

PeopleSoft®

Enterprise PeopleTools 8.45
PeopleBook: PeopleSoft
Performance Monitor

Enterprise PeopleTools 8.45 PeopleBook: PeopleSoft Performance Monitor

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About This PeopleBook

PeopleBooks provide you with the information that you need to implement and use PeopleSoft applications.

This preface discusses:

- PeopleSoft application prerequisites.
- PeopleSoft application fundamentals.
- Related documentation.
- Typographical conventions and visual cues.
- Comments and suggestions.
- Common elements in PeopleBooks.

Note. PeopleBooks document only page elements that require additional explanation. If a page element is not documented with the process or task in which it is used, then either it requires no additional explanation or it is documented with common elements for the section, chapter, PeopleBook, or product line. Elements that are common to all PeopleSoft applications are defined in this preface.

PeopleSoft Application Prerequisites

To benefit fully from the information that is covered in these books, you should have a basic understanding of how to use PeopleSoft applications.

See *Enterprise PeopleTools 8.45 PeopleBook: Using PeopleSoft Applications*.

You might also want to complete at least one PeopleSoft introductory training course.

You should be familiar with navigating the system and adding, updating, and deleting information by using PeopleSoft windows, menus, and pages. You should also be comfortable using the World Wide Web and the Microsoft Windows or Windows NT graphical user interface.

These books do not review navigation and other basics. They present the information that you need to use the system and implement your PeopleSoft applications most effectively.

PeopleSoft Application Fundamentals

Each application PeopleBook provides implementation and processing information for your PeopleSoft database. However, additional, essential information describing the setup and design of your system appears in a companion volume of documentation called the application fundamentals PeopleBook. Each PeopleSoft product line has its own version of this documentation.

The application fundamentals PeopleBook consists of important topics that apply to many or all PeopleSoft applications across a product line. Whether you are implementing a single application, some combination of applications within the product line, or the entire product line, you should be familiar with the contents of this central PeopleBook. It is the starting point for fundamentals, such as setting up control tables and administering security.

Related Documentation

This section discusses how to:

- Obtain documentation updates.
- Order printed documentation.

Obtaining Documentation Updates

You can find updates and additional documentation for this release, as well as previous releases, on the PeopleSoft Customer Connection website. Through the Documentation section of PeopleSoft Customer Connection, you can download files to add to your PeopleBook Library. You'll find a variety of useful and timely materials, including updates to the full PeopleSoft documentation that is delivered on your PeopleBooks CD-ROM.

Important! Before you upgrade, you must check PeopleSoft Customer Connection for updates to the upgrade instructions. PeopleSoft continually posts updates as the upgrade process is refined.

See Also

PeopleSoft Customer Connection, <https://www.peoplesoft.com/corp/en/login.jsp>

Ordering Printed Documentation

You can order printed, bound volumes of the complete PeopleSoft documentation that is delivered on your PeopleBooks CD-ROM. PeopleSoft makes printed documentation available for each major release shortly after the software is shipped. Customers and partners can order printed PeopleSoft documentation by using any of these methods:

- Web
- Telephone
- Email

Web

From the Documentation section of the PeopleSoft Customer Connection website, access the PeopleBooks Press website under the Ordering PeopleBooks topic. The PeopleBooks Press website is a joint venture between PeopleSoft and MMA Partners, the book print vendor. Use a credit card, money order, cashier's check, or purchase order to place your order.

Telephone

Contact MMA Partners at 877 588 2525.

Email

Send email to MMA Partners at peoplesoftpress@mmapartner.com.

See Also

PeopleSoft Customer Connection, <https://www.peoplesoft.com/corp/en/login.jsp>

Typographical Conventions and Visual Cues

This section discusses:

- Typographical conventions.
- Visual cues.
- Country, region, and industry identifiers.
- Currency codes.

Typographical Conventions

This table contains the typographical conventions that are used in PeopleBooks:

Typographical Convention or Visual Cue	Description
Bold	Indicates PeopleCode function names, method names, language constructs, and PeopleCode reserved words that must be included literally in the function call.
<i>Italics</i>	Indicates field values, emphasis, and PeopleSoft or other book-length publication titles. In PeopleCode syntax, italic items are placeholders for arguments that your program must supply. We also use italics when we refer to words as words or letters as letters, as in the following: Enter the letter <i>O</i> .
KEY+KEY	Indicates a key combination action. For example, a plus sign (+) between keys means that you must hold down the first key while you press the second key. For ALT+W, hold down the ALT key while you press the W key.
Monospace font	Indicates a PeopleCode program or other code example.
“ ” (quotation marks)	Indicate chapter titles in cross-references and words that are used differently from their intended meanings.
. . . (ellipses)	Indicate that the preceding item or series can be repeated any number of times in PeopleCode syntax.
{ } (curly braces)	Indicate a choice between two options in PeopleCode syntax. Options are separated by a pipe ().

Typographical Convention or Visual Cue	Description
[] (square brackets)	Indicate optional items in PeopleCode syntax.
& (ampersand)	<p>When placed before a parameter in PeopleCode syntax, an ampersand indicates that the parameter is an already instantiated object.</p> <p>Ampersands also precede all PeopleCode variables.</p>

Visual Cues

PeopleBooks contain the following visual cues.

Notes

Notes indicate information that you should pay particular attention to as you work with the PeopleSoft system.

Note. Example of a note.

If the note is preceded by *Important!*, the note is crucial and includes information that concerns what you must do for the system to function properly.

Important! Example of an important note.

Warnings

Warnings indicate crucial configuration considerations. Pay close attention to warning messages.

Warning! Example of a warning.

Cross-References

PeopleBooks provide cross-references either under the heading “See Also” or on a separate line preceded by the word *See*. Cross-references lead to other documentation that is pertinent to the immediately preceding documentation.

Country, Region, and Industry Identifiers

Information that applies only to a specific country, region, or industry is preceded by a standard identifier in parentheses. This identifier typically appears at the beginning of a section heading, but it may also appear at the beginning of a note or other text.

Example of a country-specific heading: “(FRA) Hiring an Employee”

Example of a region-specific heading: “(Latin America) Setting Up Depreciation”

Country Identifiers

Countries are identified with the International Organization for Standardization (ISO) country code.

See Appendix C, “ISO Country and Currency Codes,” ISO Country Codes.

Region Identifiers

Regions are identified by the region name. The following region identifiers may appear in PeopleBooks:

- Asia Pacific
- Europe
- Latin America
- North America

Industry Identifiers

Industries are identified by the industry name or by an abbreviation for that industry. The following industry identifiers may appear in PeopleBooks:

- USF (U.S. Federal)
- E&G (Education and Government)

Currency Codes

Monetary amounts are identified by the ISO currency code.

See *About These PeopleBooks*, “ISO Country and Currency Codes,” ISO Currency Codes.

Comments and Suggestions

Your comments are important to us. We encourage you to tell us what you like, or what you would like to see changed about PeopleBooks and other PeopleSoft reference and training materials. Please send your suggestions to:

PeopleSoft Product Documentation Manager PeopleSoft, Inc. 4460 Hacienda Drive Pleasanton, CA 94588

Or send email comments to doc@peoplesoft.com.

While we cannot guarantee to answer every email message, we will pay careful attention to your comments and suggestions.

Common Elements in These PeopleBooks

As of Date	The last date for which a report or process includes data.
Business Unit	An ID that represents a high-level organization of business information. You can use a business unit to define regional or departmental units within a larger organization.
Description	Enter up to 30 characters of text.
Effective Date	The date on which a table row becomes effective; the date that an action begins. For example, to close out a ledger on June 30, the effective date for the ledger closing would be July 1. This date also determines when

you can view and change the information. Pages or panels and batch processes that use the information use the current row.

Once, Always, and Don't Run

Select Once to run the request the next time the batch process runs. After the batch process runs, the process frequency is automatically set to Don't Run.

Select Always to run the request every time the batch process runs.

Select Don't Run to ignore the request when the batch process runs.

Report Manager

Click to access the Report List page, where you can view report content, check the status of a report, and see content detail messages (which show you a description of the report and the distribution list).

Process Monitor

Click to access the Process List page, where you can view the status of submitted process requests.

Run

Click to access the Process Scheduler request page, where you can specify the location where a process or job runs and the process output format.

Request ID

An ID that represents a set of selection criteria for a report or process.

User ID

An ID that represents the person who generates a transaction.

SetID

An ID that represents a set of control table information, or TableSets. TableSets enable you to share control table information and processing options among business units. The goal is to minimize redundant data and system maintenance tasks. When you assign a setID to a record group in a business unit, you indicate that all of the tables in the record group are shared between that business unit and any other business unit that also assigns that setID to that record group. For example, you can define a group of common job codes that are shared between several business units. Each business unit that shares the job codes is assigned the same setID for that record group.

Short Description

Enter up to 15 characters of text.

See Also

Enterprise PeopleTools 8.45 PeopleBook: PeopleSoft Process Scheduler

Enterprise PeopleTools 8.45 PeopleBook: Using PeopleSoft Applications

PeopleSoft Performance Monitor Preface

This preface introduces the PeopleSoft Performance Monitor.

PeopleSoft Performance Monitor

PeopleSoft Performance Monitor delivers an integrated infrastructure to support the monitoring of performance throughout your PeopleSoft systems.

Readers of this PeopleBook are expected to be familiar with the following:

- PeopleSoft architecture.
- SQL.
- PeopleCode.
- Principles of performance tuning.
- PeopleSoft development tools, such as PeopleSoft Application Designer and PeopleSoft Application Engine.
- General PeopleSoft system administration.

About These PeopleBooks

A companion PeopleBook called About These PeopleBooks contains general information, including:

- Related documentation, common page elements, and typographical conventions for PeopleBooks.
- Information about using PeopleBooks and managing the PeopleBooks Library.
- A glossary of useful PeopleSoft terms that are used in PeopleBooks

CHAPTER 1

Getting Started with PeopleSoft Performance Monitor

This chapter provides an overview of the PeopleSoft Performance Monitor and discusses the implementation requirements.

PeopleSoft Performance Monitor Overview

The PeopleSoft Performance Monitor enables you to monitor your PeopleSoft systems and view real-time and historical performance data. The PeopleSoft Performance Monitor provides the information you need to solve immediate performance issues as well as analyze trends in system performance.

The PeopleSoft Performance Monitor environment is the configuration that enables you to gather diagnostic and analytic insight into the performance of your PeopleSoft application environments.

By default, the PeopleSoft Performance Monitor is disabled on a new PeopleSoft installation. To enable the PeopleSoft Performance Monitor, follow the configuration instructions in this PeopleBook.

Once you have a PeopleSoft application environment running and you have set up the PeopleSoft Performance Monitor, you can then begin to capture and analyze PeopleSoft performance data.

PeopleSoft Performance Monitor Implementation

Before using the PeopleSoft you need to perform some implementation and configuration tasks, in addition to your standard PeopleSoft installation and implementation tasks.

Other Sources of Information

This section provides information to consider before you begin to use PeopleSoft Performance Monitor. In addition to implementation considerations presented in this section, take advantage of all PeopleSoft sources of information, including the installation guides, release notes, PeopleBooks, and training courses.

See Also

[Chapter 3, “Setting Up the PeopleSoft Performance Monitor,” page 15](#)

Enterprise PeopleTools 8.45 PeopleBook: Getting Started with Enterprise PeopleTools, “Getting Started with Enterprise PeopleTools Preface”

Installation-Level Steps

The following steps will need to be completed during installation.

Step	Reference
1. Install Enterprise PeopleTools	Enterprise PeopleTools 8.45 Installation for your platform.
2. Install one or more PeopleSoft applications	Installation documentation for your application(s).

Post Installation-Level Steps

By default, the PeopleSoft Performance Monitor elements are disabled. To enable the PeopleSoft Performance Monitor you need to complete these steps.

Step	Reference
1. Configure appropriate access to the menu items under the PeopleTools, Performance Monitor menu. System administrators will need access to these pages to configure the system and view the pages displaying performance information.	<i>Enterprise PeopleTools 8.45 PeopleBook: Security Administration</i>
2. Configure the monitoring system.	Chapter 3, "Setting Up the PeopleSoft Performance Monitor," Enabling the Required Elements on the Monitoring System, page 15
3. Configure one or more monitored system(s).	Chapter 3, "Setting Up the PeopleSoft Performance Monitor," Enabling the Required Elements on the Monitored System, page 19

CHAPTER 2

Introducing PeopleSoft Performance Monitor

This chapter provides an overview and discusses:

- PeopleSoft Performance Monitor architecture.
- Implementation options.
- PeopleSoft Performance Monitor instrumentation.
- PeopleSoft Performance Monitor integration with third parties.
- PeopleSoft Performance Monitor data.
- Scope of the PeopleSoft Performance Monitor.

Understanding PeopleSoft Performance Monitor

Historically, system administrators have spent significant amounts of time and resources identifying causes of performance issues. In many cases, performance issues are solved using trial and error techniques or simple intuition. Also, system administrators often enabled tracing and examined the results in application server trace files. The disadvantage of this approach was the significant system overhead required to write the performance information to these trace files, which limited the times that system administrators could enable tracing. As such, many performance problems were not detected in real-time.

