%) of all processes occurring on the NFS client that were fsinfo processes	float	No	Solaris 10, Linux	(FSINFO_V3 / TOTAL_OPS) * 100
Getattr Ops (GETATTR_OPS)	Number of times getattr processes occurred on the NFS client	ulong	Yes	Solaris 10, Linux	--
Getattr Ops % (GETATTR_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS client that were getattr processes	float	No	Solaris 10, Linux	(GETATTR_OPS / TOTAL_OPS) * 100
Handles (TOTAL_HANDLE_GET)	Number of a client handles that were received	ulong	Yes	Solaris 10, Linux	--
Internal Ops (INTERNAL_OPS)	Number of times internal processes occurred on the NFS client	ulong	Yes	Solaris 10, Linux	WRITE_CACHE_O PS + ROOT_OPS_V2 + STATFS_OPS + NULL_OPS + TOTAL_SLEEP_ COUNT + ACCESS_OPS_V3 + FSINFO_V3 + PATHCONF_V3
Interval (INTERVAL)	Interval (in seconds) for storing the NFS Client Overview (PI_NCO) record	ulong	Yes	Solaris 10, Linux	<ul style="list-style-type: none"> <li>▪ For real-time reports:  RECORD_TIM E - <i>last-boot-time</i></li> <li>▪ For other reports:  RECORD_TIM E - <i>previous-record-time</i></li> </ul>

NFS Client Overview (PI_NCO)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Link Ops (LINK_OPS)	Number of times link processes occurred on the NFS client	ulong	Yes	Solaris 10, Linux	--
Link Ops % (LINK_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS client that were link processes	float	No	Solaris 10, Linux	$(LINK\_OPS / TOTAL\_OPS) * 100$
Lookup Ops (LOOKUP_OPS)	Number of times lookup processes occurred on the NFS client	ulong	Yes	Solaris 10, Linux	--
Lookup Ops % (LOOKUP_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS client that were lookup processes	float	No	Solaris 10, Linux	$(LOOKUP\_OPS / TOTAL\_OPS) * 100$
Mkdir Ops (MKDIR_OPS)	Number of times mkdir processes occurred on the NFS client	ulong	Yes	Solaris 10, Linux	--
Mkdir Ops % (MKDIR_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS client that were mkdir processes	float	No	Solaris 10, Linux	$(MKDIR\_OPS / TOTAL\_OPS) * 100$
Mknod V3 (MKNOD_V3)	Number of times mknod processes occurred on the NFS client (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Mknod V3 % (MKNOD_V3_PERCENT)	Percentage (%) of all processes occurring on the NFS client that were mknod processes	float	No	Solaris 10, Linux	$(MKNOD\_V3 / TOTAL\_OPS) * 100$
Null Ops (NULL_OPS)	Number of times null processes occurred on the NFS client	ulong	Yes	Solaris 10, Linux	--
Null Ops % (NULL_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS client that were null processes	float	No	Solaris 10, Linux	$(NULL\_OPS / TOTAL\_OPS) * 100$

NFS Client Overview (PI_NCO)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Pathconf V3 (PATHCONF_V3)	Number of times pathconf processes occurred on the NFS client (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Pathconf V3 % (PATHCONF_V3_PERCENT)	Percentage (%) of all processes occurring on the NFS client that were pathconf processes	float	No	Solaris 10, Linux	(PATHCONF_V3 / TOTAL_OPS) * 100
RPC Bad Call % (RPC_BADCALL_PERCENT)	Percentage (%) of failed RPCs	float	No	Solaris 10, Linux	(RPC_BADCALLS / RPC_CALLS) * 100
RPC Bad Calls (RPC_BADCALLS)	Number of bad RPCs	ulong	Yes	Solaris 10, Linux	--
RPC Bad Calls/sec (RPC_BADCALL_RATE)	Frequency at which bad RPCs occurred (times per second)	float	Yes	Solaris 10, Linux	RPC_BADCALLS / INTERVAL
RPC Bad Verifier (RPC_BADVERFS)	Number of RPCs that failed due to invalid response verification	ulong	Yes	Solaris 10, Linux	--
RPC Bad Verifier % (RPC_BADVERFS_PERCENT)	Percentage (%) of RPCs that failed due to invalid response verification	float	No	Solaris 10, Linux	(RPC_BADVERFS / RPC_CALLS) * 100
RPC Bad XID (RPC_BADXID)	Number of RPC packets that received an invalid transaction ID	ulong	Yes	Solaris 10, Linux	--
RPC Bad XID % (RPC_BADXID_PERCENT)	Percentage (%) of RPC packets that received an invalid transaction ID	float	No	Solaris 10, Linux	(RPC_BADXID / RPC_CALLS) * 100
RPC Calls (RPC_CALLS)	Number of RPCs that occurred	ulong	Yes	Solaris 10, Linux	--
RPC Calls/sec (RPC_CALL_RATE)	Frequency at which RPCs occurred (times per second)	float	Yes	Solaris 10, Linux	RPC_CALLS / INTERVAL
RPC Can't Send (RPC_CANTSEND)	Number of RPCs that failed due to a communication fault	ulong	Yes	Solaris 10, Linux	--

NFS Client Overview (PI_NCO)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
RPC Can't Send % (RPC_CANTSEND_PERCENT)	Percentage (%) of RPCs that failed due to a communication fault	float	No	Solaris 10, Linux	$(RPC\_CANTSEND / RPC\_CALLS) * 100$
RPC Interrupts V3 (RPC_INTERRUPTS_V3)	Number of connection type RPCs that failed due to an interrupt	ulong	Yes	HP-UX, Solaris 10, Linux	--
RPC Interrupts V3 % (RPC_INTERRUPTS_V3_PERCENT)	Percentage (%) of all RPCs that were connection type RPCs that failed due to an interrupt	float	No	HP-UX, Solaris 10, Linux	$(RPC\_INTERRUPTS\_V3 / RPC\_CALLS) * 100$
RPC NewCred (RPC_NEWCRED)	Number of times verification information was updated due to RPC propagation	ulong	Yes	Solaris 10, Linux	--
RPC No Mem (RPC_NOMEM)	Number of RPCs that failed due to a memory fault	ulong	Yes	Solaris 10, Linux	--
RPC No Mem % (RPC_NOMEM_PERCENT)	Percentage (%) of all RPCs that were RPCs that failed due to a memory fault	float	No	Solaris 10, Linux	$(RPC\_NOMEM / RPC\_CALLS) * 100$
RPC Retrans V2 (RPC_RETRANS_V2)	Number of times a connectionless type RPC caused a retransmission	ulong	Yes	Solaris 10, Linux	--
RPC Retrans V2 % (RPC_RETRANS_V2_PERCENT)	Percentage (%) of all RPCs that were connectionless type RPCs that caused a retransmission	float	No	Solaris 10, Linux	$(RPC\_RETRANS\_V2 / RPC\_CALLS) * 100$
RPC Timeout (RPC_TIMEOUT)	Number of RPC packets that did not receive a response within the monitor time period	ulong	Yes	Solaris 10, Linux	--
RPC Timeout % (RPC_TIMEOUT_PERCENT)	Percentage (%) of all RPCs that were RPC packets that did not receive a response within the monitor time period	float	No	Solaris 10, Linux	$(RPC\_TIMEOUT / RPC\_CALLS) * 100$

NFS Client Overview (PI_NCO)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
RPC Timers (RPC_TIMERS)	Number of RPCs for which the calculated timeout value exceeded the specified minimum timeout value	ulong	Yes	Solaris 10, Linux	--
RPC Wait (RPC_WAIT)	Number of RPCs waiting for release of the handle	ulong	Yes	All	--
RPC Wait % (RPC_WAIT_PERCENT)	Percentage (%) of all RPCs waiting for release of the handle	float	No	All	$(RPC\_WAIT / RPC\_CALLS) * 100$
Read Ops (READ_OPS)	Number of times read processes occurred on the NFS client	ulong	Yes	Solaris 10, Linux	--
Read Ops % (READ_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS client that were read processes	float	No	Solaris 10, Linux	$(READ\_OPS / TOTAL\_OPS) * 100$
Readdir Ops (READDIR_OPS)	Number of times <code>readdir</code> processes occurred on the NFS client	ulong	Yes	Solaris 10, Linux	--
Readdir Ops % (READDIR_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS client that were <code>readdir</code> processes	float	No	Solaris 10, Linux	$(READDIR\_OPS / TOTAL\_OPS) * 100$
Readdirplus V3 (READDIRPLUS_V3)	Number of times <code>readdirplus</code> processes occurred on the NFS client (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Readdirplus V3 % (READDIRPLUS_V3_PERCENT)	Percentage (%) of all processes occurring on the NFS client that were <code>readdirplus</code> processes	float	No	Solaris 10, Linux	$(READDIRPLUS\_V3 / TOTAL\_OPS) * 100$

NFS Client Overview (PI_NCO)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Readlink Ops (READLINK_OPS)	Number of times readlink processes occurred on the NFS client	ulong	Yes	Solaris 10, Linux	--
Readlink Ops % (READLINK_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS client that were readlink processes	float	No	Solaris 10, Linux	$(\text{READLINK\_OPS} / \text{TOTAL\_OPS}) * 100$
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	time_t	No	Solaris 10, Linux	--
Record Type (INPUT_RECORD_TYPE)	Record type (always NCO)	char(8)	No	Solaris 10, Linux	--
Remove Ops (REMOVE_OPS)	Number of times remove processes occurred on the NFS client	ulong	Yes	Solaris 10, Linux	--
Remove Ops % (REMOVE_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS client that were remove processes	float	No	Solaris 10, Linux	$(\text{REMOVE\_OPS} / \text{TOTAL\_OPS}) * 100$
Rename Ops (RENAME_OPS)	Number of times rename processes occurred on the NFS client	ulong	Yes	Solaris 10, Linux	--
Rename Ops % (RENAME_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS client that were rename processes	float	No	Solaris 10, Linux	$(\text{RENAME\_OPS} / \text{TOTAL\_OPS}) * 100$
Rmdir Ops (RMDIR_OPS)	Number of times rmdir processes occurred on the NFS client	ulong	Yes	Solaris 10, Linux	--
Rmdir Ops % (RMDIR_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS client that were rmdir processes	float	No	Solaris 10, Linux	$(\text{RMDIR\_OPS} / \text{TOTAL\_OPS}) * 100$

NFS Client Overview (PI_NCO)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Root Ops V2 (ROOT_OPS_V2)	Number of times root processes occurred on the NFS client (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Root Ops V2 % (ROOT_OPS_V2_PERCENT)	Percentage (%) of all processes occurring on the NFS client (Version 2.0) that were root processes	float	No	Solaris 10, Linux	$(\text{ROOT\_OPS\_V2} / \text{TOTAL\_OPS}) * 100$
Setattr Ops (SETATTR_OPS)	Number of times setattr processes occurred on the NFS client	ulong	Yes	Solaris 10, Linux	--
Setattr Ops % (SETATTR_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS client that were setattr processes	float	No	Solaris 10, Linux	$(\text{SETATTR\_OPS} / \text{TOTAL\_OPS}) * 100$
Statfs Ops (STATFS_OPS)	Number of times statfs processes occurred on the NFS client	ulong	Yes	Solaris 10, Linux	--
Statfs Ops % (STATFS_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS client that were statfs processes	float	No	Solaris 10, Linux	$(\text{STATFS\_OPS} / \text{TOTAL\_OPS}) * 100$
Symlink Ops (SYMLINK_OPS)	Number of times symlink processes occurred on the NFS client	ulong	Yes	Solaris 10, Linux	--
Symlink Ops % (SYMLINK_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS client that were symlink processes	float	No	Solaris 10, Linux	$(\text{SYMLINK\_OPS} / \text{TOTAL\_OPS}) * 100$
Total Bad Ops (TOTAL_BAD_OPS)	Total number of NFS client processes that failed	ulong	Yes	Solaris 10, Linux	--

NFS Client Overview (PI_NCO)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Total Ops (TOTAL_OPS)	Total number of processes that occurred on the NFS client	ulong	Yes	Solaris 10, Linux	--
Total Sleep Count (TOTAL_SLEEP_COUNT)	Number of times NFS client processes waited for release of a handle	ulong	Yes	Solaris 10, Linux	--
Write Ops (WRITE_OPS)	Number of times write processes occurred on the NFS client	ulong	Yes	Solaris 10, Linux	--
Write Ops % (WRITE_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS client that were write processes	float	No	Solaris 10, Linux	$(WRITE\_OPS / TOTAL\_OPS) * 100$
Writecache Ops (WRITE_CACHE_OPS)	Number of times writecache processes occurred on the NFS client	ulong	Yes	Solaris 10, Linux	--
Writecache Ops % (WRITE_CACHE_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS client that were writecache processes	float	No	Solaris 10, Linux	$(WRITE\_CACHE\_OPS / TOTAL\_OPS) * 100$

## 2.9.13 NFS Server Detail (PI\_NSD)

### Function

The NFS Server Detail (PI\_NSD) record stores performance data (detailed information), taken at specific intervals, about NFS server activity. The performance data this record stores is the same as the data collected by the `nfsstat` command.

Fields whose name includes `v2` or `v3` store the NFS performance data of the version that applies to that name.

**Note:** This record is not available in Solaris 10 and Linux.

Table 2.144 NFS Server Detail (PI\_NSD) Default and Changeable Values

Items	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	
Log	No	
LOGIF	(Blank)	

### Key Fields

None

### Lifetime

None

### Record Size

- Fixed part: 1,577 bytes
- Variable part: 0 bytes

Table 2.145 NFS Server Detail (PI\_NSD) Fields

NFS Server Detail (PI_NSD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Access Ops V3 (ACCESS_OPS_V3)	Number of times access processes occurred on the NFS server (Version 3.0)	ulong	Yes	Solaris 10, Linux	--

NFS Server Detail (PI_NSD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Commit Ops V3 (COMMIT_OPS_V3)	Number of times commit processes occurred on the NFS server (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Create Ops V2 (CREATE_OPS_V2)	Number of times create processes occurred on the NFS server (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Create Ops V3 (CREATE_OPS_V3)	Number of times create processes occurred on the NFS server (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Fsinfo Ops V3 (FSINFO_OPS_V3)	Number of times fsinfo processes occurred on the NFS server (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Fsstat Ops V3 (FSSTAT_OPS_V3)	Number of times fsstat processes occurred on the NFS server (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Getattr Ops V2 (GETATTR_OPS_V2)	Number of times getattr processes occurred on the NFS server (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Getattr Ops V3 (GETATTR_OPS_V3)	Number of times getattr processes occurred on the NFS server (Version 3.0)	ulong	Yes	Solaris 10, Linux	--

NFS Server Detail (PI_NSD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Interval (INTERVAL)	Interval (in seconds) for storing the NFS Server Detail (PI_NSD) record	ulong	Yes	Solaris 10, Linux	<ul style="list-style-type: none"> <li>▪ For real-time reports: RECORD_TIME - <i>last-boot-time</i></li> <li>▪ For other reports: RECORD_TIME - <i>previous-record-time</i></li> </ul>
Link Ops V2 (LINK_OPS_V2)	Number of times link processes occurred on the NFS server (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Link Ops V3 (LINK_OPS_V3)	Number of times link processes occurred on the NFS server (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Lookup Ops V2 (LOOKUP_OPS_V2)	Number of times lookup processes occurred on the NFS server (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Lookup Ops V3 (LOOKUP_OPS_V3)	Number of times lookup processes occurred on the NFS server (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Mkdir Ops V2 (MKDIR_OPS_V2)	Number of times mkdir processes occurred on the NFS server (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Mkdir Ops V3 (MKDIR_OPS_V3)	Number of times mkdir processes occurred on the NFS server (Version 3.0)	ulong	Yes	Solaris 10, Linux	--

NFS Server Detail (PI_NSD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Mknod Ops V3 (MKNOD_OPS_V3)	Number of times mknod process occurred on the NFS server (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Null Ops V2 (NULL_OPS_V2)	Number of times null processes occurred on the NFS server (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Null Ops V3 (NULL_OPS_V3)	Number of times null processes occurred on the NFS server (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Pathconf Ops V3 (PATHCONF_OPS_V3)	Number of times pathconf processes occurred on the NFS server (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
RPC Bad Calls V2 (RPC_BADCALLS_V2)	Number of bad connectionless type RPCs	ulong	Yes	Solaris 10, Linux	--
RPC Bad Calls V3 (RPC_BADCALLS_V3)	Number of bad connection type RPCs	ulong	Yes	HP-UX, Solaris 10, Linux	--
RPC Bad Format V2 (RPC_XDRCALL_V2)	Number of connectionless type RPC packets received in an illegal format	ulong	Yes	Solaris 10, Linux	--
RPC Bad Format V3 (RPC_XDRCALL_V3)	Number of connection type RPC packets received in an illegal format	ulong	Yes	HP-UX, Solaris 10, AIX, Linux	--
RPC Bad Length V2 (RPC_BADLEN_V2)	Number of invalid connectionless type RPC packets received due to illegal size	ulong	Yes	Solaris 10, Linux	--
RPC Bad Length V3 (RPC_BADLEN_V3)	Number of invalid connection type RPC packets received due to illegal size	ulong	Yes	HP-UX, Solaris 10, Linux	--

NFS Server Detail (PI_NSD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
RPC Calls V2 (RPC_CALLS_V2)	Number of connectionless type RPCs	ulong	Yes	Solaris 10, Linux	--
RPC Calls V3 (RPC_CALLS_V3)	Number of connection type RPCs	ulong	Yes	HP-UX, Solaris 10, Linux	--
RPC Dup Checks V2 (RPC_DUPCHECKS_V2)	Number of connectionless type RPCs searched by duplicate request cache	ulong	Yes	Solaris 10, Linux	--
RPC Dup Checks V3 (RPC_DUPCHECKS_V3)	Number of connection type RPCs searched by duplicate request cache	ulong	Yes	HP-UX, Solaris 10, Linux	--
RPC Dup Reqs V2 (RPC_DUPREQS_V2)	Number of duplicate connectionless type RPCs found	ulong	Yes	Solaris 10, Linux	--
RPC Dup Reqs V3 (RPC_DUPREQS_V3)	Number of duplicate connection type RPCs found	ulong	Yes	HP-UX, Solaris 10, Linux	--
RPC Null Receive V2 (RPC_NULLRECV_V2)	Number of null connectionless type RPC packets received	ulong	Yes	Solaris 10, Linux	--
RPC Null Receive V3 (RPC_NULLRECV_V3)	Number of null connection type RPC packets received	ulong	Yes	HP-UX, Solaris 10, Linux	--
Read Ops V2 (READ_OPS_V2)	Number of times read processes occurred on the NFS server (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Read Ops V3 (READ_OPS_V3)	Number of times read processes occurred on the NFS server (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Readdir Ops V2 (READDIR_OPS_V2)	Number of times readdir processes occurred on the NFS server (Version 2.0)	ulong	Yes	Solaris 10, Linux	--

NFS Server Detail (PI_NSD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Readdir Ops V3 (READDIR_OPS_V3)	Number of times readdir processes occurred on the NFS server (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Readdirplus Ops V3 % (READDIRPLUS_OPS_V3)	Number of times readdirplus processes occurred on the NFS server (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Readlink Ops V2 (READLINK_OPS_V2)	Number of times readlink processes occurred on the NFS server (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Readlink Ops V3 (READLINK_OPS_V3)	Number of times readlink processes occurred on the NFS server (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	time_t	No	Solaris 10, Linux	<ul style="list-style-type: none"> <li>▪ For real-time reports: RECORD_TIME - <i>last-boot-time</i></li> <li>▪ For other reports: RECORD_TIME - <i>previous-record-time</i></li> </ul>
Record Type (INPUT_RECORD_TYPE)	Record type (always NSD)	char (8)	No	Solaris 10, Linux	--
Remove Ops V2 (REMOVE_OPS_V2)	Number of times remove processes occurred on the NFS server (Version 2.0)	ulong	Yes	Solaris 10, Linux	--

NFS Server Detail (PI_NSD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Remove Ops V3 (REMOVE_OPS_V3)	Number of times remove processes occurred on the NFS server (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Rename Ops V2 (RENAME_OPS_V2)	Number of times rename processes occurred on the NFS server (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Rename Ops V3 (RENAME_OPS_V3)	Number of times rename processes occurred on the NFS server (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Rmdir Ops V2 (RMDIR_OPS_V2)	Number of times rmdir processes occurred on the NFS server (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Rmdir Ops V3 (RMDIR_OPS_V3)	Number of times rmdir processes occurred on the NFS server (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Root Ops V2 (ROOT_OPS_V2)	Number of times root processes occurred on the NFS server (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Setattr Ops V2 (SETATTR_OPS_V2)	Number of times setattr processes occurred on the NFS server (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Setattr Ops V3 (SETATTR_OPS_V3)	Number of times setattr processes occurred on the NFS server (Version 3.0)	ulong	Yes	Solaris 10, Linux	--

NFS Server Detail (PI_NSD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Statfs Ops V2 (STATFS_OPS_V2)	Number of times statfs processes occurred on the NFS server (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Symlink Ops V2 (SYMLINK_OPS_V2)	Number of times symlink processes occurred on the NFS server (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Symlink Ops V3 (SYMLINK_OPS_V3)	Number of times symlink processes occurred on the NFS server (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Total Ops V2 (TOTAL_OPS_V2)	Total number of processes that occurred on the NFS server (Version 2.0)	ulong	Yes	Solaris 10, Linux	READ_OPS_V2 + WRITE_OPS_V2 + LOOKUP_OPS_V2 + STATFS_OPS_V2 + NULL_OPS_V2 + GETATTR_OPS_V2 + SETATTR_OPS_V2 + READLINK_OPS_V2 + WRITE_CACHE_OPS_V2 + CREATE_OPS_V2 + ROOT_OPS_V2 + REMOVE_OPS_V2 + RENAME_OPS_V2 + LINK_OPS_V2 + SYMLINK_OPS_V2 + MKDIR_OPS_V2 + RMDIR_OPS_V2 + READDIR_OPS_V2

NFS Server Detail (PI_NSD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Total Ops V3 (TOTAL_OPS_V3)	Total number of processes that occurred on the NFS server (Version 3.0)	ulong	Yes	Solaris 10, Linux	READ_OPS_V3 + WRITE_OPS_V3 + LOOKUP_OPS_V3 + FSSTAT_OPS_V3 + NULL_OPS_V3 + GETATTR_OPS_V3 + SETATTR_OPS_V3 + READLINK_OPS_V3 + COMMIT_OPS_V3 + CREATE_OPS_V3 + REMOVE_OPS_V3 + RENAME_OPS_V3 + LINK_OPS_V3 + SYMLINK_OPS_V3 + MKDIR_OPS_V3 + RMDIR_OPS_V3 + REaddir_OPS_V3 + ACCESS_OPS_V3 + MKNOD_V3 + REaddirPLU_S_V3 + FSINFO_V3 + PATHCONF_V3
Write Ops V2 (WRITE_OPS_V2)	Number of times write processes occurred on the NFS server (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Write Ops V3 (WRITE_OPS_V3)	Number of times write processes occurred on the NFS server (Version 3.0)	ulong	Yes	Solaris 10, Linux	--

NFS Server Detail (PI_NSD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Writecache Ops V2 (WRITE_CACHE_OPS_V2)	Number of times writecache processes occurred on the NFS server (Version 2.0)	ulong	Yes	Solaris 10, Linux	--

## 2.9.14 NFS Server Overview (PI\_NSO)

### Function

The NFS Server Overview (PI\_NSO) record stores performance data (overview information), taken at specific intervals, about NFS server activity. Some of the performance data these records store is also stored in System Summary Overview (PI) records.

Fields whose names include v2 or v3 store the NFS performance data of the correct version for that name.

The total value of the performance data of NFS Version 2 and NFS Version 3 is stored in value storage fields that do not include V2 or V3 in their field names. If the platform supports only one of either NFS Version 2 or NFS Version 3, the value for one of the versions is displayed. To check the version, see the end of the field view name, and the *description* column or *Not Supported* column in the field table of the NFS Server Detail (PI\_NSD) records.

**Note:** This record is not available in Solaris 10 and Linux.

Table 2.146 NFS Server Overview (PI\_NSO) Default and Changeable Values

Items	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	
Log	No	
LOGIF	(Blank)	

### Key Fields

None

### Lifetime

None

### Record Size

- Fixed part: 1,737 bytes
- Variable part: 0 bytes

Table 2.147 NFS Server Overview (PI\_NSO) Fields

NFS Server Overview (PI_NSO)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Access Ops V3 (ACCESS_OPS_V3)	Number of times access processes occurred on the NFS server (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Access Ops V3 % (ACCESS_OPS_V3_PERCENT)	Percentage (%) of all processes occurring on the NFS server (Version 3.0) that were access processes	float	No	Solaris 10, Linux	(ACCESS_OPS_V3 / TOTAL_OPS) * 100
Avg Ops/sec (AVG_OPS_PER_SECOND)	Frequency at which processes occurred on the NFS server (times per second)	float	Yes	Solaris 10, Linux	TOTAL_OPS / INTERVAL
Create Ops (CREATE_OPS)	Number of times create processes occurred on the NFS server	ulong	Yes	Solaris 10, Linux	--
Create Ops % (CREATE_OPS_PERCENT)	Percentage (%) of all processes that occurred on the NFS server that were create processes	float	No	Solaris 10, Linux	(CREATE_OPS / TOTAL_OPS) * 100
Credential Ops (CREDENTIAL_OPS)	Number of times processes to query and set up file properties occurred on the NFS server	ulong	Yes	Solaris 10, Linux	SYMLINK_OPS + SETATTR_OPS + GETATTR_OPS
Data-In Ops (DATA_IN_OPS)	Number of times data input processes occurred on the NFS server	ulong	Yes	Solaris 10, Linux	WRITE_OPS + REMOVE_OPS + CREATE_OPS + LINK_OPS
Data-Out Ops (DATA_OUT_OPS)	Number of times data output processes occurred on the NFS server	ulong	Yes	Solaris 10, Linux	READ_OPS + REaddir_OPS + READLINK_OPS + REaddirPLUS_OPS_V3 + FSINFO_OPS_V3
Directory Ops (DIRECTORY_OPS)	Number of times directory operations occurred on the NFS server, from among all processes that occurred on the NFS server	ulong	Yes	Solaris 10, Linux	LOOKUP_OPS + MKDIR_OPS + RMDIR_OPS + RENAME_OPS + MKNOD_OPS_V3

NFS Server Overview (PI_NSO)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Fsinfo Ops V3 (FSINFO_OPS_V3)	Number of times <code>fsinfo</code> processes occurred on the NFS server (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Fsinfo Ops V3 % (FSINFO_OPS_V3_PERCENT)	Percentage (%) of all processes occurring on the NFS server (Version 3.0) that were <code>fsinfo</code> processes	float	No	Solaris 10, Linux	(FSINFO_OPS_V3 / TOTAL_OPS) * 100
Getattr Ops (GETATTR_OPS)	Number of times <code>getattr</code> processes occurred on the NFS server	ulong	Yes	Solaris 10, Linux	--
Getattr Ops % (GETATTR_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS server that were <code>getattr</code> processes	float	No	Solaris 10, Linux	(GETATTR_OPS / TOTAL_OPS) * 100
Internal Ops (INTERNAL_OPS)	Number of times internal processes occurred on the NFS server	ulong	Yes	Solaris 10, Linux	WRITE_CACHE_OPS + ROOT_OPS_V2 + STATFS_OPS + NULL_OPS + ACCESS_OPS_V3 + PATHCONF_OPS_V3
Interval (INTERVAL)	Interval (in seconds) for storing the NFS Server Overview (PI_NSO) record	ulong	Yes	Solaris 10, Linux	<ul style="list-style-type: none"> <li>▪ For real-time reports: RECORD_TIME - <i>last-boot-time</i></li> <li>▪ For other reports: RECORD_TIME - <i>previous-record-time</i></li> </ul>
Link Ops (LINK_OPS)	Number of times <code>link</code> processes occurred on the NFS server	ulong	Yes	Solaris 10, Linux	--
Link Ops % (LINK_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS server that were <code>link</code> processes	float	No	Solaris 10, Linux	(LINK_OPS / TOTAL_OPS) * 100
Lookup Ops (LOOKUP_OPS)	Number of times <code>lookup</code> processes occurred on the NFS server	ulong	Yes	Solaris 10, Linux	--

NFS Server Overview (PI_NSO)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Lookup Ops % (LOOKUP_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS server that were lookup processes	float	No	Solaris 10, Linux	$(\text{LOOKUP\_OPS} / \text{TOTAL\_OPS}) * 100$
Mkdir Ops (MKDIR_OPS)	Number of times mkdir processes occurred on the NFS server	ulong	Yes	Solaris 10, Linux	--
Mkdir Ops % (MKDIR_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS server that were mkdir processes	float	No	Solaris 10, Linux	$(\text{MKDIR\_OPS} / \text{TOTAL\_OPS}) * 100$
Mknod Ops V3 (MKNOD_OPS_V3)	Number of times mknod processes occurred on the NFS server (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Mknod Ops V3 % (MKNOD_OPS_V3_PERCENT)	Percentage (%) of all processes occurring on the NFS server that were mknod processes	float	No	Solaris 10, Linux	$(\text{MKNOD\_OPS\_V3} / \text{TOTAL\_OPS}) * 100$
Null Ops (NULL_OPS)	Number of times null processes occurred on the NFS server	ulong	Yes	Solaris 10, Linux	--
Null Ops % (NULL_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS server that were null processes	float	No	Solaris 10, Linux	$(\text{NULL\_OPS} / \text{TOTAL\_OPS}) * 100$
Pathconf Ops V3 (PATHCONF_OPS_V3)	Number of times pathconf processes occurred on the NFS server (Version 3.0)	ulong	Yes	Solaris 10, Linux	--
Pathconf Ops V3 % (PATHCONF_OPS_V3_PERCENT)	Percentage (%) of all processes occurring on the NFS server (Version 3.0) that were pathconf processes	float	No	Solaris 10, Linux	$(\text{PATHCONF\_OPS\_V3} / \text{TOTAL\_OPS}) * 100$
RPC Bad Call % (RPC_BADCALL_PERCENT)	Percentage (%) of failed RPCs	float	No	Solaris 10, Linux	$(\text{RPC\_BADCALLS} / \text{RPC\_CALLS}) * 100$
RPC Bad Calls (RPC_BADCALLS)	Number of bad RPCs	ulong	Yes	Solaris 10, Linux	--
RPC Bad Calls/sec (RPC_BADCALL_RATE)	Frequency at which bad RPCs occurred (times per second)	float	Yes	Solaris 10, Linux	$\text{RPC\_BADCALLS} / \text{INTERVAL}$

NFS Server Overview (PI_NSO)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
RPC Bad Format (RPC_XDRCALL)	Number of RPC packets received in an illegal format	ulong	Yes	Solaris 10, Linux	--
RPC Bad Length (RPC_BADLEN)	Number of RPC packets received that became invalid due to insufficient size	ulong	Yes	Solaris 10, Linux	--
RPC Calls (RPC_CALLS)	Number of RPCs that occurred	ulong	Yes	Solaris 10, Linux	--
RPC Calls/sec (RPC_CALL_RATE)	Frequency at which RPCs occurred (times per second)	float	Yes	Solaris 10, Linux	RPC_CALLS / INTERVAL
RPC Dup Checks (RPC_DUPCHECKS)	Number of RPCs searched by duplicate request cache	ulong	Yes	Solaris 10, Linux	--
RPC Dup Reqs (RPC_DUPREQS)	Number of duplicate RPCs found in RPCs searched by duplicate request cache	ulong	Yes	Solaris 10, Linux	--
RPC Dup Reqs % (RPC_DUPREQS_PERCENT)	Percentage (%) of duplicate RPCs found in RPCs searched by duplicate request cache	float	No	Solaris 10, Linux	(RPC_DUPREQS / RPC_DUPCHECKS) * 100
RPC NFS Queue (RPC_NFSDRUN)	Number of <code>nfsd</code> daemons used by RPC request processes	ulong	Yes	All	--
RPC Null Receive (RPC_NULLRECV)	Number of null RPC packets received	ulong	Yes	Solaris 10, Linux	--
Read Ops (READ_OPS)	Number of times read processes occurred on the NFS server	ulong	Yes	Solaris 10, Linux	--
Read Ops % (READ_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS server that were read processes	float	No	Solaris 10, Linux	(READ_OPS / TOTAL_OPS) * 100
Readdir Ops (READDIR_OPS)	Number of times <code>readdir</code> processes occurred on the NFS server	ulong	Yes	Solaris 10, Linux	--
Readdir Ops % (READDIR_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS server that were <code>readdir</code> processes	float	No	Solaris 10, Linux	(READDIR_OPS / TOTAL_OPS) * 100

NFS Server Overview (PI_NSO)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Readdirplus Ops V3 (READDIRPLUS_OPS_V3)	Number of times readdirplus processes occurred on the NFS server	ulong	Yes	Solaris 10, Linux	--
Readdirplus Ops V3 % (READDIRPLUS_OPS_V3_PERCENT)	Percentage (%) of all processes occurring on the NFS server that were readdirplus processes	float	No	Solaris 10, Linux	(READDIRPLUS_OPS_V3 / TOTAL_OPS) * 100
Readlink Ops (READLINK_OPS)	Number of times readlink processes occurred on the NFS server	ulong	Yes	Solaris 10, Linux	--
Readlink Ops % (READLINK_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS server that were readlink processes	float	No	Solaris 10, Linux	(READLINK_OPS / TOTAL_OPS) * 100
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	time_t	No	Solaris 10, Linux	--
Record Type (INPUT_RECORD_TYPE)	Record type (always NSO)	char(8)	No	Solaris 10, Linux	--
Remove Ops (REMOVE_OPS)	Number of times remove processes occurred on the NFS server	ulong	Yes	Solaris 10, Linux	--
Remove Ops % (REMOVE_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS server that were remove processes	float	No	Solaris 10, Linux	(REMOVE_OPS / TOTAL_OPS) * 100
Rename Ops (RENAME_OPS)	Number of times rename processes occurred on the NFS server	ulong	Yes	Solaris 10, Linux	--
Rename Ops % (RENAME_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS server that were rename processes	float	No	Solaris 10, Linux	(RENAME_OPS / TOTAL_OPS) * 100
Rmdir Ops (RMDIR_OPS)	Number of times rmdir processes occurred on the NFS server	ulong	Yes	Solaris 10, Linux	--
Rmdir Ops % (RMDIR_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS server that were rmdir processes	float	No	Solaris 10, Linux	(RMDIR_OPS / TOTAL_OPS) * 100

NFS Server Overview (PI_NSO)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Root Ops V2 (ROOT_OPS_V2)	Number of times <code>root</code> processes occurred on the NFS server (Version 2.0)	ulong	Yes	Solaris 10, Linux	--
Root Ops V2 % (ROOT_OPS_V2_PERCENT)	Percentage (%) of all processes occurring on the NFS server (Version 2.0) that were <code>root</code> processes	float	No	Solaris 10, Linux	$(\text{ROOT\_OPS\_V2} / \text{TOTAL\_OPS}) * 100$
Setattr Ops (SETATTR_OPS)	Number of times <code>setattr</code> processes occurred on the NFS server	ulong	Yes	Solaris 10, Linux	--
Setattr Ops % (SETATTR_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS server that were <code>setattr</code> processes	float	No	Solaris 10, Linux	$(\text{SETATTR\_OPS} / \text{TOTAL\_OPS}) * 100$
Staffs Ops (STATFS_OPS)	Number of times <code>statfs</code> processes occurred on the NFS server	ulong	Yes	Solaris 10, Linux	--
Staffs Ops % (STATFS_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS server that were <code>statfs</code> processes	float	No	Solaris 10, Linux	$(\text{STATFS\_OPS} / \text{TOTAL\_OPS}) * 100$
Symlink Ops (SYMLINK_OPS)	Number of times <code>symlink</code> processes occurred on the NFS server	ulong	Yes	Solaris 10, Linux	--
Symlink Ops % (SYMLINK_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS server that were <code>symlink</code> processes	float	No	Solaris 10, Linux	$(\text{SYMLINK\_OPS} / \text{TOTAL\_OPS}) * 100$
Total Bad Ops (TOTAL_BAD_OPS)	Total number of bad processes that occurred on the NFS server	ulong	Yes	Solaris 10, Linux	--
Total Ops (TOTAL_OPS)	Total number of processes that occurred on the NFS server	ulong	Yes	Solaris 10, Linux	--
Write Ops (WRITE_OPS)	Number of times <code>write</code> processes occurred on the NFS server	ulong	Yes	Solaris 10, Linux	--
Write Ops % (WRITE_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS server that were <code>write</code> processes	float	No	Solaris 10, Linux	$(\text{WRITE\_OPS} / \text{TOTAL\_OPS}) * 100$

NFS Server Overview (PI_NSO)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Writecache Ops (WRITE_CACHE_OPS)	Number of times writecache processes occurred on the NFS server	ulong	Yes	Solaris 10, Linux	--
Writecache Ops % (WRITE_CACHE_OPS_PERCENT)	Percentage (%) of all processes occurring on the NFS server that were writecache processes	float	No	Solaris 10, Linux	(WRITE_CACHE_OPS / TOTAL_OPS) * 100

## 2.9.15 Process Detail (PD)

### Function

The Process Detail (PD) record stores performance data indicating the status (at a specific point in time) of a process. One record is created for each process ID in the system.