PeopleSoft provides the PeopleSoft Performance Monitor so that system administrators can monitor PeopleSoft performance data and share the data with third party monitoring tools if desired. The PeopleSoft Performance Monitor is a diagnostic utility that enables you to monitor performance of the main elements of your PeopleSoft system, such as web servers, application servers, and Process Scheduler servers. You can monitor real-time performance as well as analyze historical data.

PeopleSoft Performance Monitor reports:

- Durations and key metrics of PeopleTools runtime execution, such as SQL statements and PeopleCode events.
- Key resource metrics, such as host CPU utilization and web server execution threads.

See [Chapter 2, “Introducing PeopleSoft Performance Monitor,” Understanding PeopleSoft Performance Monitor Instrumentation, page 11](#).

The metrics provided by PeopleSoft Performance Monitor enable system administrators to:

- Monitor real-time system performance.
- Identify poorly performing tiers, hosts, domains, servers, application code, and SQL in a PeopleSoft environment.
- Identify performance trends.
- Address and isolate performance bottlenecks.

The following are some of the ways PeopleSoft Performance Monitor can improve the efficiency of your online system:

- Decrease implementation costs.

PeopleSoft Performance Monitor can streamline the isolation of performance issues during initial implementation, in production systems, and during upgrades.

- Decrease need for scarce IT skills.

Many organizations, especially smaller organizations, typically do not have the IT resources to complete the highly skilled and analytical tasks associated with identifying performance issues, nor do they have third party monitoring tools in place. PeopleSoft Performance Monitor provides basic and effective system monitoring capabilities from within PeopleTools.

- Improve operational communication.

If PeopleSoft consulting or support needs to be contacted, the metric results provided by the PeopleSoft Performance Monitor greatly enhance your ability to express exactly where the problem lies within your system. This enables the PeopleSoft staff to more effectively pinpoint the performance issue.

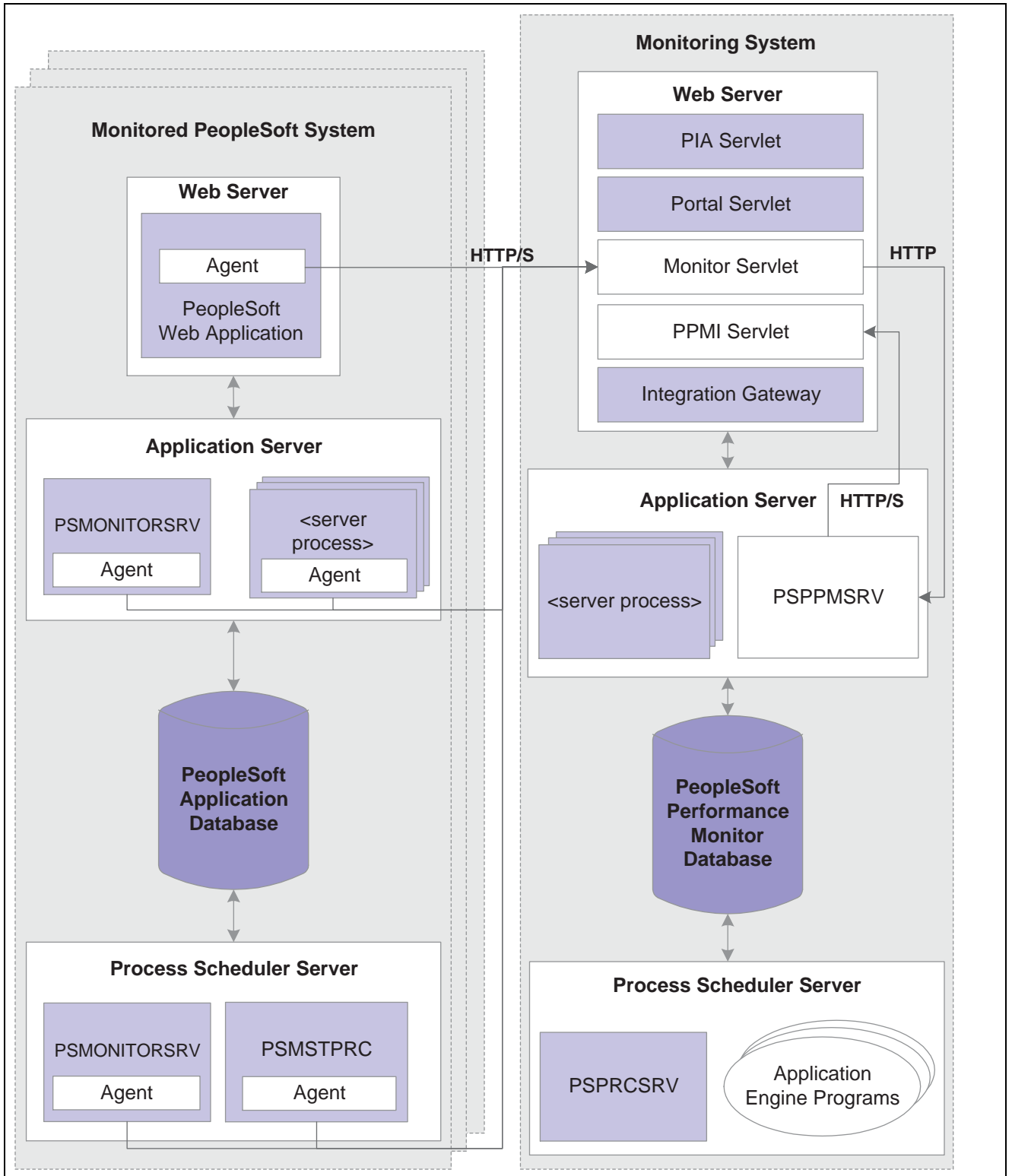
- Provide operational metrics.

Enables IT staff to spot performance trends performance and answer questions, such as the average number of users on a system, average response times, number of server trips executed per day, and so on.

Note. PeopleSoft Performance Monitor enables you to isolate and identify the causes of performance issues, however, it does not provide automatic solutions to performance issues.

Viewing the PeopleSoft Performance Monitor Architecture

The following diagram illustrates the main elements of the PeopleSoft Performance Monitor.



PeopleSoft Performance Monitor Architecture

A logical distinction must be made between a *monitored system* and the *monitoring system*.

A monitored system can be monitored by one, *and only one*, monitoring system. A monitoring system can monitor one or more PeopleSoft application systems. You can also configure a self-monitoring system for development and testing.

Understanding the Monitored System

The monitored system is the PeopleSoft application system for which you are monitoring performance. The monitored system consists of the following main elements:

- PeopleSoft application database.
- Application server.
- Web server.
- Process Scheduler server.

Note. An application server is also known as a "business logic server" in some PeopleSoft materials. However, in this PeopleBook, only the term "application server" appears.

PeopleSoft Performance Monitor agents reside on each main element of the monitored system. Agents run on the servers to gather and report performance information. An agent is a small piece of code operating from within an existing process. It collects performance data and uses a dedicated thread to send the data to the monitoring system. Agent threads report data to the monitoring system's monitor servlet, which in turn reports XML formatted performance data to the PSPPMRSRV server processes in the monitoring system's application server.

There are two types of agents.

- *Process instrumentation agents.* These agents report data about the specific activities that the server is processing.
- *Domain resource agents.* These agents report resource usage statistics about the process and server, such as CPU usage.

PeopleSoft Application Database

The database for the monitored system is the database for your PeopleSoft application, such as the Human Capital Management database or the Customer Relationship Management database.

Note. PeopleSoft Performance Monitor *does not* monitor the performance of the RDBMS or the server on which it runs.

Application Server

The application server domain for the monitored system contains the following elements related to PeopleSoft Performance Monitor:

PeopleSoft Performance Monitor Element	Description
Server process agents	<p>There is one agent for each of the following server processes running within an application server domain:</p> <ul style="list-style-type: none"> • PSAPPSRV • PSQCKSRV • PSQRYSRV • PSMONITORSRV • PSSAMSRV
Domain Monitor (PSMONITORSRV)	<p>The domain monitor runs in the PSMONITORSRV application server process. It monitors:</p> <ul style="list-style-type: none"> • Host resource usage. • BEA Tuxedo performance metrics. <p>Note. The domain monitor also monitors its own resource consumption.</p>

Web Server

The web server contains the following elements related to the PeopleSoft Performance Monitor:

PeopleSoft Performance Monitor Element	Description
Web server agents	<p>Reports performance metrics from the instrumented code. The system starts a web server agent for a site after the site gets accessed for the first time.</p>
Domain Monitor	<p>Reports resource events related to the web server usage. There is one resource monitor for each system hosted in each web application on each web server.</p>

Process Scheduler Server

The Process Scheduler for the monitored system contains the following elements related to PeopleSoft Performance Monitor:

Component	Description
Server process agent	<p>On the Process Scheduler server, only the Master Scheduler process, PSMSTPRC, has a server process agent recording performance data. The PSMSTPRC agent reports batch summary metrics, such as the number of and types of queued tasks.</p> <p>Note. Performance information of this type is only available if a Master Scheduler is configured to run on the system.</p>
Domain Monitor (PSMONITORSRV)	<p>The domain monitor runs in the PSMONITORSRV server process. It monitors:</p> <ul style="list-style-type: none"> • Host resource usage. • BEA Tuxedo performance metrics. <p>Note. The domain monitor also monitors its own resource consumption.</p>

Understanding the Monitoring System

The monitoring system is comprised of the elements designed to collect, store, and display PeopleSoft performance data. Like the monitored system, the monitoring system includes the following elements:

- PeopleSoft Performance Monitor database.
- Application server.
- Web server.
- Process Scheduler server.

PeopleSoft Performance Monitor Database

The database for the monitoring system requires at least the PeopleTools System database (PTSYS) you create during an initial PeopleSoft installation. This database contains all of the necessary PeopleSoft objects and definitions required to store and display PeopleSoft performance data.

Note. The space required to store performance data requires increased tablespace sizes, especially in PSIMGR and the associated index tablespace.

Note. Any PeopleSoft system can act as a monitor for any other PeopleSoft system or for itself.

See [Chapter 2, “Introducing PeopleSoft Performance Monitor,” Considering Implementation Options, page 10.](#)

Application Server

The application server on the monitoring system contains the following elements related to PeopleSoft Performance Monitor.

PeopleSoft Performance Monitor Element	Description
PSAPPSRV	<p>The PSAPPSRV server process functions just as the PSAPPSRV process functions on any PeopleSoft Application Server. In addition, it advertises PeopleSoft Performance Monitor services used by the PeopleSoft Performance Monitor servlets to retrieve configuration and security data.</p> <p>At least two PSAPPSRV processes are required by the PeopleSoft Performance Monitor. This ensures that:</p> <ul style="list-style-type: none"> • The system can publish notifications of configuration changes through the PeopleSoft Integration Broker gateway. • The PPMI servlet can contact the application server to retrieve the configuration changes.
PSPPMSRV	<p>The PSPPMSRV subscribes to performance data sent by the monitor servlet of the monitoring system, and receives XML messages containing performance data, which it inserts into the monitoring database.</p> <p>Note. The PSPPMSRV does not receive any data directly from agents running on the monitored system.</p>

Web Server

The web server on the monitoring system contains the following elements related to the PeopleSoft Performance Monitor:

PeopleSoft Performance Monitor Element	Description
PIA (psc) and Portal (psp) servlets	These servlets are the main PeopleSoft servlets that handle browser requests. Administrators use PeopleSoft pages to view performance information or set configuration options for a monitoring system.
Monitor (monitor) servlet	The monitor servlet receives all of the data sent by each agent running on the monitored system and relays it to the PSPPMSRV processes.
PeopleSoft Performance Monitor Integration (ppmi) servlet	The PPMI servlet accepts and authenticates registration requests from PSPPMSRV processes to establish an HTTP pathway for receiving data from the monitor servlet.
Integration Broker gateway (PeopleSoftListeningConnector) servlet	<p>The gateway servlet is used to notify the monitor servlet of any configuration changes. The monitor servlet, in turn, notifies the agents running on the monitored system of any configuration changes the next time the agents interact with the monitor servlet.</p> <p>Note. This is the same servlet used by PeopleSoft Integration Broker to handle integration messages.</p>

Process Scheduler Server

The Process Scheduler server for the monitoring system fulfills the following functions:

PeopleSoft Performance Monitor Element	Description
PeopleSoft Application Engine	<p>You can schedule or invoke a variety of PeopleSoft Application Engine programs that maintain the data in your monitoring database.</p> <p>See Chapter 4, “Administering the PeopleSoft Performance Monitor.” page 23.</p>

Considering Implementation Options

There are two options for implementing the PeopleSoft Performance Monitor:

- Self-monitoring system.
- Production monitoring system.

Understanding the Self-Monitoring Monitoring System

In a self-monitoring system, the same database that serves the PeopleSoft application is also being used to store the performance data. By default, all the elements required for the PeopleSoft Performance Monitor are installed during the PeopleSoft server installations. So, implementing the self-monitoring system requires no additional installation steps.

While this system may require less hardware, the potential impact to your online applications must be considered. Keep in mind that the same database engine is being used to store and retrieve performance data, and the same web server and application server may be used to monitor and collate performance data.

Note. The self-monitoring configuration is *not* supported for a production environment. The self-monitoring configuration is not designed for a production environment as it effects online transaction processing and overall system performance.

Typically, the self-monitoring system is used in the following situations:

- Development.
- Testing.
- Training.