The performance data stored in this record is the same as the data stored in the Process Detail Interval (PD\_PDI) record. If two sets of performance data collected in succession are for the same process, the system stores both sets in the same record, and overwrites the value in the database. This differentiates this record from the Process Detail Interval (PD\_PDI) record. However, if performance data has been collected and the process terminates during the subsequent collection of performance data, the performance data of the subsequent process is not collected. Performance data for a process that is currently not executing is also not collected.

If you collect this record in real time, performance data on all processes being executed in the system is stored. This is a multi-instance record.

### Notes:

- If the process does not have a terminal name, ?? is displayed in the **Terminal** (TERMINAL\_NAME) field.
- If the target process for the instance is a zombie process, in Solaris the following fields are set to 0, and in AIX and HP-UX the following fields are set to -3.  
User, User ID, Real User, Real User ID, Group, GroupID, Real Group, Real Group ID
- In AIX and Solaris, only the field data listed below is collected for <defunct> processes (for other fields, 0 or n/a is displayed):  
Accounting Flags, Argument List, Exit Status, Flags, Group, Group ID, Parent PID, Parent Process List, PID, Process Group ID, Program, Program/PID, Real Group, Real Group ID, Real User, Real User ID, Record Time, Record Type, Scheduler Class, Terminal, User, User ID
- The Priority (PRIORITY) field of this record indicates process priority. In Solaris, the priority level indicated by larger numbers is higher than indicated by smaller numbers. In AIX and Linux, the priority level indicated by smaller numbers is higher than that which is indicated by larger numbers. In HP-UX, the settings of each process determine whether the priority level indicated by larger numbers is higher than indicated by smaller numbers. Use the following command to confirm the settings of each process:  

```
export UNIX95=1  
ps -eo pid,cls,pri
```

If 'cls' is FIFO, RR, or RR2, the priority level indicated by smaller numbers is higher than indicated by larger numbers.

If 'cls' is HP-UX or RT, the priority level indicated by larger numbers is higher than indicated by smaller numbers.

- The list of process flags set in the Flags (FLAGS) field allows you to determine the following flags:
  - HP-UX:
    - SLOAD, SSYS, SLOCK, STRC, SWTED\_PARENT, SDEACTSELF, SOMASK, SWEXIT, SVFORK, SSEQL, SUANOM, SOUSIG, SOWEUPC, SSEL, SWANTS\_ALLCPU, SSERIAL, SFAULTING, SDEACT, SWAITIO, STRAPPING, SWTED\_DEBUGGER
  - Solaris 8
    - SSYS, STRC, SSCONT, SLOAD, SLOCK, SPREXEC, SPROCTR, SPRFORK, SKILLED, SLOAD, SRUNLCL, SBPTADJ, SKILLCL, SOWEUPC, SEXECED, SPASYNC, SJCTL, SNOWAIT, SVFORK, EXITLWPS, SWAITSIG, COREDUMP, SMSACCT, ASLWP
  - Solaris 9
    - SSYS, STRC, SITBUSY, SLOAD, SLOCK, SPREXEC, SPROCTR, SPRFORK, SKILLED, SSCONT, SRUNLCL, SBPTADJ, SKILLCL, SUGID, SEXECED, SPASYNC, SJCTL, SNOWAIT, SVFORK, EXITLWPS, SWAITSIG, COREDUMP, SMSACCT, ASLWP
  - Solaris 10
    - SSYS, SITBUSY, SWATCHOK, SKILLED, SSCONT, SZONETOP, SEXTKILLED, SUGID, SEXECED, SJCTL, SNOWAIT, SVFORK, SEXITLWPS, SCOREDUMP, SMSACCT, SLWPWRAP
  - AIX:
    - SLOAD, SNOSWAP, SFORKSTACK, STRC, SFIXPRI, SKPROC, SSIGNOCHLD, SSIGSET, SLKDONE, STRACING, SMPTRACE, SEXIT, SORPHANPGRP, SNOCNTLPROC, SPPNOCLDSTOP, SEXECED, SJOBSESS, SJOBOFF, SEXECING, SPSEARLYALLOC
- When micro-partitioning is used in AIX 5L V5.3, records are created for each logically partitioned processor. For information about the records and fields affected by micro-partitioning, see section 2.6.3.3.
- Performance data about a terminated process cannot be collected.

Table 2.148 Process Detail (PD) Default and Changeable Values

Items	Default value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	
Log	No	
LOGIF	(Blank)	

### Key Fields

- Start Time (START\_TIME)
- PID (PID)

### Lifetime

From when the process is executed until it ends

### Record Size

- Fixed part: 681 bytes
- Variable part: 1,802 bytes

Table 2.149 Process Detail (PD) Fields

Process Detail (PD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Accounting Flags (ACCOUNTING_FLAGS)	Operation history information for the process. This data is valid only when the process has terminated (when End Time does not show n/a).	string(256)	No	All	--
Argument List (ARGUMENT_LIST)	Process arguments. The character strings listed in the COMMAND column of the information displayed by the ps -ef command.  In HP-UX, the length is limited to 63 bytes. In Solaris, the length is limited to 79 bytes.	string(120)	No	--	--
Avg I/O Kbytes (AVG_IO_KBYTES)	Average transfer size (in kilobytes) of I/O processing	float	No	HP-UX, AIX, Linux	TOTAL_IO_KBYTES / TOTAL_IO_OPS

Process Detail (PD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
CPU % Each (CPU_PERCENT_EACH)	CPU usage rate (%) of a processor	float	No	--	$((USER\_CPU\_TIME + SYSTEM\_CPU\_TIME) / ELAPSED\_TIME) * 100$
CPU Limit (CPU_LIMIT)	CPU size limit for a process (value defined by the RLIMIT_CPU parameter of the setrlimit system call)	double	No	HP-UX, Solaris 9, Linux	--
Child Process List (CHILD_PROCESS_LIST)	List of created child processes (the space character separates child processes)  If this value consists of 128 or more characters, the last character is >.	string(128)	No	--	Use list of processes to search a child chain.
Context Switches (CONTEXT_SWITCHES)	Number of times context switch was executed	ulong	Yes	HP-UX, Linux	--
Core Size Limit (CORE_SIZE_LIMIT)	Maximum size (in bytes) of a core file that can be created by a process (value defined by the RLIMIT_CORE parameter of the setrlimit system call)	double	No	HP-UX, Solaris 9, Linux	--
Data Size Limit (DATA_SIZE_LIMIT)	Data size limit (in bytes) for a process (value defined by the RLIMIT_DATA parameter of the setrlimit system call)	double	No	HP-UX, Solaris 9, Linux	--

Process Detail (PD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Elapsed Time (ELAPSED_TIME)	Elapsed time (in seconds) from when the process started to when the Process Detail (PD) record was stored or process terminated	utime	No	--	<ul style="list-style-type: none"> <li>▪ When a process is running: RECORD_TIME - START_TIME</li> <li>▪ Otherwise: --</li> </ul>
End Time (END_TIME)	Process termination time (When this value is n/a, the process is running.)	time_t	No	All	START_TIME + ELAPSED_TIME
Executable Data Kbytes (EXECUTABLE_DATA_KBYTES)	Data size (in kilobytes) being used under Solaris, the SAUNIXPMAP environment variable must have been set in order to collect this field; set this variable by executing the following command from the command line:  # SAUNIXPMAP=1  # export SAUNIXPMAP	ulong	No	Linux 4	--
Executable Text Kbytes (EXECUTABLE_TEXT_KBYTES)	Text size (in kilobytes) being used under Solaris, the SAUNIXPMAP environment variable must have been set in order to collect this field; set this variable by executing the following command from the command line:  # SAUNIXPMAP=1  # export SAUNIXPMAP	ulong	No	Linux 4	--

Process Detail (PD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Exit Status (EXIT_STATUS)	Process exit status. This data is valid only when the process has terminated (when End Time does not show n/a).	string(20)	No	All	--
File Size Limit (FILE_SIZE_LIMIT)	File size limit (in bytes) for the process (value defined by the RLIMIT_FSIZE parameter of the setrlimit system call)	double	No	HP-UX, Solaris 9, Linux	--
Flags (FLAGS)	List of process flags. If this value consists of 120 or more characters, the last character is >.	string(120)	No	Linux	--
Group (GROUP_NAME)	Effective group name of the process	string(36)	No	--	--
Group ID (GROUP_ID)	Effective group ID of the process	long	No	--	--
Hard CPU Limit (HARD_CPU_LIMIT)	Hard CPU limit of the process (Hcpulimit)	double	No	HP-UX, Solaris 9, Linux	--
Hard Core Size Limit (HARD_CORE_SIZE_LIMIT)	Hard core size limit (in bytes) of the process (Hcorelimit)	double	No	HP-UX, Solaris 9, Linux	--
Hard Data Size Limit (HARD_DATA_SIZE_LIMIT)	Hard data size limit (in bytes) of a process (Hdatalimit)	double	No	HP-UX, Solaris 9, Linux	--
Hard File Size Limit (HARD_FILE_SIZE_LIMIT)	Hard file size limit (in bytes) of the process (Hfilesizelimit)	double	No	HP-UX, Solaris 9, Linux	--
Hard Open Files Limit (HARD_OPEN_FILES_LIMIT)	Hard open file limit of the process (Hopenfileslimit)	double	No	HP-UX, Solaris 9, AIX, Linux	--
Hard Stack Size Limit (HARD_STACK_SIZE_LIMIT)	Hard stack size limit (in bytes) of the process (Hstacklimit)	double	No	HP-UX, Solaris 9, Linux	--

Process Detail (PD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Hard Virtual Mem Size Limit (HARD_VIRTUAL_MEMORY_SIZE_LIMIT)	Hard virtual memory size limit (in bytes) of the process (Hrsslimit)	double	No	HP-UX, Solaris 9, Linux	--
Heap Kbytes (HEAP_KBYTES)	Heap size (in kilobytes) being used	ulong	No	HP-UX, AIX, Linux	--
Interval (INTERVAL)	Interval (in seconds) for storing the Process Detail (PD) record	ulong	Yes	All	--
Major Faults (MAJOR_FAULTS)	Number of page faults that caused a physical I/O	ulong	Yes	--	--
Mem Charge (MEMORY_CHARGE)	Service unit charge for the process. This value is valid only when the process has terminated (when End Time does not show n/a).	ulong	No	All	--
Minor Faults (MINOR_FAULTS)	Number of page faults that did not cause a physical I/O	ulong	Yes	--	--
Niceness (NICENESS)	Nice value of the process (the scheduler class mapped to a process affects this value; e.g., if a task is mapped to scheduler class RT, the nice value is 0)	long	No	--	--
Open Files Limit (OPEN_FILES_LIMIT)	Open file limit of the process (value defined by the RLIMIT_NOFILE parameter of the setrlimit system call)	double	No	HP-UX, Solaris 9, AIX, Linux	--
PID (PID)	Process ID	long	No	--	--
Parent PID (PARENT_PID)	Process ID of the parent process	long	No	--	--

Process Detail (PD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Parent Process List (PARENT_PROCESS_LIST)	List of parent processes of the process (For example, 3867<1<0 indicates that process 0 creates process 1 and process 1 creates process 3867.)  If this value consists of 128 or more characters, the last character is >.	string(128)	No	--	Use the process list to search parent chain.
Priority (PRIORITY)	Process priority.  In an AIX 32-bit environment, when a process ID is 0, 0 is set for this field.	long	No	--	--
Process Group ID (PROCESS_GROUP_ID)	Process group ID	long	No	--	--
Program (PROGRAM_NAME)	Name of the program that is executing	string(256)	No	--	--
Program/PID (PROGRAM_PID)	Name and process ID of the program that is executing	string(280)	No	--	--
Reads (READ_OPS)	AIX: Number of RAW read operations that occurred.  Solaris: Number of BLock read operations that occurred.	ulong	Yes	HP-UX, Linux	--
Reads/sec (READ_OPS_PER_SECOND)	Frequency at which read processes occurred (times per second)	float	Yes	HP-UX, Linux	READ_OPS / ELAPSED_ TIME
Real Group (REAL_GROUP_NAME)	Real group name of the process	string(36)	No	--	--
Real Group ID (REAL_GROUP_ID)	Real group ID of the process	long	No	--	--
Real Mem Kbytes (REAL_MEMORY_KBYTES)	Real memory size (in kilobytes) used	ulong	No	--	--

Process Detail (PD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Real User (REAL_USER_NAME)	Real user name of the process	string(36)	No	--	--
Real User ID (REAL_USER_ID)	Real user ID of the process	long	No	--	--
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record type (always PD)	char(8)	No	--	--
Scheduler Class (SCHEDULER_CLASS)	Scheduling name. One of the following values is set:  TS, IA, FX, FSS, RT, SYS	string(12)	No	HP-UX, AIX, Linux	--
Shared Lib Kbytes (SHARED_LIBRARY_KBYTES)	Size of shared library in use (in kilobytes)	ulong	No	All	--
Shared Mem Kbytes (SHARED_MEMORY_KBYTES)	Amount of shared memory in use (in kilobytes)	ulong	No	Solaris, AIX	--
Signals Rcvd (NUMBER_OF_SIGNALS_RECEIVED)	Number of signals received	ulong	Yes	Linux	--
Snapshot Time (LAST_SNAPSHOT_TIME)	Time at which the process table information was last captured (the record time is used if there is no information in the process table)	time_t	No	--	--
Stack Kbytes (STACK_KBYTES)	Size of the stack (in kilobytes) that a process is using	ulong	No	AIX	--
Stack Size Limit (STACK_SIZE_LIMIT)	Stack size limit (in bytes) of the process (value defined by the RLIMIT_STACK parameter of the setrlimit system call)	double	No	HP-UX, Solaris 9, Linux	--
Start Time (START_TIME)	Start time of the process	time_t	No	--	--

Process Detail (PD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
State (STATE)	Process status. One of the following values is set: <ul style="list-style-type: none"> <li>▪ In AIX: IDLE, ZOMBIE, STOP, RUN, SWAP, or NONE</li> <li>▪ In HP-UX: IDLE, OTHER, RUN, SLEEP, STOP, ZOMBIE, or NONE</li> <li>▪ In Solaris: IDLE, ONCPU, RUN, SLEEP, STOP, ZOMBIE, or NONE</li> </ul>	string(10)	No	--	--
Swaps (SWAPS)	Number of swaps that occurred	ulong	Yes	Linux	--
System CPU (SYSTEM_CPU_TIME)	Length of time (in seconds) the CPU operated in kernel mode	utime	Yes	--	--
Terminal (TERMINAL_NAME)	Name of the terminal that was executed.  Question marks (??) are displayed when performance data is collected for a process that does not have a terminal name.	string(40)	No	--	--
Throughput/sec (IO_KBYTES_PER_SECOND)	Speed of I/O processes (kilobytes per second)	float	Yes	AIX, Linux	TOTAL_IO_KBYTES / ELAPSED_TIME
Total I/O Kbytes (TOTAL_IO_KBYTES)	Total transfer size (in kilobytes) of I/O processes	float	Yes	AIX, Linux	--
Total I/O Ops (TOTAL_IO_OPS)	Number of I/O processes that occurred	ulong	Yes	HP-UX, AIX, Linux	READ_OPS + WRITE_OPS
Total I/O Ops/sec (TOTAL_IO_OPS_PER_SECOND)	Frequency at which I/O processes occurred (times per second)	float	Yes	HP-UX, AIX, Linux	TOTAL_IO_OPS / ELAPSED_TIME

Process Detail (PD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Total Process Kbytes (TOTAL_PROCESS_KBYTES)	Process size in kilobytes. In AIX, this value is the same as the value displayed in the <code>sz</code> column obtained by the <code>ps -l</code> command. In HP-UX, and Solaris, this value is the same as the result of multiplying the page size by the value displayed in the <code>sz</code> column (obtained by the <code>ps -l</code> command). In Linux, this value is the same as the value displayed in the <code>SIZE</code> column obtained by the <code>top</code> command.	ulong	No	--	--
User (USER_NAME)	Effective user name of the process	string(36)	No	--	--
User CPU (USER_CPU_TIME)	Operating time (in seconds) in user mode	utime	Yes	--	--
User ID (USER_ID)	Effective user ID of the process	long	No	--	--
Virtual Mem Kbytes (VIRTUAL_MEMORY_KBYTES)	Amount of virtual memory (in kilobytes) in use	ulong	No	Solaris	--
Virtual Mem Size Limit (VIRTUAL_MEMORY_SIZE_LIMIT)	Virtual memory size limit (in bytes) of the process ( <code>rsslimit</code> ) (value defined by the <code>RLIMIT_VMEM</code> parameter of the <code>setrlimit</code> system call)	double	No	HP-UX, Solaris 9, Linux	--
Writes (WRITE_OPS)	AIX: Number of RAW write operations that occurred.  Solaris: Number of Block write operations that occurred.	ulong	Yes	HP-UX, Linux	--

Process Detail (PD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Writes/sec (WRITE_OPS_PER_SECOND)	Frequency at which write processes occurred (times per second)	float	Yes	HP-UX, Linux	WRITE_OPS / ELAPSED_ TIME

## 2.9.16 Process Detail Interval (PD\_PDI)

### Function

The Process Detail Interval (PD\_PDI) record stores performance data, taken at a specific point in time, about a process. One record is created for each process ID in the system.