Note. The PeopleSoft Performance Monitor has been designed so that a monitoring system does not encounter an infinite loop in a self-monitoring configuration.

Understanding the Production Monitoring System

With a production monitoring system, you configure a separate PeopleSoft system complete with web server, application server, and database server to act solely as a performance monitoring system. This is the recommended configuration for monitoring your production systems. Any PeopleTools system database delivered with PeopleSoft contains the appropriate database definitions to store and retrieve all PeopleSoft Performance Monitor data.

With the separate monitoring system you can monitor a single PeopleSoft system, such as your PeopleSoft Human Capital Management system, or you can configure it to monitor multiple PeopleSoft systems.

Note. PeopleSoft Performance Monitor can monitor any PeopleSoft system running on PeopleTools 8.44 or above. Always consult PeopleTools Release Notes and PeopleBooks to become aware of any exceptions or unsupported features between release levels.

Understanding PeopleSoft Performance Monitor Instrumentation

This section explains the terminology associated with the PeopleSoft Performance Monitor instrumentation. "Instrumentation" refers to the modifications made to internal PeopleSoft programming code that enables the system to report performance data to a monitor. Select areas of PeopleTools runtime source code have been instrumented.

When the system executes instrumented code, it generates time-stamped performance metrics relevant to that section of code. Agents running on the monitored system send the performance data to the PeopleSoft Performance Monitor.

Instrumentation generates:

- Performance measurement units (PMUs).
- Events.

Understanding Performance Measurement Units (PMUs)

A PMU is a unit of measurement that reflects the execution of a section of code. The system starts and stops a PMU at specific code locations, and the system may update a PMU anytime between the start and stop times. PeopleTools has defined a set of PMU types, and each type of PMU corresponds to the instrumentation at a specific code location, such as a SQL Execute in PSAPPSRV or a Jolt Request in the web server.

Each PMU includes:

- PMU Type.
- Instance identifier. (a unique identifier for a specific PMU instance)
- Start time.
- Stop time.
- Status.
- Metrics (such as, number of SQL fetches or buffer size used in a Jolt response).

See [Chapter 10, "Working with Performance Monitor Meta-Data," Understanding PMU Definitions, page 133.](#)

Open PMUs are those that are currently processing. These are PMUs for which a "stop" has not yet been received. Completed PMUs are those for which a "stop" has been received.

PMUs can assume a parent-child relationship. Child-PMUs start within a parent-PMU. Child-PMUs are linked to their parent by the parent instance ID. You can view PMUs within a tree structure that reveals the hierarchy of parent-child PMUs and indicates the processing times at each level.

Understanding Events

Events are notifications containing performance metrics that are different from PMUs in that they are not hierarchical, and they do not have durations. Events relate to resource usage, such as CPU usage or memory allocation. PeopleTools has defined a set of event types, and each type of event is reported at a specific location in the instrumented code.

Each event has the following:

- Type.
- Instance Identifier. (a unique identifier for a specific event instance)
- Timestamp.
- Severity.
- Metrics (such as CPU usage and memory allocation).

See [Chapter 10, "Working with Performance Monitor Meta-Data," Understanding Event Definitions, page 132.](#)

Sharing PeopleSoft Performance Data with Third Party Systems

Using web service technology, performance data generated by the PeopleSoft Performance Monitor can be shared with third party performance monitoring tools by way of the PeopleSoft Performance Monitor Integration (PPMI) API. The PPMI API uses the Simple Object Access Protocol (SOAP).

Note. The PPMI API protocol is *not* documented in PeopleBooks. It is only used in products developed by PeopleSoft system and performance management integration partners. You can use the PPMI API only if you are licensed through PeopleSoft.

Viewing the PeopleSoft Performance Monitor Data

After the PeopleSoft Performance Monitor is configured to retrieve and store data into the performance database tables, you can view the performance data using a variety of PeopleSoft pages that:

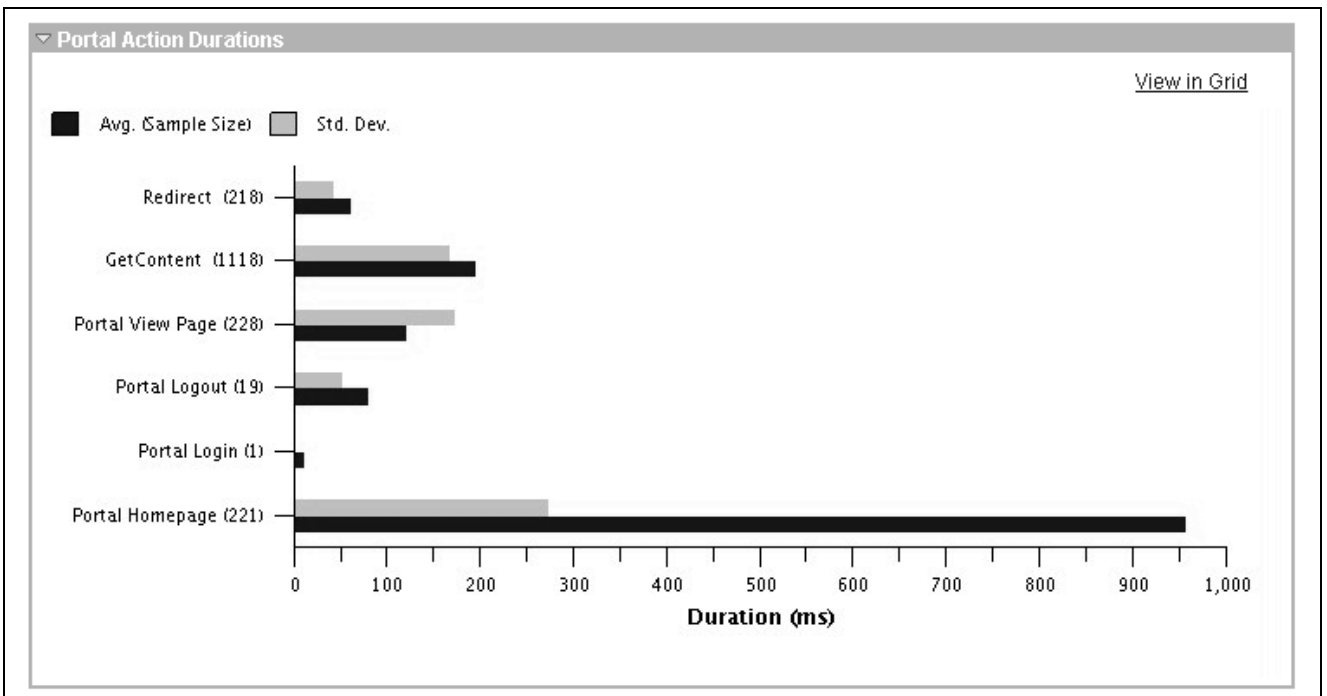
- provide a summary of performance data.
- present raw performance data.
- display information in charts.

You can access all of the pages related to PeopleSoft Performance Monitor using the PeopleTools, Performance Monitor menu. Some performance information appears in grids.

Monitored Servers						
Metrics		Events and PMUs				
Server	Server Instance	PID	Agent Date/Time	%CPU Used	CPU Time (secs)	VM (bytes)
PSMONITORSRV	1	4140	11/16/2003 11:06:38PM	0	26.14	274948096
PSAPPSRV	2	2052	11/16/2003 11:04:45PM	11	254.734	340623360
PSAPPSRV	1	2880	11/16/2003 11:05:39PM	0	21.562	278372352
PSSAMSRV	100	1756	11/16/2003 11:03:53PM	0	84.186	274743296
PSAPPSRV	3	3040	11/16/2003 11:08:06PM	0	96.812	333246464
PSQRYSRV	70	4192	11/16/2003 11:03:39PM	0	45.437	279420928
PSSAMSRV	101	1800	11/16/2003 11:05:06PM	0	77.327	274743296
PSSAMSRV	102	4228	11/16/2003 11:04:12PM	0	92.967	273629184

Viewing Grids

While other performance information appears in charts.



Viewing Charts

If you prefer to view chart information in grids for sorting and downloading to Microsoft Excel, you have that option.

Working Within the Scope of PeopleSoft Performance Monitor

The PeopleSoft Performance Monitor provides performance metrics for:

- PeopleSoft Application Server processes (including SQL, PeopleCode, and Cache management).
- Web server servlet performance.

- Host resource usage.
- Master Scheduler performance.
- BEA Tuxedo performance.

Note. This list contains the only elements monitored by PeopleSoft Performance Monitor.

CHAPTER 3

Setting Up the PeopleSoft Performance Monitor

This chapter contains an overview section, and discusses how to:

- Enable the required elements on the monitoring system.
- Enable the required elements on the monitored system.

Understanding the Configuration of the PeopleSoft Performance Monitor

The configuration of the PeopleSoft Performance Monitor involves enabling the required elements on the monitored system and the monitoring system.

Once you have installed the PeopleTools CD and transferred the appropriate files to your web server, application server, and Process Scheduler server all of the required elements are in place. You do not need to install additional modules for the PeopleSoft Performance Monitor.

Note. If you are setting up a self-monitoring system, the monitored system and the monitoring reside on the same host machine.

Enabling the Required Elements on the Monitoring System

This section covers the configuration of your monitoring system, which includes:

- Setting up the PeopleSoft Performance Monitor database.
- Setting up the application server.
- Setting up the web server.
- Setting up Process Scheduler server.
- Creating a PPMI User ID.
- Specifying the PPMI URL.
- Specifying the Integration Gateway URL.

Setting up the PeopleSoft Performance Monitor Database

The monitoring database requires the use of at least the PeopleTools System (PTSYS) database for the production monitoring system. Set this database up using the instructions in the PeopleTools 8.45 Installation Guide.

Note. For the self-monitoring configuration, use the application database for your system. The application must be running on at least PeopleTools 8.44.

See Also

Add link to the section where the loop back/production systems are discussed.

Enterprise PeopleTools 8.45 Installation for your platform

Setting up the Application Server

The application server on the monitoring system requires the following server processes enabled:

- Typical application server processes included in a default configuration.
- PSPPMRSRV.

Default Server Processes

A typical default application server configuration is suitable for PeopleSoft Performance Monitor activity.

The PSAPPSRV server process is the main server process of the PeopleSoft Application Server.

At least two PSAPPSRV must be enabled. This ensures that the monitoring system can publish notifications of configuration changes through the PeopleSoft Integration Broker gateway. You can enable more PSAPPSRVs to meet increased demand.

See *Enterprise PeopleTools 8.45 PeopleBook: System and Server Administration*, “Setting Application Server Domain Parameters,” PSAPPSRV Options.

PSPPMRSRV

The PSPPMRSRV process receives the performance data from the monitor servlet and inserts it into the monitoring database.

The following table describes the ways you can enable this server process using the PeopleSoft Server Administration interface (PSADMIN).

Method	Description
Quick Configure menu	You can use the Quick Configure menu in PSADMIN to enable the PSPPMRSRV server process. Enable the <i>Perf Collator</i> option.
Custom Configuration menu	After you have scrolled through all of the configuration sections of the PSADMIN menu, the system prompts you to enable a variety of options. One of these prompts relates to enabling the PSPPMRSRV server process. When prompted with the following: Do you want Performance Collators configured? (y/n) Enter y to indicate Yes.

To add additional PSPPMRSRV server processes, use the [PSPPMRSRV] configuration section in PSADMIN and adjust the settings. The [PSPPMRSRV] configuration section contains the following parameters.

Min Instances

Enter the minimum number of PSPPMRSRV server processes that you want to start when the application server boots.

Max Instances Enter the maximum number of PSPPMSRV server processes that you want to start when the application server boots.

Note. For the PSPPMSRV server process, the values assigned to Min Instances and Max Instances must be equal. For example, if you want three PSPPMSRV server processes to start, set Min Instances=3 and Max Instances=3. Unlike PSAPPSRV, Tuxedo does not handle load balancing between PSPPMSRVs. Decide how many PSPPMSRV instances you need operating within the appropriate number of domains and boot all of them.

If you have more than one PSPPMSRV configured, the monitor servlet automatically implements load balancing across the multiple PSPPMSRVs. Also, if you configure multiple application server domains, each with its own PSPPMSRV's, the monitor servlet automatically implements load balancing and failover across the domains.

See Also

Enterprise PeopleTools 8.45 PeopleBook: System and Server Administration, “Using the PSADMIN Utility”

Setting up the Web Server for the Monitoring System

By completing the Internet portion of the PeopleSoft Multi-Platform Installer program, you have installed all of the elements that PeopleSoft Performance Monitor requires on the web server. No additional installation procedures are required.

PeopleSoft Performance Monitor servlets are not activated unless PSPPMSRVs register with them. Agent connections to a monitor are rejected until a PSPPMSRV on the monitoring system registers.

The PeopleSoft Performance Monitor servlets that run on the web server of the monitoring system are:

- Monitor servlet.
- PPMI servlet.

Note. Make note of the URL of the web server for the monitoring system. On the monitored system, you need to specify the appropriate URL to which to send performance data.

Note. If you elect to implement a production monitoring system, PeopleSoft recommends that you set up the monitoring system itself in self-monitoring mode so that you can detect alarm events generated from the monitoring web server. That is, while the monitoring system monitors one or more PeopleSoft application systems, it also monitors itself.

If you need to configure multiple web servers for scalability and failover, you need to configure a cluster.