The performance data stored in this record is the same as the data stored in the Process Detail (PD) record. If two sets of performance data collected in succession are for the same process, the system creates a separate record for each set of performance data. This differentiates this record from the Process Detail (PD) record, and means that multiple records can be created for the same process. However, if performance data has been collected and the process terminates during the subsequent collection of performance data, the performance data of the subsequent process is not collected.

If you collect this record in real time, performance data on all processes being executed in the system is stored. This is a multi-instance record.

### Notes:

- If the target process for the instance is a zombie process, in Solaris the following fields are set to 0, and in AIX and HP-UX the following fields are set to -3.  
User, User ID, Real User, Real User ID, Group, GroupID, Real Group, Real Group ID
- In AIX and Solaris, only the field data listed below is collected for <defunct> processes (for other fields, 0 or n/a is displayed):  
Accounting Flags, Argument List, End Time, Exit Status, Group, Group ID, Parent PID, PID, Program, Real User, Real User ID, Record Time, Record Type, Snapshot Time, State, Terminal, User, User ID
- The Interval (INTERVAL) field of this record is always 0. A field that indicates a frequency, average, or percentage rate uses the duration since the start of the process as the data source. When a delta value is collected, the calculation is based on the difference between the duration of the previous process and the duration of the current process. When a delta value is not collected, the calculation is based on the cumulative duration of the process.
- The Priority (PRIORITY) field of this record indicates process priority. In Solaris, the priority level indicated by larger numbers is higher than indicated by smaller numbers. In AIX and Linux, the priority level indicated by smaller numbers is higher than that which is indicated by larger numbers. In HP-UX, the settings of each process determine whether the priority level indicated by larger numbers is higher than indicated by smaller numbers. Use the following command to confirm the settings of each process:  

```
export UNIX95=1  
ps -eo pid,cls,pri
```

If 'cls' is FIFO, RR, or RR2, the priority level indicated by smaller numbers is higher than indicated by larger numbers.

If 'cls' is HPUX, or RT, the priority level indicated by larger numbers is higher than indicated by smaller numbers.

- When micro-partitioning is used in AIX 5L V5.3, records are created for each logically partitioned processor. For information about the records and fields affected by micro-partitioning, see section 2.6.3.3.
- Performance data about a terminated process cannot be collected.

Table 2.150 Process Detail Interval (PD\_PDI) Default and Changeable Values

Items	Default Value	Changeable?
Log	No	Yes
LOGIF	(Blank)	
Sync Collection With	Interval Records, PI	No

#### Key Fields

- PID (PID)
- Start Time (START\_TIME)

#### Lifetime

From when the process is executed until it ends

#### Record Size

- Fixed part: 681 bytes
- Variable part: 966 bytes

Table 2.151 Process Detail Interval (PD\_PDI) Fields

Process Detail Interval (PD_PDI)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Accounting Flags (ACCOUNTING_FLAGS)	Operation history information for the process. This data is valid only when the process has terminated (when End Time does not show n/a).	string(256)	No	All	--
Argument List (ARGUMENT_LIST)	Process arguments. The character strings listed in the COMMAND column of the information displayed by the <code>ps -ef</code> command.  In HP-UX, the length is limited to 63 bytes. In Solaris, the length is limited to 79 bytes.	string(120)	No	--	--
Avg I/O Kbytes (AVG_IO_KBYTES)	Average transfer size (in kilobytes) of I/O processing	float	No	HP-UX, AIX, Linux	TOTAL_IO_KBYTES / TOTAL_IO_OPS
CPU % (CPU_PERCENT_USED)	Average CPU usage rate (%) for a process per processor (in AIX 5L V5.3, processors logically partitioned by micro-partitioning)	float	No	--	(( (USER_CPU_TIME + SYSTEM_CPU_TIME) / cumulative-duration-of-process) / processors-count) * 100
CPU % Each (CPU_PERCENT_EACH)	CPU usage rate (%) of a processor	float	No	--	(( (USER_CPU_TIME + SYSTEM_CPU_TIME) / cumulative-duration-of-process) * 100
Context Switches (CONTEXT_SWITCHES)	Number of times context switch was executed	ulong	Yes	HP-UX, Linux	--
End Time (END_TIME)	Process termination time (When this value is n/a, the process is running.)	time_t	No	All	START_TIME + running-time-of-process

Process Detail Interval (PD_PDI)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Executable Data Kbytes (EXECUTABLE_DATA_KBYTES)	Data size (in kilobytes) being used under Solaris, the SAUNIXPMAP environment variable must have been set in order to collect this field; set this variable by executing the following command from the command line:  # SAUNIXPMAP=1 # export SAUNIXPMAP	ulong	No	Linux 4	--
Executable Text Kbytes (EXECUTABLE_TEXT_KBYTES)	Text size (in kilobytes) being used under Solaris, the SAUNIXPMAP environment variable must have been set in order to collect this field; set this variable by executing the following command from the command line:  # SAUNIXPMAP=1 # export SAUNIXPMAP	ulong	No	Linux 4	--
Exit Status (EXIT_STATUS)	Process exit status. This data is valid only when the process has terminated (when End Time does not show n/a).	string(20)	No	All	--
Group (GROUP_NAME)	Effective group name of the process	string(36)	No	--	--
Group ID (GROUP_ID)	Effective group ID of the process	long	No	--	--
Heap Kbytes (HEAP_KBYTES)	Size of the heap (in kilobytes) in use	ulong	No	HP-UX, AIX, Linux	--
Interval (INTERVAL)	The value of this field is always 0.	ulong	Yes	All	--
Major Faults (MAJOR_FAULTS)	Number of page faults that caused a physical I/O	ulong	Yes	--	--

Process Detail Interval (PD_PDI)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Minor Faults (MINOR_FAULTS)	Number of page faults that did not cause a physical I/O	ulong	Yes	--	--
Niceness (NICENESS)	Nice value of the process (the scheduler class mapped to a process affects this value; e.g., if a task is mapped to scheduler class RT, the nice value is 0)	long	No	--	--
PID (PID)	Process ID	long	No	--	--
Parent PID (PARENT_PID)	Process ID of the parent process	long	No	--	--
Priority (PRIORITY)	Process priority. In an AIX 32-bit environment, when a process ID is 0, 0 is set for this field.	long	No	--	--
Program (PROGRAM_NAME)	Name of executing program	string(256)	No	--	--
Reads (READ_OPS)	AIX: Number of RAW read operations that occurred. Solaris: Number of Block read operations that occurred.	ulong	Yes	HP-UX, Linux	--
Reads/sec (READ_OPS_PER_SECOND)	Frequency at which read processes occurred (times per second)	float	Yes	HP-UX, Linux	If the delta value is not collected, $READ\_OPS / cumulative-duration-of-process$ . If the delta value is collected, $READ\_OPS / (duration-of-previous-process - duration-of-current-process)$
Real Mem Kbytes (REAL_MEMORY_KBYTES)	Amount of real memory (in kilobytes) in use	ulong	No	--	--

Process Detail Interval (PD_PDI)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Real User (REAL_USER_NAME)	Real user name of the process	string(36)	No	--	--
Real User ID (REAL_USER_ID)	Real user ID of the process	long	No	--	--
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record type (always PDI)	char(8)	No	--	--
Shared Lib Kbytes (SHARED_LIBRARY_KBYTES)	Amount of the shared library in use (in kilobytes)	ulong	No	All	--
Shared Mem Kbytes (SHARED_MEMORY_KBYTES)	Amount of the shared memory in use (in kilobytes)	ulong	No	Solaris, AIX	--
Signals Rcvd (NUMBER_OF_SIGNALS_RECEIVED)	Number of signals received	ulong	Yes	Linux	--
Snapshot Time (LAST_SNAPSHOT_TIME)	Time at which the process table information was last captured (the record time is used if there is no information in the process table)	time_t	No	--	--
Stack Kbytes (STACK_KBYTES)	Size of the stack in use (in kilobytes)	ulong	No	AIX	--
Start Time (START_TIME)	Process start time	time_t	No	--	--

Process Detail Interval (PD_PDI)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
State (STATE)	<p>Process status.</p> <p>One of the following values is set:</p> <ul style="list-style-type: none"> <li>▪ In AIX: IDLE, ZOMBIE, STOP, RUN, SWAP, or NONE</li> <li>▪ In HP-UX: IDLE, OTHER, RUN, SLEEP, STOP, ZOMBIE, or NONE</li> <li>▪ In Solaris: IDLE, ONCPU, RUN, SLEEP, STOP, ZOMBIE, or NONE</li> <li>▪ In Linux: RUN, SLEEP, SWAP, STOP, ZOMBIE, or NONE</li> </ul>	string(10)	No	--	--
Swaps (SWAPS)	Number of swaps that occurred	ulong	Yes	Linux	--
System CPU (SYSTEM_CPU_TIME)	Length of time (in seconds) the CPU operated in kernel mode	utime	Yes	--	--
Terminal (TERMINAL_NAME)	Name of the executed terminal. Question marks (??) are displayed when performance data is collected for a process that does not have a terminal name.	string(40)	No	--	--
Throughput/sec (IO_KBYTES_PER_SECOND)	Speed of I/O processes (kilobytes per second)	float	Yes	AIX, Linux	<p>If the delta value is not collected, TOTAL_IO_KBYTES / cumulative-duration-of-process.</p> <p>If the delta value is collected, TOTAL_IO_KBYTES / (duration-of-previous-process - duration-of-current-process)</p>

Process Detail Interval (PD_PDI)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Total I/O Kbytes (TOTAL_IO_KBYTES)	Total transfer size (in kilobytes) of I/O processes	float	Yes	AIX, Linux	--
Total I/O Ops (TOTAL_IO_OPS)	Number of I/O processes that occurred	ulong	Yes	HP-UX, AIX, Linux	READ_OPS + WRITE_OPS
Total I/O Ops/sec (TOTAL_IO_OPS_PER_SECOND)	Frequency at which I/O processes occurred (times per second)	float	Yes	HP-UX, AIX, Linux	If the delta value is not collected, TOTAL_IO_OPS / cumulative-duration-of-process. If the delta value is collected, TOTAL_IO_OPS / (duration-of-previous-process-duration-of-current-process)
Total Process Kbytes (TOTAL_PROCESS_KBYTES)	Process size in kilobytes. In AIX, this value is the same as the value displayed in the <code>sz</code> column obtained by the <code>ps -l</code> command.  In HP-UX, and Solaris, this value is the same as the result of multiplying the page size by the value displayed in the <code>sz</code> column (obtained by the <code>ps -l</code> command). In Linux, this value is the same as the value displayed in the <code>SIZE</code> column obtained by the <code>top</code> command.	ulong	No	--	--
User (USER_NAME)	Effective user name of the process	string(36)	No	--	--
User CPU (USER_CPU_TIME)	Operating time in user mode (in seconds)	utime	Yes	--	--
User ID (USER_ID)	Effective user ID of the process	long	No	--	--
Virtual Mem Kbytes (VIRTUAL_MEMORY_KBYTES)	Amount of virtual memory (in kilobytes) in use	ulong	No	Solaris	--

Process Detail Interval (PD_PDI)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Writes (WRITE_OPS)	AIX: Number of RAW write operations that occurred.  Solaris: Number of Block write operations that occurred.	ulong	Yes	HP-UX, Linux	--
Writes/sec (WRITE_OPS_PER _SECOND)	Frequency at which write processes occurred (times per second)	float	Yes	HP-UX, Linux	If the delta value is not collected, $WRITE\_OPS /$ <i>cumulative-</i> <i>duration-of-</i> <i>process.</i>  If the delta value is collected, $WRITE\_OPS /$ <i>(duration-of-</i> <i>previous-process -</i> <i>duration-of-current-</i> <i>process)</i>

## 2.9.17 Process Summary (PD\_PDS)

### Function

The Process Summary (PD\_PDS) record stores performance data that summarizes information in the Process Detail (PD) records (at a specific point in time).

The information in this record is taken from the process table information over the past one minute. Also, the number of processes in which the values of specific items changed within a collection interval is counted as the number of active processes. The specific items differ depending on the OS, as listed below:

- AIX:  
The CPU usage time, page fault count, context switch count, and process size
- HP-UX:  
The CPU usage time, page fault count, and process size
- Solaris:  
The CPU usage time, page fault count, context switch count, system call count, I/O count, and process size
- Linux:  
The CPU usage time, page fault count, process size, and current directory

Even without collecting Process Detail (PD) records, the collected performance data is stored in this record.

Table 2.152 Process Summary (PD\_PDS) Default and Changeable Values

Items	Default Value	Changeable?
Log	No	Yes
LOGIF	(Blank)	
Sync Collection With	Interval Records, PI	No

### Key Fields

None

### Lifetime

None

### Record Size

- Fixed part: 741 bytes
- Variable part: 0 bytes

Table 2.153 Process Summary (PD\_PDS) Fields

Process Summary (PD_PDS)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Active System Processes (NUMBER_OF_ACTIVE_SYSTEM_PROCESSES)	Number of active system processes. In the first real-time report, 0 is displayed.	ulong	No	AIX, Linux	--
Active User Processes (NUMBER_OF_ACTIVE_USER_PROCESSES)	Number of active user processes. In the first real-time report, 0 is displayed. In AIX and Linux, this field displays the total number of active system processes and active user processes.	ulong	No	--	--
Active Users (NUMBER_OF_ACTIVE_USERS)	Number of users executing processes, counted as the number of active system processes or active user processes. In the first real-time report, 0 is displayed.	ulong	No	--	--
Daemon Processes (NUMBER_OF_DAEMON_PROCESSES)	Number of daemon processes	ulong	No	--	--
Interval (INTERVAL)	Length in seconds of the interval for storing the Process Summary (PD_PDS) record (always 0)	ulong	No	All	--
Mem Processes (NUMBER_OF_MEMORY_PROCESSES)	Number of memory management processes In Linux 4, the number of processes named kswapd0 is counted.	ulong	No	--	--
New Processes (NUMBER_OF_NEW_PROCESSES)	Number of new processes. This field displays the difference between the previous process information and the current process information. For the first real-time report, 0 is displayed.	ulong	No	--	Current TOTAL_NUMBER_OF_PROCESSES - previous TOTAL_NUMBER_OF_PROCESSES
Processes (TOTAL_NUMBER_OF_PROCESSES)	Number of processes in the system	ulong	No	--	--

Process Summary (PD_PDS)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record type (always PDS)	char (8 )	No	--	--
Runnable Processes (NUMBER_OF_RUNNABLE_PROCESSES)	Number of executable processes	ulong	No	--	--
Sleeping Processes (NUMBER_OF_SLEEPING_PROCESSES)	Number of sleeping processes	ulong	No	--	--
Stopped Processes (NUMBER_OF_STOPPED_PROCESSES)	Number of stopped processes	ulong	No	--	--
Swapped Processes (NUMBER_OF_SWAPPED_PROCESSES)	Number of processes swapped out (checks the process table for the number of processes that are not in the core)	ulong	No	Solaris 10	--
Terminals (NUMBER_OF_ACTIVE_TERMINALS)	Number of ttys executing processes, counted as the number of active system processes or active user processes. In the first real-time report, 0 is displayed.	ulong	No	--	--
Terminated Processes (NUMBER_OF_DIED_PROCESSES)	Number of terminated processes. This field displays the difference between the previous process information and the current process information. For the first real-time report, 0 is displayed.	ulong	No	--	Previous TOTAL_NUMBER_OF_PROCESSES - current TOTAL_NUMBER_OF_PROCESSES
Users (TOTAL_NUMBER_OF_USERS)	Number of actual users	ulong	No	--	--
Zombie Processes (NUMBER_OF_ZOMBIE_PROCESSES)	Number of zombie processes	ulong	No	--	--

## 2.9.18 Program Summary (PD\_PGM)

### Function

The Program Summary (PD\_PGM) record stores performance data, taken at a specific point in time that summarizes information in the Process Detail (PD) records. The PD\_PGM record summarizes the information (at a specific point in time) for each program. One record is created for each program that is executing. This is a multi-instance record. Even without collecting Process Detail (PD) records, the collected performance data is stored in this record.

*Note:* When micro-partitioning is used in AIX 5L V5.3, records are created for each logically partitioned processor. For information about the records and fields affected by micro-partitioning, see section 2.6.3.3.

Table 2.154 Program Summary (PD\_PGM) Default and Changeable Values

Items	Default Value	Changeable?
Log	No	Yes
LOGIF	(Blank)	
Sync Collection With	Detail Records, PD	No

### Key Fields

Program (PROGRAM\_NAME)

### Lifetime

From when the process starts until it ends

### Record Size

- Fixed part: 681 bytes
- Variable part: 344 bytes

Table 2.155 Program Summary (PD\_PGM) Fields

Program Summary (PD_PGM)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Avg I/O Kbytes (AVG_IO_KBYTES)	Average transfer size (in kilobytes) of I/O processing	float	No	HP-UX, AIX, Linux	TOTAL_IO_KBYTES / (READ_OPS + WRITE_OPS)

Program Summary (PD_PGM)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
CPU % (CPU_PERCENT_USED)	Average CPU usage rate (%) of a processor. In AIX 5L V5.3, the average CPU usage rate of a processor logically partitioned by micro-partitioning.	float	No	--	$((USER\_CPU\_TIME + SYSTEM\_CPU\_TIME) / total-elapsed-time-of-all-processes-executing-programs) / processors-count * 100$
Context Switches (CONTEXT_SWITCHES)	Number of times context switch was executed	ulong	No	HP-UX, Linux	--
Interval (INTERVAL)	Interval (in seconds) for storing the Program Summary (PD_PGM) record (always 0)	ulong	No	All	--
Major Faults (MAJOR_FAULTS)	Number of page faults that caused a physical I/O	ulong	No	--	--
Minor Faults (MINOR_FAULTS)	Number of page faults that did not cause a physical I/O	ulong	No	--	--
Process Count (PROCESS_COUNT)	Number of processes that are executing programs (number of processes in the process table that have this program name)	ulong	No	--	Number of processes in the process table that have this program name
Program (PROGRAM_NAME)	Program name	string (256)	No	--	--
Reads (READ_OPS)	AIX: Number of RAW read operations that occurred. Solaris: Number of Block read operations that occurred.	ulong	No	HP-UX, Linux	--
Reads/sec (READ_OPS_PER_SECOND)	Frequency at which read processes occurred (times per second)	float	No	HP-UX, Linux	$READ\_OPS / total-elapsed-time-of-all-processes-executing-programs$
Real Mem Kbytes (REAL_MEMORY_KBYTES)	Amount of real memory (in kilobytes) in use	ulong	No	--	--
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record type (always PGM)	char (8)	No	--	--

Program Summary (PD_PGM)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Signals Rcvd (NUMBER_OF_SIGNALS_RECEIVED)	Number of signals received	ulong	No	Linux	--
Swaps (SWAPS)	Number of swap processes that occurred	ulong	No	Linux	--
System CPU (SYSTEM_CPU_TIME)	Length of time the CPU operated in kernel mode	utime	No	--	--
Throughput/sec (IO_KBYTES_PER_SECOND)	Speed of I/O processes (in kilobytes per second)	float	No	AIX, Linux	<i>TOTAL_IO_KBYTES / total-elapsed-time-of-all-processes-executing-programs</i>
Total I/O Kbytes (TOTAL_IO_KBYTES)	Total transfer size (in kilobytes) of I/O processes	ulong	No	AIX, Linux	--
Total I/O Ops (TOTAL_IO_OPS)	Number of I/O processes that occurred	ulong	No	HP-UX, AIX, Linux	READ_OPS + WRITE_OPS
Total I/O Ops/sec (TOTAL_IO_OPS_PER_SECOND)	Frequency at which I/O processes occurred (times per second)	float	No	HP-UX, AIX, Linux	<i>TOTAL_IO_OPS / total-elapsed-time-of-all-processes-executing-programs</i>
User CPU (USER_CPU_TIME)	Operating time (in seconds) in user mode	utime	No	--	--
Virtual Mem Kbytes (VIRTUAL_MEMORY_KBYTES)	Amount of virtual memory (in kilobytes) in use	ulong	No	Solaris	--
Writes (WRITE_OPS)	AIX: Number of RAW write operations that occurred. Solaris: Number of Block write operations that occurred.	ulong	No	HP-UX, Linux	--
Writes/sec (WRITE_OPS_PER_SECOND)	Frequency at which write processes occurred (times per second)	float	No	HP-UX, Linux	<i>WRITE_OPS / total-elapsed-time-of-all-processes-that-invoke-programs</i>

## 2.9.19 Quotas (PD\_UFSQ)

### Function

The Quotas (PD\_UFSQ) record stores performance data indicating a user's disk file quota (at a specific point in time) for a local file system. One record is created for each user with a quota allocated by the file system. Two records would be created if quotas were allocated to the same user for two different file systems. This is a multi-instance record.

### Notes:

- This record is not available in Solaris 10, AIX 5L V5.3, and Linux.
- To collect Quotas(PD\_UFSQ) records using Solaris, you must first execute the following two commands:
  - `modload -p fs/mntfs`
  - `modload -p fs/ufs`

Table 2.156 Quotas (PD\_UFSQ) Default and Changeable Values

Items	Default Value	Changeable?
Collection Interval	3600	Yes
Collection Offset	0	
Log	No	
LOGIF	(Blank)	

### Key Fields

- File System (`FILESYSTEM_NAME`)
- User ID (`USER_ID`)

### Lifetime

From when the quota is allocated with `edquota` until the allocation is set to 0

### Record Size

- Fixed part: 681 bytes
- Variable part: 2,148 bytes

Table 2.157 Quotas (PD\_UFSQ) Fields

Quotas (PD_UFSQ)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Active State (QUOTA_ACTIVE_STATE)	Active flag value (On or Off)	string(4)	No	Solaris 10, AIX 5L V5.3, Linux	--
Block Limit (BLOCK_LIMIT_COUNT)	Maximum number of file system blocks	ulong	No	Solaris 10, AIX 5L V5.3, Linux	--
Blocks in Use (NUMBER_OF_BLOCKS_IN_USE)	Number of blocks that are in use	ulong	No	Solaris 10, AIX 5L V5.3, Linux	--
Blocks in Use % (BLOCKS_IN_USE_PERCENT)	Percentage (%) of blocks that are in use	float	No	Solaris 10, AIX 5L V5.3, Linux	(NUMBER_OF_BLOCKS_IN_USE / BLOCK_LIMIT_COUNT) * 100
File Limit (FILE_LIMIT_COUNT)	Maximum number of files in the file system	ulong	No	Solaris 10, AIX 5L V5.3, Linux	--
File Name (QUOTA_FILENAME)	<p>Management file name of the quota database.</p> <p>In AIX, the value of the userquota entry for the file system is acquired from /etc/filesystems, and then displayed. If the userquota entry does not exist, the following is displayed: <i>file-system-name/quotas.user</i></p> <p>In HP-UX and Solaris, the following is displayed: <i>file-system-name/quotas</i></p>	string(1040)	No	Solaris 10, AIX 5L V5.3, Linux	--

Quotas (PD_UFSQ)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
File System (FILESYSTEM_NAME)	File system name	string(1024)	No	Solaris 10, AIX 5L V5.3, Linux	--
Files in Use (NUMBER_OF_FILES_IN_USE)	Number of files that are in use	ulong	No	Solaris 10, AIX 5L V5.3, Linux	--
Files in Use % (FILES_IN_USE_PERCENT)	Percentage (%) of files that are in use	float	No	Solaris 10, AIX 5L V5.3, Linux	(NUMBER_OF_FILES_IN_USE / FILE_LIMIT_COUNT) * 100
Hard Block Limit (HARD_BLOCK_LIMIT_COUNT)	Hard block limit (Hblocklimit)	ulong	No	Solaris 10, AIX 5L V5.3, Linux	--
Hard Blocks in Use % (HARD_BLOCKS_IN_USE_PERCENT)	Percentage (%) of the hard block limit count that is in use	float	No	Solaris 10, AIX 5L V5.3, Linux	(NUMBER_OF_BLOCKS_IN_USE / HARD_BLOCK_LIMIT_COUNT) * 100
Hard File Limit (HARD_FILE_LIMIT_COUNT)	Hard file limit of the file system (Hfilelimit)	ulong	No	Solaris 10, AIX 5L V5.3, Linux	--
Hard Files in Use % (HARD_FILES_IN_USE_PERCENT)	Percentage (%) of the hard file limit count that is in use	float	No	Solaris 10, AIX 5L V5.3, Linux	(NUMBER_OF_FILES_IN_USE / HARD_FILE_LIMIT_COUNT) * 100
Interval (INTERVAL)	Interval (in seconds) for storing the Quotas (PD_UFSQ) record (always 0)	ulong	No	All	--
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	time_t	No	Solaris 10, AIX 5L V5.3, Linux	--
Record Type (INPUT_RECORD_TYPE)	Record type (always UFSQ)	char(8)	No	Solaris 10, AIX 5L V5.3, Linux	--

Quotas (PD_UFSQ)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
User (USER_NAME)	User name to which the quota applies (if no key is specified, no information is registered).	string(36)	No	Solaris 10, AIX 5L V5.3, Linux	--
User ID (USER_ID)	User ID to which the quota applies	long	No	Solaris 10, AIX 5L V5.3, Linux	--

## 2.9.20 Semaphore Detail (PD\_SEMD)

### Function

The Semaphore Detail (PD\_SEMD) record stores performance data indicating the status (at a specific point in time) of a semaphore. This is a multi-instance record.

### Notes:

- This record is not available in Solaris 10 ,AIX, and Linux.
- To collect Semaphore Detail (PD\_SEMD) records in Solaris, you must execute the following command in advance: `modload -p sys/semsys`

Table 2.158 Semaphore Detail (PD\_SEMD) Default and Changeable Values

Items	Default Value	Changeable?
Collection Interval	3600	Yes
Collection Offset	0	
Log	No	
LOGIF	(Blank)	

### Key Fields

- Key (KEY)
- Semnum (SEMNUM)

### Lifetime

From when the semaphore is created until it is deleted

### Record Size

- Fixed part: 681 bytes
- Variable part: 208 bytes

Table 2.159 Semaphore Detail (PD\_SEMD) Fields

Semaphore Detail (PD_SEMD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Change Time (CTIME)	Time at which the semaphore was created or modified	time_t	No	Solaris 10, AIX, Linux	--
Creator Group (CREATOR_GROUP)	Group name of the creator	string(36)	No	Solaris 10, AIX, Linux	--

Semaphore Detail (PD_SEMD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Creator Group ID (CGROUP)	Group ID of the creator	ulong	No	Solaris 10, AIX, Linux	--
Creator Login ID (CREATOR)	Login ID of the creator	ulong	No	Solaris 10, AIX, Linux	--
Creator Name (CREATOR_NAME)	Login name of the creator	string(36 )	No	Solaris 10, AIX, Linux	--
Current Value (SEMVAl)	Semaphore value	ulong	No	Solaris 10, AIX, Linux	--
ID (ID)	Semaphore identifier	ulong	No	Solaris 10, AIX, Linux	--
Interval (INTERVAL)	Interval (in seconds) for storing the Semaphore Detail (PD_SEMD) record (always 0)	ulong	No	All	--
Key (KEY)	Key for creating and defining IPC packets	ulong	No	Solaris 10, AIX, Linux	--
Last Op Time (OTIME)	Last time the semaphore was used	time_t	No	Solaris 10, AIX, Linux	--
Last PID (SEMPID)	Last process ID that used the semaphore	ulong	No	Solaris 10, AIX, Linux	--
Mode (MODE)	Semaphore access permissions	string(12 )	No	Solaris 10, AIX, Linux	--
Owner Group (OWNER_GROUP)	Group name of the owner	string(36 )	No	Solaris 10, AIX, Linux	--
Owner Group ID (GROUP)	Group ID of the owner	ulong	No	Solaris 10, AIX, Linux	--
Owner Login ID (OWNER)	Login ID of the owner	ulong	No	Solaris 10, AIX, Linux	--
Owner Name (OWNER_NAME)	Login name of the owner	string(36 )	No	Solaris 10, AIX, Linux	--
Processes Waiting on Semaphore (SEMNCNT)	Number of processes waiting for the semaphore value to exceed the condition value	ulong	No	Solaris 10, AIX, Linux	--
Processes Waiting on Zero (SEMZCNT)	Number of processes waiting for the semaphore value to become 0	ulong	No	Solaris 10, AIX, Linux	--

Semaphore Detail (PD_SEMD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	time_t	No	Solaris 10, AIX, Linux	--
Record Type (INPUT_RECORD_TYPE)	Record type (always SEMD)	char(8)	No	Solaris 10, AIX, Linux	--
Semnum (SEMNUM)	Semaphore index number in the set of semaphores	ulong	No	Solaris 10, AIX, Linux	--

## 2.9.21 Shared Memory Detail (PD\_SHMD)

### Function

The Shared Memory Detail (PD\_SHMD) record stores performance data indicating the status (at a specific point in time) of shared memory mapping and usage. This is a multi-instance record.

### Notes:

- This record is not available in HP-UX 11i V2 (PA-RISC), Solaris 10, AIX, and Linux.
- To collect Shared Memory Detail (PD\_SHMD) records in Solaris, you must execute the following command in advance: `modload -p sys/shmsys`

Table 2.160 Shared Memory Detail (PD\_SHMD) Default and Changeable Values

Items	Default Value	Changeable?
Collection Interval	3600	Yes
Collection Offset	0	
Log	No	
LOGIF	(Blank)	

### Key Fields

- Key (`KEY`)
- ID (`ID`)

### Lifetime

From when the shared memory segment is created until it is deleted

### Record Size

- Fixed part: 681 bytes
- Variable part: 212 bytes

Table 2.161 Shared Memory Detail (PD\_SHMD) Fields

Shared Memory Detail (PD_SHMD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Changed Time ( <code>CTIME</code> )	Time at which shared memory was created or modified	<code>time_t</code>	No	HP-UX 11i V2 (PA-RISC), Solaris 10, AIX, Linux	--

Shared Memory Detail (PD_SHMD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Creating PID (CPID)	Process ID that created shared memory	ulong	No	HP-UX 11i V2 (PA-RISC), Solaris 10, AIX, Linux	--
Creator Group ID (CGROUP)	Group ID of the creator	ulong	No	HP-UX 11i V2 (PA-RISC), Solaris 10, AIX, Linux	--
Creator Group Name (CREATOR_GROUP)	Group name of the creator	string(36)	No	HP-UX 11i V2 (PA-RISC), Solaris 10, AIX, Linux	--
Creator Login ID (CREATOR)	Login ID of the creator	ulong	No	HP-UX 11i V2 (PA-RISC), Solaris 10, AIX, Linux	--
Creator Login Name (CREATOR_NAME)	Login name of the creator	string(36)	No	HP-UX 11i V2 (PA-RISC), Solaris 10, AIX, Linux	--
Detach Time (DTIME)	Time at which shared memory was last detached	time_t	No	HP-UX 11i V2 (PA-RISC), Solaris 10, AIX, Linux	--
ID (ID)	Shared memory identifier	ulong	No	HP-UX 11i V2 (PA-RISC), Solaris 10, AIX, Linux	--
Interval (INTERVAL)	Interval (in seconds) for storing the Shared Memory Detail (PD_SHMD) record (always 0)	ulong	No	All	--
Key (KEY)	Key for creating and defining IPC packets	ulong	No	HP-UX 11i V2 (PA-RISC), Solaris 10, AIX, Linux	--
Last-Attached Time (ATIME)	Time at which shared memory was last attached	time_t	No	HP-UX 11i V2 (PA-RISC), Solaris 10, AIX, Linux	--
Last-Used PID (LPID)	Process ID of the last process to attach to or detach from shared memory	ulong	No	HP-UX 11i V2 (PA-RISC), Solaris 10, AIX, Linux	--
Mode (MODE)	Access mode permissions of shared memory	string(12)	No	HP-UX 11i V2 (PA-RISC), Solaris 10, AIX, Linux	--

Shared Memory Detail (PD_SHMD)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Owner Group ID (GROUP)	Group ID of the owner	ulong	No	HP-UX 11i V2 (PA-RISC), Solaris 10, AIX, Linux	--
Owner Group Name (OWNER_GROUP)	Group name of the owner	string(36)	No	HP-UX 11i V2 (PA-RISC), Solaris 10, AIX, Linux	--
Owner Login ID (OWNER)	Login ID of the owner	ulong	No	HP-UX 11i V2 (PA-RISC), Solaris 10, AIX, Linux	--
Owner Login Name (OWNER_NAME)	Login name of the owner	string(36)	No	HP-UX 11i V2 (PA-RISC), Solaris 10, AIX, Linux	--
Processes Attached (NATTCH)	Number of processes attached to the shared memory segment	ulong	No	HP-UX 11i V2 (PA-RISC), Solaris 10, AIX, Linux	--
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	time_t	No	HP-UX 11i V2 (PA-RISC), Solaris 10, AIX, Linux	--
Record Type (INPUT_RECORD_TY PE)	Record type (always SHMD)	char(8)	No	HP-UX 11i V2 (PA-RISC), Solaris 10, AIX, Linux	--
Segment Size (SEGSZ)	Shared memory segment size (in bytes)	double	No	HP-UX 11i V2 (PA-RISC), Solaris 10, AIX, Linux	--

## 2.9.22 System Summary Overview (PI)

### Function

The System Summary Overview (PI) record stores performance data, taken at specific intervals, about the entire system.