See Also

[Chapter 4, “Administering the PeopleSoft Performance Monitor,” Setting Global System Options, page 25](#)

Creating a PPMI User ID

The PSPPMSRV application server process acts as the PPMI client when you record PeopleSoft performance data. In order to register as a client, the PSPPMSRV requires the appropriate permissions in PeopleTools Security.

Warning! Setting up PSPPMSRV authentication is required.

To set up PPMI Authentication:

1. Create a user profile with the name of your choice using PeopleTools Security.
See *Enterprise PeopleTools 8.45 PeopleBook: Security Administration*, “Administering User Profiles”.
2. Add the delivered *PeopleTools Perfmon Client* role to the user profile.
The *PeopleTools Perfmon Client* role contains the PTPMCLNT permission list.
3. Select PeopleTools, Performance Monitor, Administration, Global Administration and enter the user profile you created and the associated password in the PPMI User ID and PPMI Password text boxes.

Specifying the PPMI URL and PPMI User ID

PSPPMSRV processes must register with the PPMI servlet using the PPMI URL. The PSPPMSRV processes use the PPMI URL stored in the monitoring system’s database to locate the PPMI servlet for registration.

The PSPPMSRV servers periodically read the PPMI value to determine the PPMI URL. When it is set to *NONE*, the monitoring system is disabled, which means the PSPPMSRVs do not insert performance data into the monitoring database.

The PPMI User ID is required to authenticate the PSPPMSRV so that it can subscribe to performance data.

To specify the PPMI URL and PPMI User ID:

1. Make sure you have created a PPMI user ID with the appropriate permissions (as described in the previous section).
2. Select PeopleTools, Performance Monitor, Administration, Global Administration.
3. On the Performance Monitor Administration page, enter the appropriate value in the PPMI URL edit box.
The format is: *http[s]://host[:port]/ppmi/[site]/*
For example: *http://server1.peoplesoft.com/ppmi/ps/*.
Where *ps* is the name of the PeopleSoft site.
4. Specify the PPMI User ID and password.
5. Click Save.
6. Click Ping Test to ensure that the URL you entered is valid and the URL is available.

See Also

[Chapter 9, “Understanding PeopleSoft Performance Monitor Security Considerations,” page 123](#)

Specifying the Integration Gateway URL

A gateway URL needs to be specified so that the monitoring system can notify the monitor servlet of configuration changes. The monitoring servlet in turn notifies the monitored agents of these changes when they next communicate with the servlet.

When specifying the gateway URL:

- Select LOCAL gateway.
- Enter this URL in the following format: *http://<server>/PSIGW/PeopleSoftListeningConnector*.

See Also

Enterprise PeopleTools 8.45 PeopleBook: PeopleSoft Integration Broker, “Managing Integration Gateways”

Setting up the Process Scheduler Server for the Monitoring System

To invoke Performance Monitor Application Engine programs to maintain the performance data, set up a Process Scheduler server that connects to your monitoring database.

To set up a Process Scheduler server, follow the instructions provided in your Enterprise PeopleTools Installation Guide.

See Enterprise PeopleTools 8.45 Installation for your platform.

The delivered PeopleSoft Application Engine programs you schedule to run as part of PeopleSoft Performance Monitor administration enable you to:

- Maintain the current PMU table (the PSPM_REAPER program).
- Archive or delete historical performance data (the PSPM_ARCHIVE program).
- Manage the lookup tables in the PeopleSoft Performance Monitor interface (the PSPM_LOOKUP program).

See Also

Enterprise PeopleTools 8.45 Installation for your platform.

[Chapter 4, “Administering the PeopleSoft Performance Monitor,” page 23](#)

Enabling the Required Elements on the Monitored System

This section covers enabling the required elements on the monitored system, which is the system for which you intend to collect performance data. A monitored system requires the following items to be in place:

- PeopleSoft application database.
- Web server agent.
- Application server domain manager and agents.
- Process Scheduler server domain manager and agents.
- Valid monitor servlet URL value.

Setting Up the Database of the Monitored System

As long as your PeopleSoft application is running against your PeopleSoft database, there is no further database configuration required for the PeopleSoft Performance Monitor.

Note. The database must be running on PeopleTools 8.44 or higher.

Specifying the Monitor URL

Specifying a monitor URL enables the PeopleSoft Performance Monitor agents and identifies the monitor servlet.

The agents on the monitored system check the Monitor URL value periodically. When the Monitor URL value is set to *NONE*, the PeopleSoft Performance Monitor components on the monitored system are disabled.

The Monitor URL value must reflect the URL of the monitor servlet running on the monitoring system.

To specify the Monitor URL:

1. Select PeopleTools, Performance Monitor, Administration, Specify Monitor.
2. On the Specify Monitor page, enter the appropriate value in the Monitor URL edit box.
The format of the URL is: *http[s]://host[:port]/monitor/[site]/or NONE*.
For example, enter *http://server2.peoplesoft.com/monitor/ps/*.
Where *ps* is the name of the PeopleSoft site.
3. Click Save.
4. Click Ping Test to ensure that you entered a valid URL and that the URL is available.

Setting Up the Web Server of the Monitored System

There is no additional installation procedure required.

When the monitor URL value is populated, agents on every PeopleSoft site automatically become active and begin relaying performance data to the monitoring system.

Note. Ensure that the Enable PPM Agents option is selected on the General tab of the appropriate web profile. By default, this option *is* enabled.

Note. If you start the web server in safe mode, then the monitoring agents in the web server are disabled.

Setting up the Application Server

The following components run and are monitored on the application server of the monitored system:

- Domain monitor: PSMONITORSRV.
- PSAPPSRV agent(s).
- PSQCKSRV agent(s).
- PSQRYSRV agent(s).
- PSSAMSRV agent(s).

There are no installation or configuration procedures required.

When the monitored system is enabled, agents in every instrumented server process automatically become active and begin relaying performance data to the monitoring system.

Note. Ensure that the EnablePPM Agent parameter in the [PSTOOLS] section of PSADMIN is enabled. By default, it *is* enabled.

Setting up the Process Scheduler Server

The following components run and are monitored on the Process Scheduler server of the monitored system:

- Domain monitor (PSMONITORSRV).
- PSMSTPRC agent(s).

There are no installation or configuration procedures required.

When the monitored system is enabled, agents in instrumented server processes automatically become active and begin relaying performance data to the monitoring system.

Note. Ensure that the EnablePPM Agent parameter in the [PSTOOLS] section of PSADMIN is enabled. By default, it *is* enabled.

CHAPTER 4

Administering the PeopleSoft Performance Monitor

This chapter contains an overview section and discusses how to:

- Set global system options.
- Work with system definitions.
- View agent definitions.
- Set agent filter options.
- Schedule the reaper program.
- Schedule performance data archiving.
- Populate PeopleSoft Performance Monitor lookup tables.
- Work with PeopleSoft Performance Monitor tables.
- Disable PeopleSoft Performance Monitor agents.
- Trace PeopleSoft Performance Monitor agents.
- Trace the Monitor and PPMI servlets
- Configure performance monitoring sampling rate.
- View monitor servlet diagnostics.

Understanding PeopleSoft Performance Monitor Administration

This section provides an overview of PeopleSoft Performance Monitor administration and discusses the navigation and usage of the pages related to PeopleSoft Performance Monitor administration.

Performing PeopleSoft Performance Monitor Administration

PeopleSoft Performance Monitor administration includes:

- Specifying global settings.
- Viewing performance definitions such as those related to systems, agents, metrics, and so on.
- Setting system defaults.
- Scheduling batch programs that maintain performance data.

Pages Used for PeopleSoft Performance Monitor Administration

Page Name	Object Name	Navigation	Usage
Global Administration	PSPMMONITORGBL	PeopleTools, Performance Monitor, Administration, Global Administration	View and modify global administration settings, such as the PPMI URL value and monitor servlet clusters.
System Defaults	PSPMSYSDEFAULTS	PeopleTools, Performance Monitor, Administration, System Defaults	Set global system defaults for all monitored systems.
System Definitions	PSPMSYSDEFN	PeopleTools, Performance Monitor, Administration, System Definitions	View and modify the system definition associated with each of the systems being monitored. For example, you can set archive, PMU timeout, and agent buffer size.
Agent Definitions	PSPMAGENT	PeopleTools, Performance Monitor, Administration, Agent Definitions	View the definitions of the agents running on the monitored system's application server, web server, and Process Scheduler servers. It also enables you to disable the display of agent information.
Agent Filters	PSPMAGENTFILTER	PeopleTools, Performance Monitor, Administration, Agent Filters	Set the filter levels for the agents running on the monitored system. The filter level determines the amount and granularity of the performance data reported by an agent.
Schedule Reaper	PSPMREAPERUNCNTL	PeopleTools, Performance Monitor, Administration, Schedule Reaper	Enables you to schedule the PeopleSoft Application Engine reaper program that is designed to maintain the integrity of the performance data in your monitoring system.
Schedule Archive	PSPMARCHIVERUNCNTL	PeopleTools, Performance Monitor, Administration, Schedule Archive	Enables you to schedule the PeopleSoft Application Engine archive program that is designed to archive or purge the performance data in your system.

Page Name	Object Name	Navigation	Usage
Schedule Lookup Maintenance	PSPMLOOKUPRUNCNTL	PeopleTools, Performance Monitor, Administration, Schedule Lookup Maintenance	Enables you to schedule the PeopleSoft Application Engine program that is designed to maintain the lookup lists associated with the PeopleSoft Performance Monitor interface. The lookup maintenance program ensures that the lookup lists are populated with current lookup options.

Setting Global System Options

Access the Performance Monitor Administration page.

Global Administration page

PPMI URL

The PPMI URL stored in the monitoring system’s database is used by PSPPMSRV processes to locate the PPMI servlet with which to register.

The format of the URL is: `http[s]://<host[:port]>/ppmi/<site_name>/`

For example,

`http://server1.peoplesoft.com/ppmi/ps/`

After you specify this URL value it is stored in the URL catalog under the following ID: PPM_PPMI.

Note. If you select HTTPS, then the PSPPMSRV's use SSL encryption when sending the PPMI user ID and password to the PPMI servlet, but performance data sent from the PPMI servlet to PSPPMSRV is not encrypted. Because the data is not encrypted, the PSPPMSRV and the monitor servlet should reside in a secure network environment.

Note. Use the Ping Test button to verify that you have entered a valid URL and that the URL is available.

PPMI User ID

The PSPPMSRV server processes pass this user ID and password to the PPMI servlet. The servlet verifies that the user ID and password are valid, and that the user has permission to access the PPMI servlet.

The user ID you specify must have a permission list with Performance Monitor PPMI Access selected in its PeopleTools permissions. PeopleTools recommends using the PTPMCLNT permission list, shipped expressly for this purpose.

Note. The PPMI User ID and PPMI Password values are required.

See [Chapter 9, "Understanding PeopleSoft Performance Monitor Security Considerations," page 123](#).

PPMI Password

The password associated with the PPMI user ID.

Archive: Clear PMUs and Events

Indicates to the archive program to delete all of the performance history data currently stored in the monitoring database. This is either in the form of an unqualified DELETE on the history tables, or for those platforms for which it is supported, the tables are truncated.

Note. By selecting this option, the delivered archive program deletes all of the performance history data for *every* monitored system.

Note. Deleting and truncating performance data may cause the current user count to appear artificially low. The system bases the count on events found in the PSPMEVENTHIST table, and rows from this table may be deleted during the archive process.

Note. This option overrides any archive mode option set on the System Definition page.

See [Chapter 4, "Administering the PeopleSoft Performance Monitor," Modifying System Definitions, page 28](#).

Collator Row Limit

Limits the amount of data that can be inserted into the PeopleSoft Performance Monitor tables. Collators (PSPPMSRVs) periodically count the number of rows in each of the performance tables. If the total count of rows in PSPMTRANSHIST, PSPMTRANSCURR, and PSPMEVENTHIST is higher than this value, the PSPPMSRV does not insert any more rows into these

tables until the number of rows deleted (by the archive program and/or reaper program and/or manual intervention) brings the row count below this limit. If you set this value to 0, the PSPPMSRVs do not check for a row limit.

Note. If the row limit is reached, the System Performance page will report that the agents on the monitored system have stale agent data.

Search Row Limit

Limits the number of rows returned and displayed in searches initiated from PeopleSoft Performance Monitor pages. The system imposes this limit on all users who access the monitoring system.

Performance Monitor Cluster

To provide failover and scalability, performance monitor servlets on multiple web servers can be configured as a cluster. Entering the cluster information in the Performance Monitor Cluster grid enables the load-balanced monitor and PPMI servlets to share client registration information so that PSPPMSRV instances need not be aware of the cluster configuration.

Click Save and Notify Cluster to notify the cluster if you have added or removed a cluster member.

Click Ping Test to verify that you have entered a valid URL and that the URL is available.

See "Setting up Monitoring Clusters" below.

Setting System Definition Defaults

Access the System Defaults page.

The System Defaults page enables you to set default values for all of the monitored systems. If you intend to monitor numerous systems, you can set the default values you need for a system. When a new systems register with the monitoring system for the first time, the system adopts the default values you have set.

Using the System Defaults page enables you to set global values for each monitored system rather than modifying the values for each system separately.

Note. Except for the following page elements, the System Defaults page is identical to the System Definitions page, which is documented in the following section.