### Notes:

- Some performance data cannot be collected correctly if the CPU and memory system resources are changed during startup of a service for the Agent for Platform by using any of the following functions: the DLPAR function for AIX 5L V5.2 (or later), vPars function for HP-UX 11i V1, or DR function for Solaris 8 (or later). For details about changing system resources, see section 2.6.3.2.
- When micro-partitioning is used in AIX 5L V5.3, records are created for each logically partitioned processor. For information about the records and fields affected by micro-partitioning, see section 2.6.3.3.

Table 2.162 System Summary Overview (PI) Default and Changeable Values

Items	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	
Log	Yes	
LOGIF	(Blank)	

### Key Fields

None

### Lifetime

None

### Record Size

- Fixed part: 2,525 bytes
- Variable part: 0 bytes

Table 2.163 System Summary Overview (PI) Fields

System Summary Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
1-Minute Run Queue Avg (ONE_MINUTE_RUN_QUEUE_AVG)	Average number of processes that were queued in the execution queue within the last 1 minute. In HP-UX, Solaris, and AIX, this value does not include the number of threads waiting for I/Os. In Linux, this value includes the number of threads waiting for I/Os.	float	No	--	--
15-Minute Run Queue Avg (FIFTEEN_MINUTE_RUN_QUEUE_AVG)	Average number of processes that were queued in the execution queue within the last 15 minutes. In HP-UX, Solaris, and AIX, this value does not include the number of threads waiting for I/Os. In Linux, this value includes the number of threads waiting for I/Os.	float	No	--	--
5-Minute Run Queue Avg (FIVE_MINUTE_RUN_QUEUE_AVG)	Average number of processes that were queued in the execution queue within the last 5 minutes. In HP-UX, Solaris, and AIX, this value does not include the number of threads waiting for I/Os. In Linux, this value includes the number of threads waiting for I/Os.	float	No	--	--
Active CPUs (NUMBER_OF_ACTIVE_CPUS)	Number of processors (in AIX 5L V5.3, the number of processors logically partitioned by micro-partitioning)	ulong	No	--	CPU - Per Processor Detail (PI_CPUP) records
Alloc Mem % (ALLOCATED_MEMORY_PERCENT)	Percentage (%) of the amount of real memory (in megabytes) in use	float	No	--	(ALLOCATED_MEMORY_MB BYTES / TOTAL_MEMORY_MB BYTES) * 100
Alloc Mem Mbytes (ALLOCATED_MEMORY_MBYTES)	Megabytes of real memory in use	float	No	--	TOTAL_MEMORY_MBYTES - FREE_MEMORY_MBYTES

System Summary Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Alloc Swap % (ALLOCATED_SWAP_PERCENT)	Percentage (%) of swap region megabytes in use	float	No	--	(ALLOCATED_SWAP_MBYTES / TOTAL_SWAP_MBYTES) * 100
Alloc Swap Mbytes (ALLOCATED_SWAP_MBYTES)	Megabytes of the swap region in use	float	No	--	TOTAL_SWAP_MBYTES - FREE_SWAP_MBYTES
Block Ops (BLOCKIO_IO_OPS)	Number of block I/O processes that occurred	ulong	Yes	Linux	BLOCKIO_READ_OPS + BLOCKIO_WRITE_OPS
Block Reads (BLOCKIO_READ_OPS)	Number of block read processes that occurred	ulong	Yes	Linux	--
Block Reads/sec (BLOCKIO_READ_OPS_PER_SECOND)	Frequency at which block read processes occurred (times per second)	float	Yes	Linux	BLOCKIO_READ_OPS / INTERVAL
Block Writes (BLOCKIO_WRITE_OPS)	Number of block write processes that occurred	ulong	Yes	Linux	--
Block Writes/sec (BLOCKIO_WRITE_OPS_PER_SECOND)	Frequency at which block write processes occurred (times per second)	float	Yes	Linux	BLOCKIO_WRITE_OPS / INTERVAL
Boot Time (CURRENT_SYSTEM_BOOT_TIME)	Time of the last boot	time_t	No	--	--
CPU % (KERNELMODE_USERMODE_PERCENT)	CPU usage rate (%). This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning).	float	No	--	((TOTAL_USERMODE_TIME + TOTAL_KERNELMODE_TIME) / (TOTAL_IDLE_TIME + TOTAL_USERMODE_TIME + TOTAL_WAIT_TIME + TOTAL_KERNELMODE_TIME)) * 100

System Summary Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Cache Read % (CACHE_READ_PERCENT)	This is the percentage (%) of reading operations that were cache reading operations.	float	No	Linux	$(\text{LOGICAL\_READ\_OPS} - \text{BLOCKIO\_READ\_OPS}) / \text{LOGICAL\_READ\_OPS} * 100$
Cache Write % (CACHE_WRITE_PERCENT)	This is the percentage (%) of writing operations that were cache writing operations.	float	No	Linux	$(\text{LOGICAL\_WRITE\_OPS} - \text{BLOCKIO\_WRITE\_OPS}) / \text{LOGICAL\_WRITE\_OPS} * 100$
Context Switches (CONTEXT_SWITCHES)	Number of times context switch was executed	ulong	Yes	--	--
Context Switches/sec (CONTEXT_SWITCHES_PER_SECOND)	Frequency at which context switch was executed (times per second)	float	Yes	--	$\text{CONTEXT\_SWITCHES} / \text{INTERVAL}$
Faults (TOTAL_FAULTS)	Number of times a page fault occurred	ulong	Yes	Linux	$\text{MAJOR\_FAULTS} + \text{MINOR\_FAULTS}$
Free Mem % (FREE_MEMORY_PERCENT)	Percentage (%) of the amount of real memory (in megabytes) not in use	float	No	--	$(\text{FREE\_MEMORY\_MBYTES} / \text{TOTAL\_MEMORY\_MBYTES}) * 100$
Free Mem Mbytes (FREE_MEMORY_MBYTES)	Megabytes of real memory not in use	float	No	--	--
Free Swap % (FREE_SWAP_PERCENT)	Percentage (%) of the amount of the swap region (in megabytes) not in use	float	No	--	$\text{FREE\_SWAP\_MBYTES} / \text{TOTAL\_SWAP\_MBYTES} * 100$
Free Swap Mbytes (FREE_SWAP_MBYTES)	Amount of the swap region (in megabytes) not in use	float	No	--	--
ICMP Pkts In (ICMP_PACKETS_IN)	Number of IPv4 ICMP packets received. Total number of local packets, remote packets, and packets resulting in errors.	ulong	Yes	--	--

System Summary Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
ICMP Pkts Out (ICMP_PACKETS_OUT)	Number of IPv4 ICMP packets sent. Total number of local packets, remote packets, and packets resulting in errors.	ulong	Yes	--	--
IP Pkts In (IP_PACKETS_IN)	Number of IPv4 IP packets received. Total number of local and remote packets. This value does not include the packets resulting in errors.	ulong	Yes	--	--
IP Pkts Out (IP_PACKETS_OUT)	Number of IPv4 IP packets sent. Total number of local and remote packets. This value does not include the packets resulting in errors.	ulong	Yes	--	--
Idle % (IDLE_TIME_PERCENT)	Percentage (%) of time the system was idle. This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning).	float	No	--	$(\text{TOTAL\_IDLE\_TIME} / (\text{TOTAL\_IDLE\_TIME} + \text{TOTAL\_USER\_MODE\_TIME} + \text{TOTAL\_WAIT\_TIME} + \text{TOTAL\_KERNEL\_MODE\_TIME})) * 100$
Interrupts (INTERRUPTS)	Number of interrupts that occurred	ulong	Yes	AIX	--
Interrupts/sec (INTERRUPTS_PER_SECOND)	Frequency at which interrupts occurred (interrupts per second)	float	Yes	AIX	$\text{INTERRUPTS} / \text{INTERVAL}$
Interval (INTERVAL)	Interval (in seconds) for storing the System Summary Overview (PI) record	ulong	Yes	--	<ul style="list-style-type: none"> <li>For real-time reports: <math>\text{RECORD\_TIME} - \text{last-boot-time}</math></li> <li>For other reports: <math>\text{RECORD\_TIME} - \text{previous-record-time}</math></li> </ul>

System Summary Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Kernel CPU % ( <code>KERNELMODE_PERCENT</code> )	Percentage (%) of time the system was operating in kernel mode.  This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning).	float	No	--	( <code>TOTAL_KERNELMODE_TIME / (TOTAL_IDLE_TIME + TOTAL_USERMODE_TIME + TOTAL_WAIT_TIME + TOTAL_KERNELMODE_TIME) * 100</code> )
Logical I/O Ops ( <code>LOGICAL_IO_OPS</code> )	Number of logical I/O processes that occurred	ulong	Yes	Linux	<code>LOGICAL_READ_OPS + LOGICAL_WRITE_OPS</code>
Logical Read Mbytes ( <code>LOGICAL_READ_MBYTES</code> )	Transfer size (in megabytes) of logical read processes.  In HP-UX, this value indicates the size of data read from the block device. In Solaris and AIX, this value indicates the size of data read by the <code>read</code> system call.	float	Yes	Linux	--
Logical Reads ( <code>LOGICAL_READ_OPS</code> )	Number of logical read processes that occurred	ulong	Yes	Linux	--
Logical Reads/sec ( <code>LOGICAL_READ_MBYTES_PER_SECOND</code> )	Speed of logical read process (Mbytes per second)	float	Yes	Linux	<code>LOGICAL_READ_MBYTES / INTERVAL</code>
Logical Write Mbytes ( <code>LOGICAL_WRITE_MBYTES</code> )	Transfer size (in megabytes) of logical write processes.  In HP-UX, this value indicates the size of data written to the block device. In Solaris and AIX, this value indicates the size of data written by the <code>write</code> system call.	float	Yes	Linux	--
Logical Writes ( <code>LOGICAL_WRITE_OPS</code> )	Number of logical write processes that occurred	ulong	Yes	Linux	--
Logical Writes/sec ( <code>LOGICAL_WRITE_MBYTES_PER_SECOND</code> )	Speed of logical write processes (Mbytes per second)	float	Yes	Linux	<code>LOGICAL_WRITE_MBYTES / INTERVAL</code>

System Summary Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Major Faults (MAJOR_FAULTS)	Number of page faults that caused a physical I/O	ulong	Yes	Linux	--
Major Faults/sec (MAJOR_FAULTS_PER_SECOND)	Frequency of page faults that caused a physical I/O (times per second)	float	Yes	Linux	MAJOR_FAULTS / INTERVAL
Mem I/O Ops (MEMORY_IO_OPS)	Number of page faults that caused a swap or physical I/O	ulong	Yes	AIX, Linux	SWAP_IN_OPS + SWAP_OUT_OPS + MAJOR_FAULTS
Minor Faults (MINOR_FAULTS)	Number of page faults that did not cause a physical I/O	ulong	Yes	AIX, Linux	--
Minor Faults/sec (MINOR_FAULTS_PER_SECOND)	Frequency of page faults that did not cause a physical I/O (times per second)	float	Yes	AIX, Linux	MINOR_FAULTS / INTERVAL
NFS Client Lookup Ops (NFS_CLIENT_LOOKUP_OPS)	Number of lookup processes that occurred on the NFS client	ulong	Yes	Linux	--
NFS Client Ops/sec (NFS_CLIENT_TOTAL_OPS_PER_SECOND)	Frequency at which processes occurred on the NFS client (times per second)	float	Yes	Linux	NFS_CLIENT_TOTAL_OPS / INTERVAL
NFS Client Read Ops (NFS_CLIENT_READ_OPS)	Number of read processes that occurred on the NFS client	ulong	Yes	Linux	--
NFS Client Read Ops/sec (NFS_CLIENT_READ_OPS_PER_SECOND)	Frequency at which read processes occurred on the NFS client (times per second)	float	Yes	Linux	NFS_CLIENT_READ_OPS / INTERVAL
NFS Client Total Bad Ops (NFS_CLIENT_TOTAL_BAD_OPS)	Total number of processes that failed on the NFS client	ulong	Yes	Linux	--
NFS Client Total Ops (NFS_CLIENT_TOTAL_OPS)	Total number of processes that occurred on the NFS client	ulong	Yes	Linux	--
NFS Client Write Ops (NFS_CLIENT_WRITE_OPS)	Number of write processes that occurred on the NFS client	ulong	Yes	Linux	--

System Summary Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
NFS Client Write Ops/sec (NFS_CLIENT_WRITE_OPS_PER_SECOND)	Frequency at which write processes occurred on the NFS client (times per second)	float	Yes	Linux	$\frac{\text{NFS\_CLIENT\_WRITE\_OPS}}{\text{INTERVAL}}$
NFS Server Lookup Ops (NFS_SERVER_LOOKUP_OPS)	Number of lookup processes that occurred on the NFS server	ulong	Yes	Linux	--
NFS Server Ops/sec (NFS_SERVER_TOTAL_OPS_PER_SECOND)	Frequency at which processes occurred on the NFS server (times per second)	float	Yes	Linux	$\frac{\text{NFS\_SERVER\_TOTAL\_OPS}}{\text{INTERVAL}}$
NFS Server Read Ops (NFS_SERVER_READ_OPS)	Number of read processes that occurred on the NFS server	ulong	Yes	Linux	--
NFS Server Read Ops/sec (NFS_SERVER_READ_OPS_PER_SECOND)	Frequency at which read processes occurred on the NFS server (times per second)	float	Yes	Linux	$\frac{\text{NFS\_SERVER\_READ\_OPS}}{\text{INTERVAL}}$
NFS Server Total Bad Ops (NFS_SERVER_TOTAL_BAD_OPS)	Number of processes that failed on the NFS server	ulong	Yes	Linux	--
NFS Server Total Ops (NFS_SERVER_TOTAL_OPS)	Number of processes that occurred on the NFS server	ulong	Yes	Linux	--
NFS Server Write Ops (NFS_SERVER_WRITE_OPS)	Number of write processes that occurred on the NFS server	ulong	Yes	Linux	--
NFS Server Write Ops/sec (NFS_SERVER_WRITE_OPS_PER_SECOND)	Frequency at which write processes occurred on the NFS server (times per second)	float	Yes	Linux	$\frac{\text{NFS\_SERVER\_WRITE\_OPS}}{\text{INTERVAL}}$
Other Pkts In (OTHER_PACKETS_IN)	This field is not supported; its value is always 0.	ulong	Yes	All	--
Other Pkts Out (OTHER_PACKETS_OUT)	This field is not supported; its value is always 0.	ulong	Yes	All	--

System Summary Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Page Ops/sec (PAGE_OPS_PER_SECOND)	Frequency at which the page in and page out processes occurred (times per second)	float	Yes	AIX, Linux	TOTAL_PAGE_OPS / INTERVAL
Page Reclaims/sec (PAGE_RECLAIMS_PER_SECOND)	Frequency at which page reuse occurred (times per second)	float	Yes	AIX, Linux	TOTAL_PAGE_RECLAIMS / INTERVAL
Page Scans/sec (PAGE_SCANS_PER_SECOND)	Frequency at which page scans occurred (times per second)	float	Yes	Linux	TOTAL_PAGE_SCANS / INTERVAL
Page-In Ops (PAGE_IN_OPS)	Number of page-in processes that occurred	ulong	Yes	AIX, Linux	--
Page-In Ops/sec (PAGE_IN_OPS_PER_SECOND)	Frequency at which page-in processes occurred (times per second)	float	Yes	AIX, Linux	PAGE_IN_OPS / INTERVAL
Page-Out Ops (PAGE_OUT_OPS)	Number of page-out processes that occurred	ulong	Yes	AIX, Linux	--
Page-Out Ops/sec (PAGE_OUT_OPS_PER_SECOND)	Frequency at which page-out processes occurred (times per second)	float	Yes	AIX, Linux	PAGE_OUT_OPS / INTERVAL
Pages In (PAGE_IN_COUNT)	Number of pages fetched by the page-in process	ulong	Yes	--	--
Pages In/sec (PAGE_IN_COUNT_PER_SECOND)	Frequency at which the page-in process fetched pages (in pages per second)	float	Yes	--	PAGE_IN_COUNT / INTERVAL
Pages Out (PAGE_OUT_COUNT)	Number of pages output by the page-out process	ulong	Yes	--	--
Pages Out/sec (PAGE_OUT_COUNT_PER_SECOND)	Frequency at which the page out process output pages (in pages per second)	float	Yes	--	PAGE_OUT_COUNT / INTERVAL
Physical I/O Ops (PHYSICAL_IO_OPS)	Number of physical I/O processes that occurred	ulong	Yes	Linux	PHYSICAL_READ_OPS + PHYSICAL_WRITE_OPS
Physical Reads (PHYSICAL_READ_OPS)	Number of physical read processes that occurred	ulong	Yes	Linux	--
Physical Writes (PHYSICAL_WRITE_OPS)	Number of physical write processes that occurred	ulong	Yes	Linux	--

System Summary Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Processes (CURRENT_PROCESS_COUNT)	Number of processes in the system	ulong	No	--	Total number of processes in the process table
Processes Ended (PROCESSES_ENDED)	Number of processes that ended. This field displays the difference between the previous process information and the current process information. For the first real-time report, 0 is displayed.	ulong	No	--	<i>processes-count-at-previous-interval - (CURRENT_PROCESS_COUNT - PROCESSES_STARTED)</i>
Processes Started (PROCESSES_STARTED)	Number of processes that started. This field displays the difference between the previous process information and the current process information. For the first real-time report, 0 is displayed.	ulong	No	--	<i>CURRENT_PROCESS_COUNT - number-of-previous-processes</i>
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record type (always PI)	char(8)	No	--	--
Run Queue (PROCESSES_IN_RUN_QUEUE)	Number of processes waiting in the queue	float	No	Linux	--
Software Lock Faults (SOFTWARE_LOCK_FAULTS)	Number of failed software locks	ulong	Yes	HP-UX, AIX, Linux	--
Software Lock Faults/sec (SOFTWARE_LOCK_FAULTS_PER_SECOND)	Frequency at which software locks failed (times per second)	float	Yes	HP-UX, AIX, Linux	<i>SOFTWARE_LOCK_FAULTS / INTERVAL</i>
Swap-In Ops (SWAP_IN_OPS)	Number of swap-in processes that occurred	ulong	Yes	AIX, Linux	--
Swap-Ins/sec (SWAP_IN_OPS_PER_SECOND)	Frequency at which swap-in processes occurred (times per second)	float	Yes	AIX, Linux	<i>SWAP_IN_OPS / INTERVAL</i>

System Summary Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Swap-Out Ops (SWAP_OUT_OPS)	Number of swap-out processes that occurred	ulong	Yes	AIX, Linux	--
Swap-Outs/sec (SWAP_OUT_OPS_PER_SECOND)	Frequency at which swap-out processes occurred (times per second)	float	Yes	AIX, Linux	SWAP_OUT_OPS / INTERVAL
Swapped-In Pages (SWAP_IN_COUNT)	Number of pages swapped in by swap-in processes	ulong	Yes	--	--
Swapped-In Pages/sec (SWAP_IN_COUNT_PER_SECOND)	Frequency at which swap-in processes swapped in pages (pages per second).  In AIX, frequency at which swap-in processes swapped in as many pages as constitutes the paging area (pages per second)	float	Yes	--	SWAP_IN_COUNT / INTERVAL
Swapped-Out Pages (SWAP_OUT_COUNT)	Number of pages swapped out by swap-out process	ulong	Yes	--	--
Swapped-Out Pages/sec (SWAP_OUT_COUNT_PER_SECOND)	Frequency at which swap-out processes swapped out pages (pages per second).  In AIX, frequency at which swap-out processes swapped out as many pages as constitutes the paging area (pages per second)	float	Yes	--	SWAP_OUT_COUNT / INTERVAL
System Calls (SYSTEM_CALLS)	Number of system calls that occurred	ulong	Yes	Linux	--
System Calls/sec (SYSTEM_CALLS_PER_SECOND)	Frequency at which system calls occurred (times per second)	float	Yes	Linux	SYSTEM_CALLS / INTERVAL
System Up Time (CURRENT_BOOT_SYSTEM_UP_TIME)	Time since last boot-up (in seconds)	string(20)	No	--	RECORD_TIME - CURRENT_BOOT_SYSTEM_UP_TIME
TCP Pkts In (TCP_PACKETS_IN)	Number of IPv4 TCP packets received. Total number of local packets, remote packets, and packets resulting in errors.	ulong	Yes	--	--

System Summary Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
TCP Pkts Out (TCP_PACKETS_OUT)	Number of IPv4 TCP packets sent. Total number of local packets, remote packets, and packets resulting in errors.	ulong	Yes	--	--
Total Faults/sec (TOTAL_FAULTS_PER_SECOND)	Frequency at which page faults occurred (times per second)	float	Yes	Linux	TOTAL_FAULTS / INTERVAL
Total Idle Time (TOTAL_IDLE_TIME)	Total idle time (in seconds) for all processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning)	utime	Yes	--	--
Total Kernel-Mode Time (TOTAL_KERNELMODE_TIME)	Total length of time (in seconds) the system operated in kernel mode for all processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning)	utime	Yes	--	--
Total Page Ops (TOTAL_PAGE_OPS)	Number of paging processes that occurred	ulong	Yes	AIX, Linux	PAGE_IN_OPS + PAGE_OUT_OPS
Total Page Reclaims (TOTAL_PAGE_RECLAIMS)	Number of page reuses that occurred	ulong	Yes	AIX, Linux	--
Total Page Scans (TOTAL_PAGE_SCANS)	Number of pages checked by page scans	ulong	Yes	Linux	--
Total Physical Mem Mbytes (TOTAL_MEMORY_MBYTES)	Amount of real memory (in megabytes)	ulong	No	--	--
Total Pkts (TOTAL_PACKETS)	Total number of IPv4 TCP, IPv4 UDP, and IPv4 ICMP packets sent and received	ulong	Yes	--	TOTAL_PACKETS_IN + TOTAL_PACKETS_OUT
Total Pkts In (TOTAL_PACKETS_IN)	Total number of IPv4 TCP, IPv4 UDP, and IPv4 ICMP packets received	ulong	Yes	--	TCP_PACKETS_IN + UDP_PACKETS_IN + ICMP_PACKETS_IN

System Summary Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Total Pkts Out (TOTAL_PACKETS_OUT)	Total number of IPv4 TCP, IPv4 UDP, and IPv4 ICMP packets sent	ulong	Yes	--	TCP_PACKETS_OUT + UDP_PACKETS_OUT + ICMP_PACKETS_OUT
Total Swap Mbytes (TOTAL_SWAP_MBYTES)	Size of the swap region (in megabytes)	ulong	No	--	--
Total Swaps (TOTAL_SWAP_OPS)	Number of swap processes that occurred	ulong	Yes	AIX, Linux	SWAP_IN_OPS + SWAP_OUT_OPS
Total Swaps/sec (TOTAL_SWAP_OPS_PER_SECOND)	Frequency at which swap processes occurred	float	Yes	AIX, Linux	TOTAL_SWAP_OPS / INTERVAL
Total User-Mode Time (TOTAL_USERMODE_TIME)	Total length of time (in seconds) the system operated in user mode for all processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning)	utime	Yes	--	--
Total Wait Time (TOTAL_WAIT_TIME)	Length of time (in seconds) the system was idle waiting for I/Os	utime	Yes	--	--
Traps (TRAPS)	Number of traps that occurred	ulong	Yes	AIX, Linux	--
Traps/sec (TRAPS_PER_SECOND)	Frequency at which traps were set (traps per second)	float	Yes	AIX, Linux	TRAPS / INTERVAL
UDP Pkts In (UDP_PACKETS_IN)	Number of IPv4 UDP packets received.  Total number of local packets, remote packets, and packets resulting in errors.	ulong	Yes	--	--
UDP Pkts Out (UDP_PACKETS_OUT)	Number of IPv4 UDP packets sent.  Total number of local packets, remote packets, and packets resulting in errors.	ulong	Yes	--	--

System Summary Overview (PI)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
User CPU % (USERMODE_PERCENT)	Percentage (%) of time the processor operated in user mode. This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning).	float	No	--	$(TOTAL\_USERMODE\_TIME / (TOTAL\_IDLE\_TIME + TOTAL\_USERMODE\_TIME + TOTAL\_WAIT\_TIME + TOTAL\_KERNELMODE\_TIME)) * 100$
Users (CURRENT_USER_COUNT)	Number of actual users	ulong	No	Solaris	--
Wait % (WAIT_TIME_PERCENT)	Percentage (%) of time the processor was idle waiting for I/Os.  This value is also the average for processors (in AIX 5L V5.3, the processors include those logically partitioned by micro-partitioning).	float	No	--	$(TOTAL\_WAIT\_TIME / (TOTAL\_IDLE\_TIME + TOTAL\_USERMODE\_TIME + TOTAL\_WAIT\_TIME + TOTAL\_KERNELMODE\_TIME)) * 100$

## 2.9.23 Tape Device Summary (PI\_TAPS)

### Function

The Tape Device Summary (PI\_TAPS) record stores performance data that summarizes information in Device Detail (PI\_DEVD) records. A PI\_TAPS record summarizes the information (taken at specific intervals) about tape-device usage. You can use this record in Solaris 8 and Solaris 9.

*Note:* This record is not available in HP-UX, Solaris 10, AIX, and Linux.

Table 2.164 Tape Device Summary (PI\_TAPS) Default and Changeable Values

Items	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	
Log	No	
LOGIF	(Blank)	

### Key Fields

None

### Lifetime

None

### Record Size

- Fixed part: 1,013 bytes
- Variable part: 0 bytes

Table 2.165 Tape Device Summary (PI\_TAPS) Fields

Tape Device Summary (PI_TAPS)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Avg Service Time/device (SERVICE_TIME)	Average time (in seconds) for operations on a tape device	utime	No	HP-UX, Solaris 10, AIX, Linux	TOTAL_SERVICE_TIME / DEVICE_COUNT
Avg Service Time/op (AVG_SERVICE_TIME)	Average time (in seconds) for I/O operations on a tape device	utime	No	HP-UX, Solaris 10, AIX, Linux	TOTAL_SERVICE_TIME / TOTAL_IO_OPS

Tape Device Summary (PI_TAPS)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Devices (DEVICE_COUNT)	Number of tape devices	ulong	No	HP-UX, Solaris 10, AIX, Linux	Number of Device Detail (PI_DEVD) records summarized by Tape Device Summary (PI_TAPS) record whose device type is tape.
I/O Mbytes (TOTAL_IO_MBYTES)	Total transfer size (in megabytes) of I/O processes	ulong	Yes	HP-UX, Solaris 10, AIX, Linux	--
Interval (INTERVAL)	Interval (in seconds) for storing the Tape Device Summary (PI_TAPS) record	ulong	Yes	HP-UX, Solaris 10, AIX, Linux	<ul style="list-style-type: none"> <li>▪ For real-time reports: RECORD_TIME - system-boot-time</li> <li>▪ For other reports: RECORD_TIME - previous-record-time</li> </ul>
Mbytes Xferd/sec (MBYTES_TRANSFERRED_PER_SECOND)	Average speed of I/O processes (in megabytes per second)	float	Yes	HP-UX, Solaris 10, AIX, Linux	TOTAL_IO_MBYTES / INTERVAL
Queue Length (QUEUE_LENGTH)	Average queue length of tape device. One unit of this value is one second of I/O operations	ulong	No	HP-UX, Solaris 10, AIX, Linux	sum-of-all-device-queue-lengths / DEVICE_COUNT
Read Ops % (READ_OPS_PERCENT)	Percentage (%) of I/O processes that were read processes	float	No	HP-UX, Solaris 10, AIX, Linux	(TOTAL_READ_OPS / TOTAL_IO_OPS) * 100
Reads (TOTAL_READ_OPS)	Number of read processes that occurred	ulong	Yes	HP-UX, Solaris 10, AIX, Linux	--

Tape Device Summary (PI_TAPS)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Reads/sec (READ_OPS_PER_SECOND)	Frequency at which read processes occurred (times per second)	float	Yes	HP-UX, Solaris 10, AIX, Linux	TOTAL_READ_OPS / INTERVAL
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	time_t	No	HP-UX, Solaris 10, AIX, Linux	--
Record Type (INPUT_RECORD_TYPE)	Record type (always TAPS)	char(8)	No	HP-UX, Solaris 10, AIX, Linux	--
Total I/O Ops (TOTAL_IO_OPS)	Number of I/O processes that occurred	ulong	Yes	HP-UX, Solaris 10, AIX, Linux	TOTAL_READ_OPS + TOTAL_WRITE_OPS
Total I/O Ops/sec (TOTAL_OPS_PER_SECOND)	Frequency at which I/O processes occurred (times per second)	float	Yes	HP-UX, Solaris 10, AIX, Linux	TOTAL_IO_OPS / INTERVAL
Total Service Time (TOTAL_SERVICE_TIME)	Total time for operations on all tape devices (in seconds)	utime	Yes	HP-UX, Solaris 10, AIX, Linux	--
Total Wait Length Time (TOTAL_WAIT_LENGTH_TIME)	Total I/O wait time on all tape devices (in seconds). This value is calculated by integrating the wait time and the result of the following expression: <i>(number-of-I/O-operations-on-wait)/(number-of-I/O-operations-that-can-be-performed-in-one-second)</i> .	utime	Yes	HP-UX, Solaris 10, AIX, Linux	--
Total Wait Time (TOTAL_WAIT_TIME)	Total wait time (in seconds) for operations on all tape devices	utime	Yes	HP-UX, Solaris 10, AIX, Linux	--

Tape Device Summary (PI_TAPS)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Wait Length Time (WAIT_LEN_TIME)	Average wait time (in seconds) for I/O operations per tape device. This value is calculated by integrating the wait time and the result of the following expression, and dividing the integration result by the number of tape devices: <i>(number-of-I/O-operations-on-wait)/(number-of-I/O-operations-that-can-be-performed-in-one-second).</i>	utime	No	HP-UX, Solaris 10, AIX, Linux	TOTAL_WAIT_LEN_TIME / DEVICE_COUNT
Wait Time (WAIT_TIME)	Average wait time (in seconds) for operations per tape device	utime	No	HP-UX, Solaris 10, AIX, Linux	TOTAL_WAIT_TIME / DEVICE_COUNT
Write Ops % (WRITE_OPS_PERCENT)	Percentage (%) of I/O processes that were write processes	float	No	HP-UX, Solaris 10, AIX, Linux	(TOTAL_WRITE_OPS / TOTAL_IO_OPS) * 100
Writes (TOTAL_WRITE_OPS)	Number of write processes that occurred	ulong	Yes	HP-UX, Solaris 10, AIX, Linux	--
Writes/sec (WRITE_OPS_PER_SECOND)	Frequency at which write processes occurred (times per second)	float	Yes	HP-UX, Solaris 10, AIX, Linux	TOTAL_WRITE_OPS / INTERVAL

## 2.9.24 Terminal Summary (PD\_TERM)

### Function

The Terminal Summary (PD\_TERM) record stores performance data that summarizes information in Process Detail (PD) records. A PD\_TERM record summarizes the information (at a specific point in time) for each terminal. One record is created for each terminal. This is a multi-instance record. Even without collecting Process Detail (PD) records, the collected performance data is stored in this record.

### Notes:

- If the process does not have a terminal name, ?? is displayed in the Terminal (TERMINAL\_NAME) field.
- When micro-partitioning is used in AIX 5L V5.3, records are created for each logically partitioned processor. For information about the records and fields affected by micro-partitioning, see section 2.6.3.3.

Table 2.166 Terminal Summary (PD\_TERM) Default and Changeable Values

Items	Default Values	Changeable?
Log	No	Yes
LOGIF	(Blank)	
Sync Collection With	Detail Records, PD	No

### Key Fields

Terminal (TERMINAL\_NAME)

### Lifetime

From when the number of performance data items or records of the specified terminal is at least 1 until the number of performance data items or records becomes 0.

### Record Size

- Fixed part: 681 bytes
- Variable part: 128 bytes

Table 2.167 Terminal Summary (PD\_TERM) Fields

Terminal Summary (PD_TERM)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Avg I/O Kbytes (AVG_IO_KBYTES)	Average transfer size (in kilobytes) of I/O processing	float	No	HP-UX, AIX, Linux	TOTAL_IO_KB BYTES / TOTAL_IO_OP S
CPU % (CPU_PERCENT_U SED)	Mean of the CPU usage rate (%) divided by the number of processors (in AIX 5L V5.3, the number of processors logically partitioned by micro-partitioning)	float	No	--	(( (USER_CPU _TIME + SYSTEM_CPU_ TIME) / <i>total-elapsed- time-of-all- processes- executed-from- a-terminal</i> ) / <i>processors- count</i> ) * 100
Context Switches (CONTEXT_SWITC HES)	Number of times context switch was executed	ulong	No	HP-UX, Linux	--
Interval (INTERVAL)	Length (in seconds) of the interval for storing the Terminal Summary (PD_TERM) record (always 0)	ulong	No	All	--
Major Faults (MAJOR_FAULTS)	Number of page faults that caused a physical I/O	ulong	No	--	--
Minor Faults (MINOR_FAULTS)	Number of page faults that did not cause a physical I/O	ulong	No	--	--
Process Count (PROCESS_COUNT)	Number of processes executed from a terminal	ulong	No	--	Number of processes in processes table and are using a terminal
Reads (READ_OPS)	AIX: Number of RAW read operations that occurred. Solaris: Number of Block read operations that occurred.	ulong	No	HP-UX, Linux	--
Reads/sec (READ_OPS_PER_ SECOND)	Frequency at which read processes occurred (times per second)	float	No	HP-UX, Linux	READ_OPS / <i>total-elapsed- time-of-all- processes- executed-from- a-terminal</i>
Real Mem Kbytes (REAL_MEMORY_K BYTES)	Amount of real memory (in kilobytes) in use	float	No	--	--

Terminal Summary (PD_TERM)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record type (always TERM)	char(8)	No	--	--
Signals Rcvd (NUMBER_OF_SIGNALS_RECEIVED)	Number of signals received	ulong	No	Linux	--
Swaps (SWAPS)	Number of swap processes that occurred	ulong	No	Linux	--
System CPU (SYSTEM_CPU_TIME)	Length of time (in seconds) the CPU operated in kernel mode	utime	No	--	--
Terminal (TERMINAL_NAME)	Terminal name. Question marks (??) are displayed when performance data is collected for a process that does not have a terminal name.	string(40)	No	--	--
Throughput/sec (IO_KBYTES_PER_SECOND)	Speed of I/O processes (kilobytes per second)	float	No	AIX, Linux	TOTAL_IO_KBYTES / total-elapsed-time-of-all-processes-executed-from-a-terminal
Total I/O Kbytes (TOTAL_IO_KBYTES)	Total transfer size (in kilobytes) of I/O processes	ulong	No	AIX, Linux	--
Total I/O Ops (TOTAL_IO_OPS)	Number of I/O processes that occurred	ulong	No	HP-UX, AIX, Linux	READ_OPS + WRITE_OPS
Total I/O Ops/sec (TOTAL_IO_OPS_PER_SECOND)	Frequency at which I/O processes occurred (times per second)	float	No	HP-UX, AIX, Linux	TOTAL_IO_OPS / total-elapsed-time-of-all-processes-executed-from-a-terminal
User CPU (USER_CPU_TIME)	Length of time (in seconds) the CPU operated in user mode	utime	No	--	--
Virtual Mem Kbytes (VIRTUAL_MEMORY_KBYTES)	Amount of virtual memory (in kilobytes) in use	float	No	Solaris	--

Terminal Summary (PD_TERM)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Writes (WRITE_OPS)	AIX: Number of RAW write operations that occurred. Solaris: Number of Block write operations that occurred.	ulong	No	HP-UX, Linux	--
Writes/sec (WRITE_OPS_PER_SECOND)	Frequency at which write processes occurred (times per second)	float	No	HP-UX, Linux	<i>WRITE_OPS / total-elapsed-time-of-all-processes-executed-from-a-terminal</i>

## 2.9.25 User File System Storage (PD\_UFSS)

### Function

The User File System Storage (PD\_UFSS) record stores performance data indicating the status (at a specific point in time) of the local file system used by a user who is registered in the system. One record is created for each user with files in the local file system. If the same user has files in two different file systems, two records are created. This is a multi-instance record.