Agent Filter Level

Enables you to set the agent filter level for the agents of monitored systems. The default setting is 01–Standby, which means the monitored system sends no performance information to the monitoring system.

See [Chapter 4, “Administering the PeopleSoft Performance Monitor,” Setting Agent Filter Options, page 32.](#)

Apply to Current Systems

Notifies the agents running in *existing* systems of the global configuration changes. Once the agents of the existing monitored systems are notified, the existing systems adopt the new, default values.

See Also

[Chapter 4, “Administering the PeopleSoft Performance Monitor,” Modifying System Definitions, page 28](#)

Note. When copying databases, it is extremely important to delete the GUID in the new (copied) database. If the new database is monitored by the same instance of the PeopleSoft Performance Monitor monitoring the source database, the monitor assumes that the agents for both systems belong to the same system. This not only doubles the data being stored for a particular system, but also makes it unreliable. To resolve this, set the value of the GUID field in the PSOPTIONS table to <space> in the new database. The next time an application server connects to the database, the system generates a new, unique GUID. You insert the blank value in the PSOPTIONS table using the SQL tool at your site.

Description

A description of the monitoring system to assist recognition. The default value is the database name.

Archive Mode

The archive mode you set specifies how the archive program (PSPM_ARCHIVE) should process the performance data stored in the monitoring database. The default value is set to archive nothing after zero days.

The options are:

- After N days. If you select Archive Data or Delete Data, then you must specify a retention period, which determines the number of days during which performance data remains in the tables of the online monitoring system. Performance data that is older than the specified value gets archived or deleted (depending on your selection) when the archive program runs.
- Delete Data. If selected, the next time the archive program runs, the program deletes performance history data older than the retention period.
- Archive Data. If selected, the next time the archive program runs, the program archives performance history data older than the retention period. The archive program moves history tables (PSPMTRANSHIST and PSPMEVENTHIST) to the archive tables (PSPMTRANSARCH and PSPMEVENTARCH).
- Archive Nothing. Disables performance data archiving for this monitored system.
- Delete System. If selected, the next time the archive program runs, it deletes the system definition and its performance data. Keep in mind that deleting a system does not prevent the monitored system from continuing to send performance data. You *must* set the Monitor URL value on the monitored system to *NONE* to disable monitoring.

Note. If the Archive: Clear PMUs & Events option is enabled in the Global Administration page, the archive settings are ignored.

See Schedule Archive section.

Allow Performance Trace

Enables authorized users connected to this monitored system to launch the Performance Trace Console. By default, this option is enabled on a new monitored system unless you adjust the system defaults on the System Defaults page.

See [Chapter 5, “Working with the Performance Trace,” page 51](#).

PMU Timeout	<p>Indicates the interval in which an open PMU is considered timed out. PMU timeouts are measured in days. The PMU Timeout value can't be set to zero.</p> <p>After the specified interval, the system assumes that a PMU that has not completed encountered an error and should no longer be considered open. The PeopleSoft Application Engine reaper program (PSPM_REAPER) moves timed out PMUs from the current PMU tables to the history PMU tables and sets the status to Reaper Timed Out.</p> <hr/> <p>Note. When a PMU starts, the application server agents specify an override timeout equal to the Tuxedo service timeout of the domain. In such cases, the reaper program uses the override value instead of the PMU Timeout specified here.</p> <hr/>
Agent Event Sample Rate	<p>Specifies the rate (in seconds) that agents collect resource metrics, such as CPU usage. The default is 300 seconds (five minutes). To disable event sampling, set the value to zero.</p> <hr/> <p>Note. Smaller sampling rate intervals will provide more frequent updates of machine and process resource utilization on your monitored systems. However, consider that by decreasing the sampling rate interval you increase the volume of data sent to and stored in the performance database. This increases the overall impact of performance monitoring.</p> <hr/>
Agent Buffering Interval	<p>Specifies the rate (in seconds) at which an agent sends performance data to the monitoring system.</p> <p>This value can't be set to zero.</p> <p>A smaller interval decreases the delay between the time when the monitored system generates performance data and the time it is displayed on the monitoring system.</p> <p>Larger intervals enable more efficient transmission of performance data across the network because the system can consolidate the data into packets. The larger the interval, the greater the Agent Max Buffer size should be set.</p> <p>The default is 10 seconds.</p>
Agent PMU Sample Rate	<p>Enables you to reduce the amount of PMU data generated by monitoring just 1 of every N server trips.</p> <p>Sampling does not affect PMUs initiated in a performance trace.</p> <p>See Chapter 4, "Administering the PeopleSoft Performance Monitor," Configuring Performance Monitoring Sampling Rate, page 39.</p>
Agent Heartbeat Interval	<p>This is the interval at which agents that do not have any performance data to report or that are in standby mode connect to the monitor servlet to be notified of any configuration changes. If agents post data to the monitoring system before this interval expires, they will be notified of any configuration changes and the timer will be reset.</p> <p>The lower the number, the greater the responsiveness of the agents to configuration changes, but the greater the network traffic.</p> <p>This value <i>can't</i> be set to zero.</p> <p>The default value is 300.</p>

Agent Max Buffer Size	<p>Determines the maximum size of the buffer containing performance data. This enables you to cap the amount of data being stored by the agent on the monitored system and the amount of data sent across your network. If this limit is reached, the agent automatically discards new performance data until the current data has been posted to the monitor servlet.</p> <p>The agent posts an alarm to the monitoring if the buffer size threshold is exceeded.</p> <p>The default is 4194304 bytes (4 MB). The minimum must be 10240 bytes (10 KB).</p>
Save and Notify Agents	<p>Notifies the monitor servlet of configuration changes made on this page. First, the system saves the changes to the database. Notification of the monitor servlets occurs through the PeopleSoft Integration Broker gateway. The monitor servlet notifies the agents of changes when the agents next communicate with the monitor.</p> <p>There is a delay in publishing changes to the monitored systems. The maximum delay is the agent heartbeat interval.</p> <hr/> <p>Note. The Integration Broker Gateway must be configured correctly otherwise you will see an error message indicating that the agents were not notified of system changes.</p> <hr/>
Versions	<p>Enables you to view a history of the PeopleTools versions installed on a monitored system.</p> <p>The Tools Release column reveals the version numbers.</p> <p>The Valid From columns indicate the date and time an agent on a particular version first communicated with the monitoring system.</p> <p>The Valid To columns indicate the date and time that an agent on a particular version last communicated with the monitoring system.</p>

Viewing Agent Definitions

Access the Agent Definitions page.

Agent definitions enable you to view the details about the agents in monitored systems.

System ID	Identifies each monitored system. PeopleSoft automatically generates this value incrementally. System definitions are created automatically when the first agent of a monitored system registers with the monitoring system.
Database Name	The name of the PeopleSoft application database running on the monitored system. The monitoring system automatically inserts this value when it recognizes and creates a monitored system.
Agent ID	Uniquely identifies an agent within a system. This is automatically generated by the monitor the first time an agent registers with it.
Domain Name	The name of the domain (application server or web server) in which the agent operates.

Agent Type	Indicates the type of server process the agent is monitoring.
Domain Type	Indicates whether the domain is an application server, a web server, or a Process Scheduler server domain.
Domain Monitor	Displays as <i>Yes</i> or <i>No</i> . If yes, then this agent is responsible for sending resource events for its host and/or domain to the monitor at the specified sampling rate for the monitored system.
Server Instance	This number is specific to Tuxedo servers and corresponds to the Tuxedo instance number.
Domain Host/Port	The name or IP address of the server on which the domain resides including the port number to which the domain listens for requests.
<hr/> <p>Note. Web server agents register with both the HTTP and the HTTPS ports. The application server agents register with the Jolt Server Listener (JSL) port. Process Schedulers do not have ports.</p> <hr/>	
Domain Directory	The directory in which the domain is installed on the server.
Inactive Agent	<p>If this box is selected, the agent is considered inactive. That is, the agent's events and PMUs do not appear in the PeopleSoft Performance Monitor pages showing current information. You can still view information about events and PMUs sent by inactive agents using the pages that display historical information.</p> <p>To reactivate an agent, deselect the check box, and click Save.</p> <p>To deactivate an agent, select the checkbox, and click Save.</p>

Setting Agent Filter Options

Access the Agent Filters page.

Agent Filters

System ID: 1 **Database Name:** FS844U73

Reset All Filters:

Agent Type	Last Update User ID	Last Update Date/Time	*Filter Level
PERFMON	VP1	11/12/2003 10:52:39AM	04-Standard
PSAPPSRV	VP1	11/12/2003 10:52:39AM	04-Standard
PSMONITORSRV	VP1	11/12/2003 10:52:39AM	04-Standard
PSMSTPRC	VP1	11/12/2003 10:52:39AM	04-Standard
PSQRYSRV	VP1	11/12/2003 10:52:39AM	04-Standard
PSSAMSRV	VP1	11/12/2003 10:52:39AM	04-Standard
WEBRESOURCE	VP1	11/12/2003 10:52:39AM	04-Standard
WEBSERVER	VP1	11/12/2003 10:52:39AM	04-Standard

Agent Filters page

Agent filters determine the amount of performance data generated and sent to the monitoring system. Depending on the situation, different levels of performance data may be needed to assist in your performance-related decisions. The levels range from no information to extremely detailed information.

Each type of PMU and event is associated with a filter level, which is the lowest level at which the system generates performance data for that PMU or event.

System ID	Identifies each monitored system. PeopleSoft automatically generates this value incrementally. System definitions are created automatically when the first agent of a monitored system registers with the monitoring system.
Database Name	The name of the PeopleSoft application database running on the monitored system. The monitoring system automatically inserts this value when it recognizes and creates a monitored system.
Reset All Filters	Enables you to uniformly adjust the agent filter levels across an entire system. Select the desired level and click Apply.
Agent Filters	<p>The Agent Type column displays the types of agents currently known to the monitoring system.</p> <p>The Last Update User ID column and Last Update Date/Time column display the user ID that last updated the filtering level and the date and time when the user made the last filtering level change.</p> <p>The Filter Level column contains a drop-down list for setting the filtering level. You have the following options:</p> <ul style="list-style-type: none"> • 01 Standby. The monitor system sends no performance data to the monitor. Agents on this monitored system contact the monitor at an interval specified by the agent heartbeat interval.

- 02 Error. Only error events are reported to the monitoring system by the agents.
- 03 Warning. Only error and warning events are reported to the monitoring system by the agents.
- 04 Standard. This is the default level of monitoring adopted by agents when they first register with the monitor. In addition to errors and warnings, PMUs and events with a filter level of Standard are reported to the monitoring system. This is the recommended setting for monitoring production environments. It provides sufficient diagnostic information to isolate performance problems without inundating the network or monitoring database with performance data.
- 05 Verbose. In addition to errors and warnings, and standard PMUs and events, PMUs with a filter level of Verbose are reported to the monitoring system. This setting provides more detailed performance metrics and may, for some production systems, be worth the overhead associated with this monitoring level.
- 06 Debug. In addition to errors and warnings, standard and verbose PMUs and events, PMUs with a filter level of Debug are reported to the monitoring system. This setting provides extremely detailed performance metrics and is not suitable for monitoring production systems. It is only intended for development and test environments.

Save and Notify Agents

Notifies the PPMI servlet of configuration changes made on this page. First, the system saves the changes to the database. Notification occurs through the PeopleSoft Integration Broker gateway. The monitor servlet notifies the agents of changes when the agents next communicate with the monitor. There is a delay in publishing changes to the monitored systems. The maximum delay is the agent heartbeat interval.

Scheduling the Reaper Program

The reaper program is a delivered PeopleSoft Application Engine program named PSPM_REAPER. The reaper program maintains the PeopleTools tables that the PeopleSoft Performance Monitor uses to store performance data for current, real-time processing.

When the PSPPMSRV gets notified that a PMU has completed (as in, it receives a STOP for an open PMU), it:

- flags the corresponding start and update rows in the current PMU table (PSPMTRANSCURR) for deletion.
- inserts a row for the completed PMU in the PSPMTRANSHIST table.

When the reaper program (PSPM_REAPER) runs, it:

- deletes all rows in current PMU table (PSPMTRANSCURR) that are flagged for deletion.
- sets the status to "timed out" for expired PMUs in the current tables.

To run the reaper program:

1. Select PeopleTools, Performance Monitor, Administration, Schedule Reaper.
2. Select or add a run control ID.

3. Click Run.

PeopleTools delivers a recurrence definition named *PerfMon Reaper Recurrence*, which is set to run every 15 minutes. Modify this recurrence definition, if necessary, and associate it with the PSPM_REAPER program to schedule the program to run at suitable intervals.

Warning! If you do not schedule the reaper program to run often enough, the PSPMTRNSCURR table will grow very large over time, and it may contain many old, open PMUs.

Scheduling Performance Data Archiving

Performance data archiving options are set per system definition. So, your HCM system and your CRM system may have different archiving modes. You define your archive settings in the Archive Mode group box on the System Definition page. The performance data archiving program is a PeopleSoft Application Engine program named PSPM_ARCHIVE.

Note. The system overrides the archive options set in the System Definition page if you have enabled the Clear PMUs & Events option on the Global Administration page.

See [Chapter 4, “Administering the PeopleSoft Performance Monitor,” Setting Global System Options, page 25.](#)

Note. PeopleSoft provides sample queries that demonstrate how to access data in the archive tables. Currently, there is no other delivered method of accessing the data in archive tables.