### Notes:

- This record is not available in Solaris 10 and Linux 4.
- To collect User File System Storage (PD\_UFSS) records, you need to install optional packages for the OS. For details on the optional packages to be installed, see the appendix in the *HiCommand Tuning Manager Installation Guide*.
- Operate Agent for Platform (UNIX) so it can reference information about remote file systems that are mounted (a status in which the `df` command executes normally). If no response is returned from a remote file system that is mounted, the Agent Collector service hangs up when it attempts to collect the User File System Storage (PD\_UFSS) record and cannot continue collecting performance data.

For details about the error recovery methods when collection of performance data cannot continue, see section 2.6.3.1.

- Performance data from the following file systems cannot be collected in User File System Storage (PD\_UFSS) records:
  - A file system whose file system name exceeds 255 bytes in length
  - A file system whose file system name includes a colon (:)
- User File System Storage (PD\_UFSS) records are used to collect performance data once every 24 hours (at 00:00).

When performance data in a User File System Storage (PD\_UFSS) record is viewed in real-time reports, the time the performance data was actually collected is displayed as the data collection time (around 00:00).

When performance data from a User File System Storage (PD\_UFSS) record is used in a historical report, setting the record collection interval to less than 86,400 seconds (24 hours) displays duplicate performance data at the same collection time.

- There are situations in which collection of performance data in User File System Storage (PD\_UFSS) records requires several hours. Thus, when a report refers to a User File System Storage (PD\_UFSS) record, the data collection time may differ from the set time.
- User File System Storage (PD\_UFSS) records are not suitable for alarm monitoring. If you want to use User File System Storage (PD\_UFSS) records for alarm monitoring, set them after taking into consideration their data collection method.

Table 2.168 User File System Storage (PD\_UFSS) Default and Changeable Values

Items	Default Values	Changeable?
Collection Interval	86400	Yes
Collection Offset	0	
Log	No	
LOGIF	(Blank)	

**Key Fields**

- File System (FILESYSTEM\_NAME)
- User ID (USER\_ID)

**Lifetime**

None

**Record Size**

- Fixed part: 681 bytes
- Variable part: 1,084 bytes

Table 2.169 User File System Storage (PD\_UFSS) Fields

User File System Storage (PD_UFSS)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
File System (FILESYSTEM_NAME)	File system name	string(1024)	No	Solaris 10, Linux 4	--
File System Size Mbytes (FILESYSTEM_SIZE_IN_MBYTES)	File system area (in megabytes)	double	No	Solaris 10, Linux 4	--
Interval (INTERVAL)	Interval (in seconds) for storing the User File System Storage (PD_UFSS) record (always 0)	ulong	No	All	--
Mbytes in Use (MBYTES_IN_USE)	Area (in megabytes) in use	double	No	Solaris 10, Linux 4	--
Mbytes in Use % (MBYTES_IN_USE_PERCENTAGE)	Percentage (%) of area (in megabytes) in use	float	No	Solaris 10, Linux 4	$(\text{MBYTES\_IN\_USE} / \text{FILESYSTEM\_SIZE\_IN\_MBYTES}) * 100$

User File System Storage (PD_UFSS)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	time_t	No	Solaris 10, Linux 4	--
Record Type (INPUT_RECORD_TYPE)	Record type (always UFSS)	char(8)	No	Solaris 10, Linux 4	--
User (USER_NAME)	User name	string(36)	No	Solaris 10, Linux 4	--
User ID (USER_ID)	User ID	long	No	Solaris 10, Linux 4	--

## 2.9.26 User Summary (PD\_USER)

### Function

The User Summary (PD\_USER) record stores performance data that summarizes information in Process Detail (PD) records. A PD\_USER record summarizes the information (at a specific point in time) for each user. One record is created for each user ID. This is a multi-instance record. Even without collecting Process Detail (PD) records, the collected performance data is stored in this record.

**Note:** When micro-partitioning is used in AIX 5L V5.3, records are created for each logically partitioned processor. For information about the records and fields affected by micro-partitioning, see section 2.6.3.3.

Table 2.170 User Summary (PD\_USER) Default and Changeable Values

Items	Default Values	Changeable?
Log	No	Yes
LOGIF	(Blank)	
Sync Collection With	Detail Records, PD	No

### Key Fields

User ID (REAL\_USER\_ID)

### Lifetime

From when the number of process executes for the specified terminal is at least 1 until the number of process executions becomes 0

### Record Size

- Fixed part: 681 bytes
- Variable part: 128 bytes

Table 2.171 User Summary (PD\_USER) Fields

User Summary (PD_USER)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Avg I/O Kbytes (AVG_IO_KBYTES)	Average transfer size (in kilobytes) of I/O processing	float	No	AIX, HP-UX, Linux	TOTAL_IO_KB BYTES / READ_OPS + WRITE_OPS

User Summary (PD_USER)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
CPU % (CPU_PERCENT_USED)	Mean of the CPU usage rate (%) divided by the number of processors (in AIX 5L V5.3, the number of processors logically partitioned by micro-partitioning)	float	No	--	$((USER\_CPU\_TIME + SYSTEM\_CPU\_TIME) / total\text{-}elapsed\text{-}time\text{-}of\text{-}all\text{-}processes\text{-}executed\text{-}by\text{-}user) / processors\text{-}count) * 100$
Context Switches (CONTEXT_SWITCHES)	Number of times context switch was executed	ulong	No	HP-UX, Linux	--
Interval (INTERVAL)	Interval (in seconds) for storing the User Summary (PD_USER) record (always 0)	ulong	No	All	--
Major Faults (MAJOR_FAULTS)	Number of page faults that caused a physical I/O	ulong	No	--	--
Minor Faults (MINOR_FAULTS)	Number of page faults that did not cause a physical I/O	ulong	No	--	--
Process Count (PROCESS_COUNT)	Number of processes the user executed	ulong	No	--	--
Reads (READ_OPS)	AIX: Number of RAW read operations that occurred. Solaris: Number of Block read operations that occurred.	ulong	No	HP-UX, Linux	--
Reads/sec (READ_OPS_PER_SECOND)	Frequency at which read processes occurred (times per second)	float	No	HP-UX, Linux	$READ\_OPS / total\text{-}elapsed\text{-}time\text{-}of\text{-}all\text{-}processes\text{-}belonging\text{-}to\text{-}a\text{-}user\text{-}account$
Real Mem Kbytes (REAL_MEMORY_KBYTES)	Amount of real memory (in kilobytes) in use	float	No	--	--
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record type (always USER)	char(8)	No	--	--
Signals Rcvd (NUMBER_OF_SIGNALS_RECEIVED)	Number of signals received	ulong	No	Linux	--

User Summary (PD_USER)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Swaps (SWAPS)	Number of swap processes that occurred	ulong	No	Linux	--
System CPU (SYSTEM_CPU_TIME)	Length of time (in seconds) the CPU operated in kernel mode	utime	No	--	--
Throughput/sec (IO_KBYTES_PER_SECOND)	Speed of I/O processes (kilobytes per second)	float	No	AIX, Linux	TOTAL_IO_KBYTES / <i>total-elapsed-time-of-all-processes-belonging-to-a-user-account</i>
Total I/O Kbytes (TOTAL_IO_KBYTES)	Total transfer size (in kilobytes) of I/O processes	ulong	No	AIX, Linux	--
Total I/O Ops (TOTAL_IO_OPS)	Number of I/O processes that occurred	ulong	No	HP-UX, AIX, Linux	READ_OPS + WRITE_OPS
Total I/O Ops/sec (TOTAL_IO_OPS_PER_SECOND)	Frequency at which I/O processes occurred (times per second)	float	No	HP-UX, AIX, Linux	TOTAL_IO_OPS / <i>total-process-time-of-all-processes-belonging-to-a-user-account</i>
User (REAL_USER_NAME)	Effective user name	string(36)	No	--	--
User CPU (USER_CPU_TIME)	Length of time (in seconds) the CPU operated in user mode	utime	No	--	--
User ID (REAL_USER_ID)	Effective user ID	long	No	--	--
Virtual Mem Kbytes (VIRTUAL_MEMORY_KBYTES)	Amount of virtual memory (in kilobytes) in use	float	No	Solaris	--
Writes (WRITE_OPS)	AIX: Number of RAW write operations that occurred. Solaris: Number of Block write operations that occurred.	ulong	No	HP-UX, Linux	--
Writes/sec (WRITE_OPS_PER_SECOND)	Frequency at which write processes occurred (times per second)	float	No	HP-UX, Linux	WRITE_OPS / <i>total-elapsed-time-of-all-processes-belonging-to-a-user-account</i>

## 2.9.27 Workgroup Summary (PI\_WGRP)

### Function

The Workgroup Summary (PI\_WGRP) record stores performance data that summarizes information in Process Detail (PD) records. A PI\_WGRP record summarizes the information (at a specific point in time) for each workgroup. One record is stored for each workgroup. The workgroup name Other is generated automatically for all process records that do not belong to any defined workgroup. This is a multi-instance record. Even without collecting Process Detail (PD) records, the collected performance data is stored in this record.

### Notes:

- Storing workgroup information places a heavy workload on the system and may require a large amount of computer resources.
- If you change workgroup definitions, you must restart Agent for Platform.
- Group names are based on actual group names instead of active group names.
- When micro-partitioning is used in AIX 5L V5.3, records are created for each logically partitioned processor. For information about the records and fields affected by micro-partitioning, see section 2.6.3.3.

Table 2.172 Workgroup Summary (PI\_WGRP) Default and Changeable Values

Items	Default Value	Changeable?
Collection Interval	60	Yes
Collection Offset	0	
Log	No	
LOGIF	(Blank)	

### Key Fields

Workgroup (WORKGROUP\_NAME)

### Lifetime

None

### Record Size

- Fixed part: 681 bytes
- Variable part: 248 bytes

Table 2.173 Workgroup Summary (PI\_WGRP) Fields

Workgroup Summary (PI_WGRP)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Avg I/O Kbytes (AVG_IO_KBYTES)	Average transfer size (in kilobytes) of I/O processing	float	No	HP-UX, AIX, Linux	TOTAL_IO_KBYTES / (READ_OPS + WRITE_OPS)
CPU % (CPU_PERCENT_USED)	Mean of the CPU usage rate (%) divided by the number of processors (in AIX 5L V5.3, the number of processors logically partitioned by micro-partitioning)	float	No	--	(( (USER_CPU_TIME + SYSTEM_CPU_TIME) / total-elapsed-time-of-all-processes-executed-by-workgroup) / processors-count) * 100
Context Switches (CONTEXT_SWITCHES)	Number of times context switch was executed	ulong	Yes	HP-UX, Linux	--
Groups (GROUPS)	Group name list (the last character is > if this list consists of more than 30 characters)	string (30)	No	--	Agent for Platform adds the process group name to this field for each process the workgroup executes.
Interval (INTERVAL)	Interval (in seconds) for storing the Workgroup Summary (PI_WGRP) record	ulong	Yes	--	<ul style="list-style-type: none"> <li>If the delta value is not collected, total of the operating time of each process.</li> <li>If the delta value is collected, RECORD_TIME - previous-record-time.</li> </ul>
Major Faults (MAJOR_FAULTS)	Number of page faults that caused a physical I/O	ulong	Yes	--	--
Process Count (PROCESS_COUNT)	Number of processes the workgroup is running	ulong	No	--	Number of processes in the process table that have user properties, group properties, or program properties that match the workgroup definition

Workgroup Summary (PI_WGRP)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Programs (PROGRAMS)	Program name list (the last character is > if this list consists of more than 30 characters)	string (30)	No	--	Agent for Platform adds the process program name to this field for each process the workgroup executes.
Reads (READ_OPS)	AIX: Number of RAW read operations that occurred.  Solaris: Number of Block read operations that occurred.	ulong	Yes	HP-UX, Linux	--
Reads/sec (READ_OPS_PER_SECOND)	Frequency at which read processes occurred (times per second)	float	Yes	HP-UX, Linux	<i>READ_OPS / total-elapsed-time-of-all-processes-executed-by-workgroup</i>
Real Mem Kbytes (REAL_MEMORY_KBYTES)	Amount of real memory (in kilobytes) in use	ulong	No	--	--
Record Time (RECORD_TIME)	Time at which the record was created (GMT)	time_t	No	--	--
Record Type (INPUT_RECORD_TYPE)	Record type (always WGRP)	char(8)	No	--	--
Swaps (SWAPS)	Number of swap processes that occurred	ulong	Yes	Linux	--
System CPU (SYSTEM_CPU_TIME)	Length of time (in seconds) the CPU operated in kernel mode	utime	Yes	--	--
Throughput/sec (IO_KBYTES_PER_SECOND)	Speed of I/O processes (kilobytes per second)	float	Yes	AIX, Linux	<i>TOTAL_IO_KBYTES / total-elapsed-time-of-all-processes-executed-by-workgroup</i>
Total I/O Kbytes (TOTAL_IO_KBYTES)	Total transfer size (in kilobytes) of I/O processes	ulong	Yes	AIX, Linux	--
Total I/O Ops (TOTAL_IO_OPS)	Number of I/O processes that occurred	ulong	Yes	HP-UX, AIX, Linux	READ_OPS + WRITE_OPS

Workgroup Summary (PI_WGRP)					
View Name (Manager Name)	Description	Format	Delta	Not Supported	Data Source
Total I/O Ops/sec (TOTAL_IO_OPS_PER_SECOND)	Frequency at which I/O processes occurred (times per second)	float	Yes	HP-UX, AIX, Linux	TOTAL_IO_OPS / <i>total-elapsed-time-of-all-processes-executed-by-workgroup</i>
User CPU (USER_CPU_TIME)	Operating time (in seconds) in user mode	utime	Yes	--	--
Users (USERS)	User name list (the last character is > if this list consists of more than 30 characters)	string (30)	No	--	Agent for Platform adds the process user name to this field for each process the workgroup executes.
Virtual Mem Kbytes (VIRTUAL_MEMORY_KBYTES)	Amount of virtual memory (in kilobytes) in use	ulong	No	Solaris	--
Workgroup (WORKGROUP_NAME)	Workgroup name (other if it does not belong to any defined workgroup)	string (30)	No	--	--
Writes (WRITE_OPS)	AIX: Number of RAW write operations that occurred.  Solaris: Number of Block write operations that occurred.	ulong	Yes	HP-UX, Linux	--
Writes/sec (WRITE_OPS_PER_SECOND)	Frequency at which write processes occurred (times per second)	float	Yes	HP-UX, Linux	WRITE_OPS / <i>total-elapsed-time-of-all-processes-executed-by-workgroup</i>

## 2.9.28 Reserved and Unavailable Records

The following records are reserved and unavailable:

- User Data Detail (PD\_UPD)
- User Data Detail - Extended (PD\_UPDB)
- User Data Interval (PI\_UPI)
- User Data Interval - Extended (PI\_UPIB)



# Acronyms and Abbreviations

API	Application Programming Interface
ASCII	American Standard Code for Information Interchange
CGI	Common Gateway Interface
CPU	Central Processing Unit
DID	Device ID
DLL	Dynamic Linking Library
DLPAR	Dynamic Logical Partitioning
DNS	Domain Name System
DR	Dynamic Reconfiguration
FTP	file transfer protocol
HDD	Hard Disk Drive
HTM	HiCommand Tuning Manager
HTTP	HyperText Transfer Protocol
I/O	Input/Output
ICMP	Internet Control Message Protocol
ID	identifier, identification
IIS	Internet Information Services
IP	Internet Protocol
IPF	Itanium <sup>®</sup> 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
LDEV	Logical Device Unit
LU	Logical Unit
LUN	logical unit number
MAPI	Messaging Application Program Interface
MB	megabyte
MTA	Message Transfer Agent
NDIS	Network Driver Interface Specification
NFS	Network File System
NIC	Network Interface Card
NNTP	Network News Transfer Protocol
OS	Operating System
RAID	redundant array of inexpensive disks

S VOL	secondary volume
SDS	Solstice DiskSuite
SMB	Server Message Block
SMP	Symmetric Multi Processor
SMTP	Simple Mail Transfer Protocol
SNMP	Simple Network Management Protocol
SPX	Sequenced Packet eXchange
SSL	Secure Socket Layer
SSO	Single Sign On
Sun Cluster	Sun Microsystems Sun Cluster
SVM	Solaris Volume Manager
TCP	transmission control protocol
UDP	User Datagram Protocol
vPars	Virtual Partitions
VxVM	VERITASTM Volume Manager
WINS	Windows Internet Name Service
WOW 64	Windows on Windows 64
WWN	World Wide Name
WWW	World Wide Web