See [Chapter 4, “Administering the PeopleSoft Performance Monitor,” Working with PeopleSoft Performance Monitor Tables, page 36.](#)

Running the Performance Data Archiving Program

To run the archiving program:

1. Select PeopleTools, Performance Monitor, Administration, Schedule Archive.
2. Select or add a run control ID.
3. On the Schedule Archive page, perform the following:

- Determine if you want to enable Run %UpdateStats at the end.

By enabling this option, the system runs %UpdateStats meta-SQL on both the history and archive tables after the archive program completes successfully.

See *Enterprise PeopleTools 8.45 PeopleBook: PeopleSoft Application Engine*, “Using Meta-SQL and PeopleCode,” %UpdateStats.

- Click Run to launch the archive program.

Note. PeopleSoft recommends setting up a recurrence definition in Process Scheduler so that the archiving program runs at regular intervals. This can help to keep the performance history tables at more manageable sizes while containing the most relevant data.

Working with Aborted Program Runs

If the performance data archiving program does not complete successfully, the system automatically invokes the PeopleSoft Application Engine program named PSPM_ARCHREC. This program is designed to return the system to the state it was in before the archive program started.

During an archive program run, the PSPPMSRVs redirect incoming PMU and event data to cloned history tables. When the archive program completes, the system moves the data in the cloned tables to the history tables and the PSPPMSRVs resume inserting data directly into the history tables. If the archive program does not complete successfully, the PSPPMSRVs continue to insert data into the cloned tables.

Populating PeopleSoft Performance Monitor Lookup Tables

On many of the pages used for viewing performance information, such as the Current PMUs page, you are prompted to enter either a user ID, a component name, or a performance trace name to narrow the search to relevant performance data. Unless you are self-monitoring, the monitored system components and User IDs differ from those of the monitoring system. Therefore, the performance monitor provides its own lookup tables, and the PSPM_LOOKUP PeopleSoft Application Engine program populates these lookup tables.

To run the lookup program:

1. Select PeopleTools, Performance Monitor, Administration, Schedule Lookup Maintenance.
2. Select or enter a run control ID.
3. On the Schedule Lookup page, click Run to launch the lookup program.

Note. PeopleSoft recommends setting up a recurrence definition in Process Scheduler so that the lookup program runs at regular intervals.

Working with PeopleSoft Performance Monitor Tables

As with any PeopleTool or PeopleSoft application, the underlying application definitions and application data reside in a collection of database tables designed using Application Designer. Although most PeopleSoft applications provide data models that show the relationships between the database entities, typically, for PeopleTools, knowledge of the underlying database tables is not required.

However, with the PeopleSoft Performance Monitor, knowledge of the underlying database tables may be required. For example, the PeopleSoft Performance Monitor interface provides numerous options to use when viewing performance data, such as viewing by time range, viewing by user, viewing by component, and so on. In some cases, you may want a more customized view of your performance data than what the interface offers.

You can use PeopleSoft Query, or your SQL tool of choice, to build queries that run against the PeopleSoft Performance Monitor tables and return the specific information you require.

To assist you in creating custom queries, the PeopleSoft Performance Monitor data model appears in the form of an entity relationship diagram (ERD) posted on Customer Connection. Refer to the Enterprise PeopleTools Release Notes for this release for the current location of the PeopleSoft Performance Monitor ERD.

See "PeopleTools 8.44 and 8.45: PeopleSoft Performance Monitor Database Schema and Use Cases" on Customer Connection.

Note. The PeopleSoft Performance Monitor database schema may change in future releases.

To view the results of sample queries running against the PeopleSoft Performance Monitor tables, select PeopleTools, Performance Monitor, History, Sample Queries. To view the definitions and SQL of these sample queries use PeopleSoft Query Manager. The sample queries attempt to show a realistic query while using all of the tables that you may want to include in similar queries.

See *Enterprise PeopleTools 8.45 PeopleBook: PeopleSoft Query*, “Getting Started with PeopleSoft Query”.

The sample query definitions are:

Query	Description
PPM_COMP_BUILD_CACHE	This query returns all application server requests for a specific system that had to retrieve metadata from the database as opposed to the cache. It also shows the file cache and memory cache for comparison. This query returns information from the PMU history table.
PPM_COMP_BUILD_CACHE_ARCH	This query is similar to PPM_COMP_BUILD_CACHE except it returns information from the PMU archive table.
PPM_TIMEOUT_SQL_REQ	This query returns information from the PMU history table while joining information stored in the event table. This query retrieves all PMU 400's (Tuxedo Service PCode and SQL) that were running SQL statements when an Event 500 (Jolt Service Exception) was received. It is assumed that this exception occurred because of a timeout, but it could also have been due to an application server outage or a Jolt error.
PPM_TIMEOUT_SQL_REQ_ARCH	This query is similar to PPM_TIMEOUT_SQL_REQ except it returns information from the PMU and Event archive tables.

Note. When running a sample query, the system prompts you to enter a date. The format for the date is MM/DD/YYYY HH:MM:SS AM/PM. For example, 09/03/2003 12:00:01AM.

Disabling PeopleSoft Performance Monitor Agents

In some cases, you may not want the PeopleSoft Performance Monitor agents to run or to be a possible factor in your online system. For example, if you have ten application server domains running against the same database, you may only want one application server domain reporting information to the monitoring system.

Agents in a domain whose monitor URL is "NONE" do not collect or transmit performance data. However, they periodically check the URL for changes. Disabling a domain prevents this small portion of PeopleSoft Performance Monitor related processing from occurring. To prevent *any* information from being sent over the network, set the monitor URL to NONE and reboot *all* monitored domains. To completely disable monitor agents on your domains, deselect the Enable PPM Agents parameter and reboot *all* monitored domains.

Application Server and Process Scheduler Domains

For application server and Process Scheduler domains, you disable the monitor agents using the EnablePPM Agents parameter. This parameter is

in the PSTOOLS section of PSADMIN. To disable the monitor agents, set the value to *0*. To enable the monitor agents, set the value to *1*.

Reboot the application server domain for the change to take effect.

Once disabled, the Monitor URL is ignored by that domain.

Web Server

For the web server, agents are disabled by deselecting the Enable PPM Agents option in the Web Profile interface.

Reboot the web server for the change to take effect.

Working with PeopleSoft Performance Monitor Web Profile Properties

This section alerts you to important web profile properties related to the PeopleSoft Performance Monitor.

Enable PPM Agent	Enables a web server agent to be started on a monitored web server.
PPM Monitor Buffer Size	Sets the maximum buffer size for the buffer used by the monitor servlet for incoming performance data. The default size is 51200 KB (50 MB). If you notice in servlet trace files or other warnings that you regularly see buffer overflows, you may consider increasing this value.
Trace Monitoring Server	Located on the Debugging tab. Enables you to trace the ppmi servlet and the monitor servlet. The system writes the trace information to the web server log file.
Trace PPM Agent	Located on the Debugging tab. Enables you to trace web server agents on a monitored system. You enable this option on the web server of the monitored system.
PPMConsole	See Chapter 4, “Administering the PeopleSoft Performance Monitor,” Viewing Monitor Servlet Diagnostics, page 40.

Tracing PeopleSoft Performance Monitor Agents

You can set up tracing on the:

- Application server and Process Scheduler servers.
- Web server.

Enabling Tracing on the Application Server or Process Scheduler Server

To enable tracing of the monitor agents on application server and Process Scheduler domains, use the PPMTraceparameter in PSADMIN on the application server running on the monitored system. Set PPMTrace to *1*. To disable, set to *0*.

Once enabled, the agents write debug information on monitored systems to a log file in the application server LOGS directory. To view the information, open PPMTRACE_mmdd.LOG. The LogFence setting for application server logs has no effect on this file. Error messages (such as those created when the monitor URL can't be reached) go directly to the APPSERV_mmdd.LOG.

Enabling Tracing on the Web Server

To enable tracing of the monitor agents on the web server, select Trace PPM Agent on the Debugging tab in the appropriate web profile on the monitored system.

The agents write tracing information to the web server log file.

Tracing the Monitor and PPMI Servlets

In some cases, you may want to view the activity of the monitor and PPMI servlets running on the web server on the monitoring system.

To enable tracing for the Performance Monitor servlets, you enable the Trace Monitoring Server option on the Debugging tab in the appropriate web profile. The system writes the trace results to the web server log file.

See Also

Enterprise PeopleTools 8.45 PeopleBook: Internet Technology, “Configuring the Portal Environment,” Configuring Web Profiles

Enterprise PeopleTools 8.45 PeopleBook: System and Server Administration, “Working with BEA WebLogic”

Enterprise PeopleTools 8.45 PeopleBook: System and Server Administration, “Working with IBM WebSphere”

Configuring Performance Monitoring Sampling Rate

To reduce the overhead incurred by monitoring performance, you may not want to monitor every request submitted to your system. You can set a sampling rate for your monitored systems so that only one out of every N server requests generate PMUs. For the Nth request, all PMUs are generated at the filter level set for each agent type involved in processing the request. Examples of server requests would be browser requests to a web server or Application Designer requests to an application server (when running in a three-tier configuration). You set the sampling rate for PMUs using the Agent PMU Sample Rate option on the System Definitions page.

Note. This sampling rate only applies to PMUs, not events.

For example, if you set the sampling rate to 1/10, the system monitors the first PIA request, but does not monitor another request until the 11th requests arrives at the system.

Some PMUs are always monitored regardless of the sampling rate. The PMUs that are never ignored are those that have the Enable Sampling option *deselected* on the PMU Definitions page. Examples of such PMUs are those related to users signing on, signing off, and being redirected to other sites.

Note. Setting the sampling rate to 0 (zero) disables sampling.

The web server and the application server maintain separate counters. The web server counts all browser requests, and the application server counts all requests submitted directly to the application server, such as component interfaces or Windows workstations running Application Designer.

See Also

[Chapter 10, “Working with Performance Monitor Meta-Data,” Understanding PMU Definitions, page 133](#)

[Chapter 4, “Administering the PeopleSoft Performance Monitor,” Modifying System Definitions, page 28](#)

Viewing Monitor Servlet Diagnostics

You can view diagnostic information related to the monitor servlet by accessing the servlet using the following URLs.

URL	Description
<code>http://<host>/monitor/<site>/?cmd=agents</code>	Reveals additional statistics about the agents sending data to the monitor servlet.
<code>http://<host>/monitor/<site>/?cmd=ppmiclients</code>	Reveals additional statistics about the PPMI clients receiving data from the monitor servlet.

Note. By default, access to this interface is disabled. To provide access to this interface, you must add the PPMConsole property to the Custom Properties tab in the appropriate web profile. The PPMConsole property is boolean. Set the value to true to enable access to this interface. To disable access, set the value to false or remove the property entirely from the custom properties list.

See *Enterprise PeopleTools 8.45 PeopleBook: Internet Technology*, “PeopleTools 8.45 Web Libraries”.

Monitoring Agents

Agents refers to the agents on various monitored systems that send performance data to the current monitor servlet.

The system retrieves the agent information from the monitor’s cache. If an administrator has changed any agent settings and clicked Save and Notify Agents on the System Definitions page, the agent information temporarily disappears in the Agents grid. Updated agent settings appear in the Agents grid after the agent communicates with monitor servlet.

Note. You identify the monitored system, using the system ID (PeopleSoft GUID) appearing just above each grid. To identify the agents you need to map the system GUID and agent ID with the definitions in the monitoring database.

Note. Agents appear in the grid if they have successfully registered. The appearance of an agent does not imply that data from the agent is being successfully inserted into the monitoring database.

The following information appears in the Agents grid.

ID	The agent ID that uniquely identifies an agent within a monitored system.
Last Comm	The last time the agent contacted the monitor servlet.
Filter	The current agent filter level.
Buf-Size (Buffer Size)	The current maximum buffer size for the agent specified in the system definition.
Send-Itvl (Send Interval)	The current agent buffering interval.
Heartbeat	The current agent heartbeat interval
Sample-Itvl (Sample Interval)	The current agent event sample rate.
User Trace	Indicates whether performance trace is allowed for this agent.
Sampling Rate	The current PMU sample rate.
Sampling Filter	This column is reserved for future use.

Monitoring PPMI Clients

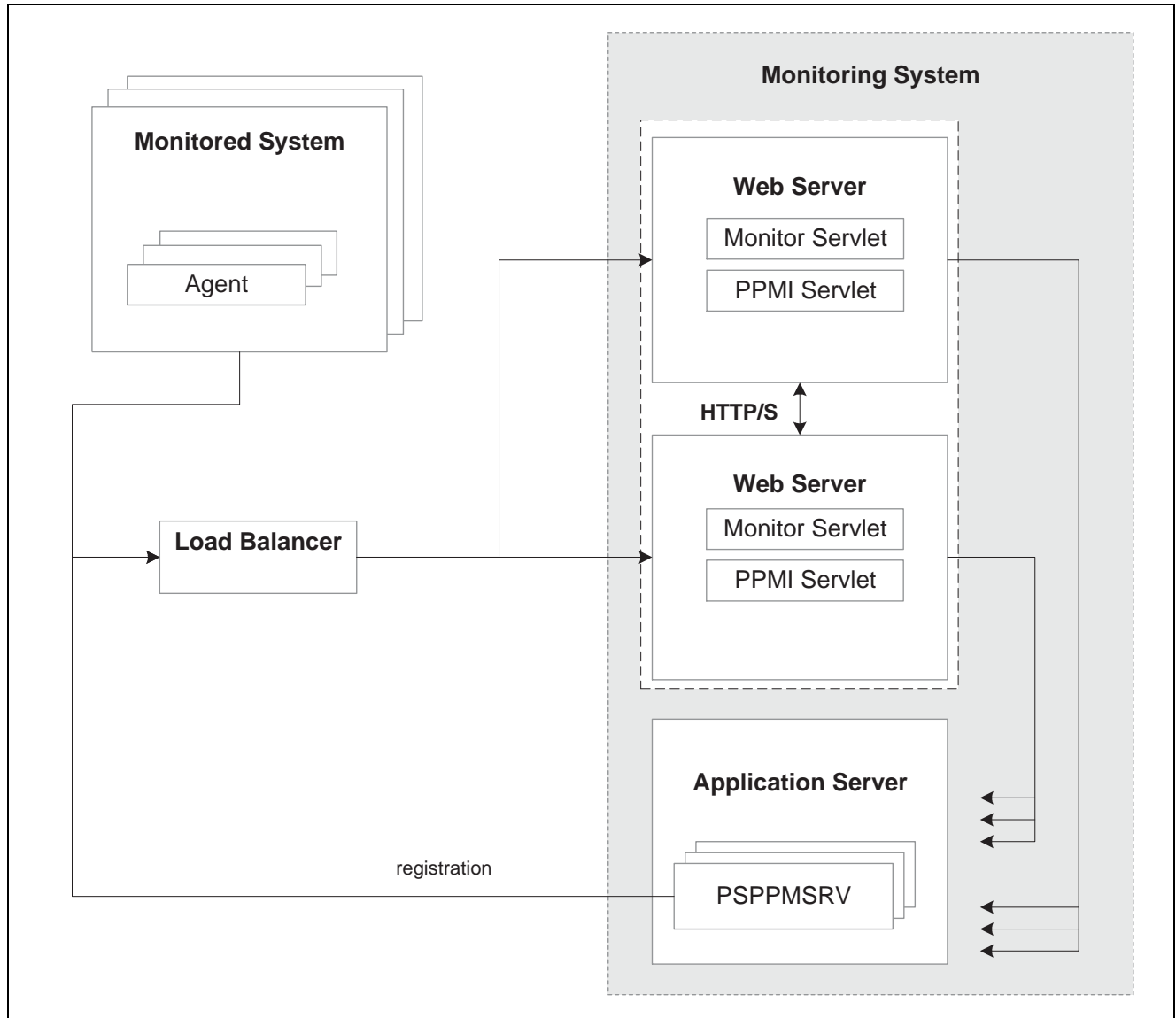
PPMI clients refer to the PSPPMSRV server processes that interact with the monitor servlet. The Clients grid shows all known PPMI clients.

The following information appears in the Clients grid.

Group	The system's unique identifier (PeopleSoft GUID).
ID	The internal ID assigned to this PSPPMSRV.
URL	The IP address of the PSPPMSRV.
Queue Length	The number of PMUs and events not yet sent to this PSPPMSRV.
Estimated Queue Size	The estimated size in bytes of the PMUs and events not yet sent to this PSPPMSRV.
Item Processed	Number of PMUs and events sent across this PSPPMSRV connection.
Estimated Bytes Processed	The estimated size in bytes of the PMUs and events sent across this PSPPMSRV connection.
Max Size	Maximum buffer size in bytes for the PMU and event queue reached in the lifetime of this connection.
Running Avg Size	The running average of the estimated size in bytes of the PMUs and events not yet sent to this PSPPMSRV.
Limit	Maximum buffer size in bytes for the PMU and event queue. Data is discarded when this limit is reached.

Setting up Monitor Clusters

The following diagram depicts the relationship between the elements involved in a monitor cluster. In this diagram, the cluster contains two web servers.



Monitor Cluster Elements

When implementing a monitor cluster, keep these items in mind:

- A cluster must be accessed through an external third party load balancer.
- The web servers in a monitor cluster share PSPPMRSRV registration information using HTTP/S.
- Each monitor servlet (one in each web server) load balances performance information across *all* PSPPMRSRVs.
- The host and port of the PPMI URL for a clustered environment need to be set to reflect the host and port of the load balancer.

Note. External load balancers should ensure that performance information related to one agent is always sent to the same monitoring servlet. When sending performance data to the monitor, agents add their agent ID to the monitor URL. For example, for agent 8 the URL appears as `http://host1/monitor/ps/8`. The system administrator should set up a "sticky rule" on the load balancer so that requests from the same agent are always directed to the same web server, when available. If the sticky rule is not in place, there is a chance that a PMU stop time may be inserted into the monitoring database before the corresponding start time. This creates misleading open PMU information and more work for the reaper program.

See [Chapter 9, "Understanding PeopleSoft Performance Monitor Security Considerations," page 123](#).

Note. If a cluster member shuts down, all performance data currently queued on that cluster member for transmission to a PSPPMSRV is lost.

To set up a performance monitor cluster:

1. In the monitoring system, use the host and port of the load balancer in the PPMI URL on the Global Administration page.
2. In the monitoring system, enter the URLs of each load-balanced host in the Performance Monitor Cluster grid on the Global Administration page.

The format of the Member Servlet URL is:

`http[s]://host/ppmi/ps`

Where *ps* is the name of your PeopleSoft site, and *host* is the real host and port of the host on which your cluster member is running. Even though you enter *ppmi* as the servlet name, failover and scalability is implemented for both the PPMI and the monitor servlets from each site.

3. In the monitored system, use the host and port of the load balancer in the Monitor URL on the Specify Monitor page.

See Also

[Chapter 4, "Administering the PeopleSoft Performance Monitor," Setting Global System Options, page 25](#)

[Chapter 3, "Setting Up the PeopleSoft Performance Monitor," Specifying the Monitor URL, page 19](#)

Using PeopleSoft Performance Monitor Data Mover Scripts

PeopleSoft delivers a set of PeopleSoft Data Mover scripts for use in the administration of the PeopleSoft Performance Monitor. The scripts are located in the following directory:

`PS_HOME\scripts`

The delivered scripts are described below.

perfmondataexport.dms

Enables you to export data from your monitoring database.

The data can be exported based on a specific system ID, between specific dates and times, or based on a specific performance trace. The default export is based on a specific system ID. The dat file created is named `perfdata.dat`.

If you need to export performance data from a specific date and time, a performance trace, or information on all monitored systems, then open the script and edit the script as described in the comments within the script.

perfmondataimport.dms

Enables you to import data from perfdata.dat, which is created by the perfmondataexport.dms script, into your monitoring database.

Warning! Do not run this file on a live monitoring system as current data may be lost. The script contains the REPLACE_DATA * command.

See *Enterprise PeopleTools 8.45 PeopleBook: Data Management*, “Using PeopleSoft Data Mover,” REPLACE_DATA.

PerfmonPurgeAll.dms

Enables you to purge all PeopleSoft Performance Monitor tables in the monitoring database.

Note. This script deletes both system definitions and all performance data associated with *any* monitored system.

Warning! Shut down the monitoring system before running this script.

See Also

Enterprise PeopleTools 8.45 PeopleBook: Data Management, “Using PeopleSoft Data Mover”

Estimating Your Performance Database Size

This section provides an overview and discusses how to:

- Estimate space requirements for event data.
- Estimate space requirements for PMU data.
- Calculate space requirements.

Estimating Your Performance Database Size Overview

Because performance monitoring can store a significant amount of data in your performance database, you may want to estimate the amount of data to be stored in your performance database so that you have, or are able to provide, the appropriate amount of space.

Performance database sizing estimates are based on the sum of space requirements for events and performance measurement unit (PMU) performance data. Event data resides in the PSPMEVENTHIST table. PMU data resides in the PSPMTRANS HIST and PSPMTRANSCURR tables.

This section presents formulas that you can use to estimate the potential size of your performance database.

These formulas incorporate the following assumptions and considerations:

- Performance Monitor set to Standard agent filter mode.
- Estimates do not include space required for Verbose or Debug agent filter mode.

- Index overhead is included in the estimate.
- Performance history data is purged after a number of days (see parameter D below).
- The archive mode of a monitored system is set to Delete Data after N days and the performance data archive program is scheduled to run daily.
- The reaper program is scheduled to run at least once a day.
- There is no performance data stored in the archive tables (PSPMTRANSARCH and PSPMEVENTARCH).
- The calculation formulas use only the parameters presented in this section to calculate the estimates. In all cases, the numbers are conservative. For example, the exact formula may use $(App - 1)$ but we choose to round up and use App instead.

Estimating Space Requirements for Event Data

This section discusses two formulas used for estimating event data space requirements (in kilobytes).

- Standard formula. Use the standard formula if the application server domain configuration is based on PeopleSoft delivered small, medium, or large template.
- Customized formula. Use the customized formula if the configuration is different from the templates.

This table describes the variables used in the formulas.

Notation	Description	Performance Monitor Default Value	Navigation
A	Performance Monitor agent event sampling rate.	300 seconds	PeopleTools, Performance Monitor, Administration, System Definitions
N	Number of PeopleSoft systems monitored by PeopleSoft Performance Monitor. This is the number of PeopleSoft databases appearing on the System Definitions search page.	NA	PeopleTools, Performance Monitor, Administration, System Definitions
D	Performance history retention period in days. This is the value set for the After N days option.	NA	PeopleTools, Performance Monitor, Administration, System Definitions
W	Number of web server domains for a monitored system. This is the total number of web servers appearing on the System Performance page.	NA	PeopleTools, Performance Monitor, System Monitor, System Performance
P	Number of application server domains for a monitored system. This is the total number of application servers appearing on the System Performance page.	NA	PeopleTools, Performance Monitor, System Monitor, System Performance

Notation	Description	Performance Monitor Default Value	Navigation
App	Number of server processes running in an application server domain for a monitored system. This is the number of program names appearing on for Server Status.	Use following number per domain template you choose: <ul style="list-style-type: none"> • Large = 60 • Medium = 40 • Small = 20 	PSADMIN, Application Server, Administer a domain, Domain, Domain status menu, Server status
S	Number of monitored PeopleSoft Process Scheduler domains for a monitored system. This is the total number of Process Scheduler domains appearing on the System Performance page.	NA	PeopleTools, Performance Monitor, System Monitor, System Performance
PrCs	Number of server processes running in a PeopleSoft Process Scheduler domain for a monitored system. This is the number of program names appearing for Server status.	8 Increase this number if more than three Application Engine processes are configured.	PSADMIN, Process Scheduler, Show Status of a Process Scheduler Server, Domain, Domain status menu, Server status
MPrCs	Number of Master Scheduler for a monitored system.	1	NA
E	Number of KB per event row in the table.	Refer to the value in the table below for the target database.	NA

The following table helps you to determine the appropriate value for E (Number of KB per event row in the table).

Parameter	ANSI/Unicode	Oracle	Microsoft SQL Server	DB2 UDB	DB2/390
E	ANSI	.4	.4	.5	.6
E	Unicode	.7	.7	.9	1.1

Using the Standard Formula

The formula you use differs depending on the template used in the application server configuration.

Large $N \times D \times [8 \times W + 180 \times P + 16 \times S + 1] \times 86400 / A \times E$

Medium $N \times D \times [8 \times W + 120 \times P + 16 \times S + 1] \times 86400 / A \times E$

Small $N \times D \times [8 \times W + 60 \times P + 16 \times S + 1] \times 86400 / A \times E$

Using the Customized Formula

Use this formula if the application server configuration is different from the standard templates.

$N \times D \times [8 \times W + 3 \times P \times \text{App} + 2 \times S \times \text{PrCs} + \text{MPrCs}] \times 86400 / A \times E$

Note. There are eight events reported per web server domain. There are two events per web server (JVM status and network status), one event per web site, and five events per web site for PeopleSoft servlets (psp, psc, cs, *, and Scheduler Transfer).

If multiple systems are monitored and each configured slightly differently, as in the numbers of application server processes are different, then use the formula to estimate the requirement for each system separately.

Estimating Space Requirements for Performance Measurement Unit (PMU) Data

The total space requirements, in kilobytes, for PMU data stored in PSPMTRANSHIST and PSPMTRANSCURR tables can be estimated using the following formula:

$$N \times [D + 1] \times L \times R \times M \times T$$

This table describes the variables used in this formula.

Notation	Description	Performance Monitor Value Default	Navigation
N	Number of PeopleSoft systems monitored by Performance Monitor. This is the number of PeopleSoft databases appearing on the System Definitions search page.	NA	PeopleTools, Performance Monitor, Administration, System Definitions
D	Performance history retention period in days. This is the value set for the After N days option.	NA	PeopleTools, Performance Monitor, Administration, System Definitions
L	Number of user sessions per day for a monitored system. A session means a user signs on, performs a few transaction, and signs off.	NA	NA
R	Number of user interactions per session. User interactions are anything that triggers a server trip, including clicking a button, clicking TAB, and so on.	NA	NA
M	Number of PMU rows captured per user interaction.	9	NA
T	Number of KB per PMU row in the table.	Refer to the value in the table below for the target database.	NA

The following table helps you to determine the value for T.

Parameter	ANSI/Unicode	Oracle	Microsoft SQL Server	DB2 UDB	DB2/390
T	ANSI	1.3	1.4	1.8	2.1
T	Unicode	2.4	2.6	3.3	3.8

Calculating Space Requirements

This section presents an example of using the formulas to estimate the performance database size for a fictitious organization.

Company ABC uses Performance Monitor to monitor two PeopleSoft Enterprise Applications, Financials and HCM (N=2). Both applications use DB2 UDB Unicode databases. It is decided that the performance history data will be kept for a 7-day period (D=7). Each system has two web server domains (W=2), two application server domains (P=2), and two PeopleSoft Process Scheduler domains (S=2). The implementation team decides to use the medium application server configuration for both domains. There is one Master Scheduler for each of the systems (MPrcs=1).

It is estimated, on the average, that 10,000 user sessions (L=10000) will be logged per day in each of the systems. During each session, 50 user interactions (clicking buttons, tab to next field or page, and so on) will occur (R=50).

This is the sample calculations for event data space (using the standard formula for a medium configuration):

$$\begin{aligned}
 & N \times D \times [8 \times W + 120 \times P + 16 \times S + 1] \times 86400 / A \times E \\
 &= 2 \times 7 \times [8 \times 2 + 120 \times 2 + 16 \times 2 + 1] \times 86400 / 300 \times E \\
 &= 1,165,248 \text{ rows} \times 0.9 \text{ KB per row} \\
 &= 1,024 \text{ MB}
 \end{aligned}$$

This is the sample calculation for PMU data space:

$$\begin{aligned}
 & N \times [D + 1] \times L \times R \times M \times T \\
 &= 2 \times [7 + 1] \times 10000 \times 50 \times 9 \times T \\
 &= 72,000,000 \text{ rows} \times 3.3 \text{ KB per row} \\
 &= 232,032 \text{ MB}
 \end{aligned}$$

This is the formula for space requirement for storing performance data on a DB2 UDB Unicode database:

$$1,024 \text{ MB} + 232,032 \text{ MB} = 233,056 \text{ MB}$$

Company ABC decides to add a 1 TB disk.

Business is going well for ABC Company. The demand for the Financial application increased by 50%. The IT department decided to add new web server, application server, and PeopleSoft Process Scheduler domains for the Financials application (N=1). According to the system administrator, when the application server domain is booted a “22 processes started” message appears (App=22), and the PeopleSoft Process Scheduler domain shows a “12 processes started” message (Prcs=12). The IT department needs to estimate if there is enough disk space to store additional performance data.

Use the customized formula to calculate space requirement for event data generated by the new configuration.

$$N \times D \times [8 \times W + 3 \times P \times \text{App} + 2 \times S \times \text{Prcs} + \text{MPrcs}] \times 86400 / A \times E$$

$$= 1 \times 7 \times [8 \times 1 + 3 \times 1 \times 22 + 2 \times 1 \times 12] \times 86400 / 300 \times E$$

$$= 153,216 \text{ rows} \times 3.3 \text{ KB per row}$$

$$= 494 \text{ MB}$$

System usage increased by 50% for the Financials application, so the total space requirement is:

$$233,056 \text{ MB} + 494 \text{ MB} + [233,032 \text{ MB}/2 \times 50\%]$$

$$= 291,558 \text{ MB}$$

The IT department concludes there is enough space to store the performance data.

CHAPTER 5

Working with the Performance Trace

This chapter provides an overview and discusses how to:

- Enable the performance trace.
- Run a performance trace.
- View performance trace information.

Understanding the Performance Trace

The PeopleSoft Performance Monitor enables you to monitor and record performance information for all activity on PeopleSoft systems. However, there are times when you need to monitor the performance of a specific business process or the performance issues reported by a specific user. In these cases, you can use a performance trace.

The Performance Trace enables you to:

- Group PMU's across server requests.
- Display PMU's from multiple systems.
- Override default agent filter levels.

A user starts and stops a performance trace from the Performance Trace console. While a performance trace is in effect, the system associates the trace name with each PMU created during that user's session. The trace name may then be used in the PeopleSoft Performance Monitor pages to search for performance data created during the performance trace.

The trace can override the current agent filter level for PMUs created during the trace. The override applies to that user session only.

Performance traces are effective across multiple systems that report to the same monitor. For example, if a portal displays content from another monitored system, traces started from the portal also apply to the displayed content.

Note. The Performance Trace Console needs to be launched from an end user's browser.

Note. A performance trace is not affected by the PMU sample rate.

Enabling A Performance Trace

Systems that are configured to allow performance traces have a Performance Trace link appearing in the Universal Navigation Header appearing on each PeopleSoft page.

Note. In the following procedure, be sure to notice where each step needs to be completed: on the *monitoring* system or the *monitored* system.

To enable a performance trace:

1. On the monitoring system select PeopleTools, Performance Monitor, Administration, System Definitions, and select the appropriate system definition.
2. On the monitoring system make sure Allow Performance Trace is selected on the System Definitions page.

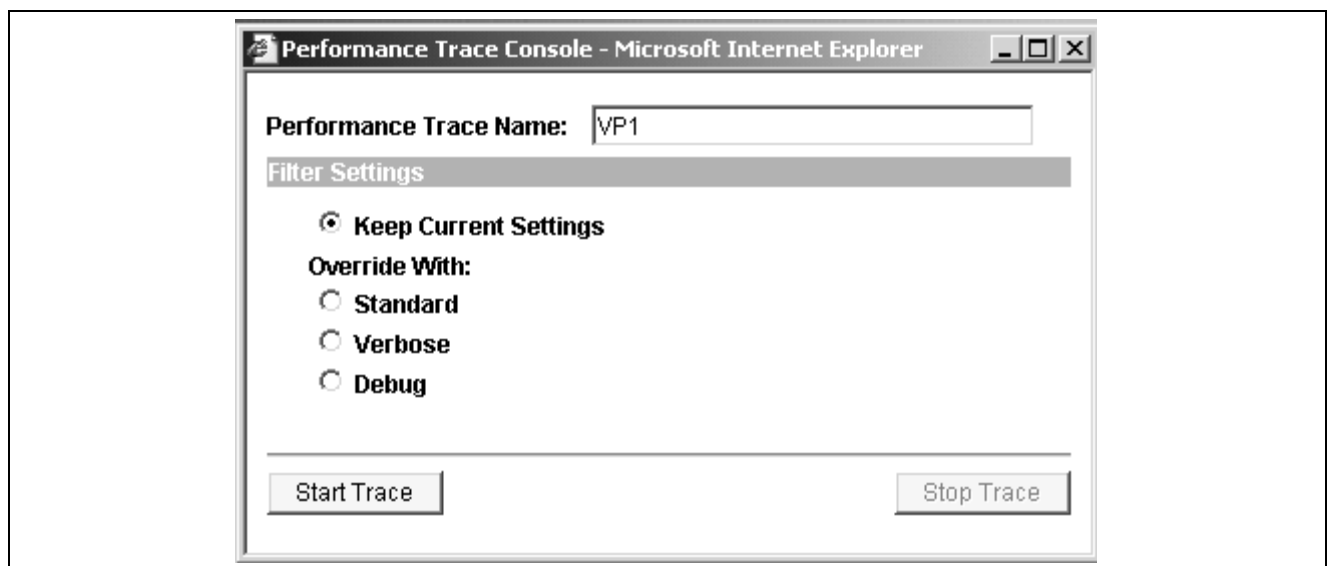
Note. If a business process includes multiple systems, each system in the business process needs to have the system configured to allow performance traces.

3. On the monitoring system, click Save and Notify Agents.
4. On the *monitored* system, make sure the user who will run the performance trace has the WEBLIB_PPM web library specified in at least one of their permission lists.

Note. If you don't want a user to see the Performance Trace link, you need to remove the web library WEBLIB_PPM from their permission lists. Without access to WEBLIB_PPM, the Performance Console link does not appear in the Universal Navigation Header.

Running a Performance Trace

The Performance Trace Console launches in a small, separate window.



Performance Trace Console

To run a performance trace:

1. If the Performance Trace link does not appear in the Universal Navigation Header, click Sign out to log off the system, and then clear the browser's cache (remove temporary Internet files).

Note. Clearing browser cache varies depending on which supported browser you use. Refer to your browser's documentation for details.

2. Sign on to PeopleSoft.
3. Navigate to the page where you want to begin the performance trace.
4. Click the Performance Trace link, which is located in the Universal Navigation Header.
This launches the Performance Trace Console.

5. In the Performance Trace Name edit box, enter a name to identify the trace results.

Remember the name that you enter as you need to enter this name in the search criteria when you intend to view the trace results. You can accept the default name, if one appears.

6. In the Filter Level group box, set the filter level options.

You have the following options:

Keep Current Settings	The system continues to record performance information according to the current agent filter settings.
Override with Standard	Changes the current filter level to Standard for the current user's session.
Override with Verbose	Changes the current filter level to Verbose for the current user's session.
Override with Debug	Changes the current filter level to Debug for the current user's session.

7. Once the appropriate filter levels have been set, click Start Trace.
8. Complete the business process you need to monitor.
9. Click Stop Trace.

Viewing Performance Trace Information

To view performance trace information:

1. Make note of the performance trace name entered by the user.
2. Navigate to the PeopleSoft Performance Monitor page that displays the desired performance information.
You can use the performance trace name to view.
 - Open PMUs.
 - Completed PMUs.
 - All of the performance charts.
3. In the search criteria for the page you are on, enter the name of the performance trace in the Performance Trace Name edit box.
4. Enter any additional search criteria required.
5. Click Search.

CHAPTER 6

Monitoring System Performance

This chapter provides an overview and discusses how to:

- Use the system performance home page.
- View web server performance.
- View application server domain performance.
- View Process Scheduler server performance.
- View Master Scheduler server performance.
- View open PMUs.
- View open PMU trees.
- View current users.

Understanding System Performance Monitoring

This section contains an overview and discusses the navigation and usage of the pages related to monitoring system performance.

Monitoring System Performance

The activities related to monitoring system performance focus on viewing and analyzing the most recent performance data received from agents in a monitored system.

PeopleSoft provides a collection of use cases in the form of flow charts for you to use as a framework for learning how to use PeopleSoft Performance Monitor to detect performance issues. These flow charts do not appear in this PeopleBook; they are posted on Customer Connection. Refer to the PeopleTools 8.45 Release Notes for the current location of these flow charts.

See PeopleTools 8.45: PeopleSoft Performance Monitor Database Schema and Use Cases on Customer Connection.

Note. The information presented in the System Performance pages is as current as the last page refresh.

Note. The Standard Deviation (Std. Dev.) is provided on many pages. The standard deviation is a statistic that tells you how tightly all the values used to compute the average are clustered around the average. Large standard deviations warn that the averages appearing in the chart are not a reliable indicator of response times experienced by individual users.

Pages Used to Monitor System Performance

Page Name	Object Name	Navigation	Usage
System Performance	PSPMSYSHEALTH	PeopleTools, Performance Monitor, System Monitor, System Performance	Provides a high-level view of the performance of a monitored system displaying performance indices as well as some critical event and PMU data for the servers in your monitored system. This page acts as a "home page" for monitoring system health. For example, from the System Performance page you can access numerous related pages, such as the Web Server page, Application Server page, the Process Scheduler page, and so on.
Web Server	PSPMWEBDOM	PeopleTools, Performance Monitor, System Monitor, Web Server	Enables you to drill down into the performance data related to your web server, such as JVM Status, network status, site performance, and servlet performance.
Application Server	PSPMAPPDOM	PeopleTools, Performance Monitor, System Monitor, Application Server	Enables you to drill down into the status of an application server domain and the individual server processes running in that domain.
Process Scheduler Server	PSPMPSCHEDDOM	PeopleTools, Performance Monitor, System Monitor, Process Scheduler Server	Enables you to drill down into the status of a Process Scheduler domain, monitor the individual server processes within a domain, and monitor the resource usage.
Master Scheduler	PSPMMASTSCHEM	PeopleTools, Performance Monitor, System Monitor, Master Scheduler	Enables you to view the status of the Master Scheduler distributing workload across multiple Process Schedulers.
Open PMUs	PSPMTRANSCURR	PeopleTools, Performance Monitor, System Monitor, Open PMUs	Provides search criteria by which you can search for open PMUs, which are PMUs that have not yet completed.
Open PMU Trees	PSPMTRANSUSER	PeopleTools, Performance Monitor, System Monitor, Open PMU Trees	Enables you to search open PMUs by user and display each open PMU in a tree format.

Page Name	Object Name	Navigation	Usage
Current User Sessions	PSPMCURUSERS	PeopleTools, Performance Monitor, System Health, Current User Sessions	Enables you to view the users who are currently signed on to the system as well as view an individual user's history.

Using the System Performance Home Page

Access the System Performance page.

The System Performance page provides various health indices as well as a high-level view of the performance of your web servers, application servers, and Process Scheduler server domains. It acts as the "home page" for system performance.

Note. A Status field appears at the top of the page only if the monitoring system detects stale data, which is data that is older than the specified event sampling rate. For example, if your event sample rate is 300 seconds, and no events have been received from a specific domain in over five minutes, then that domain is considered stale. Stale data could indicate an outage on the monitored system or the monitored system's agent filters are set to 01–Standby. If a domain has been shutdown permanently and you don't want it to appear with a stale data warning, go to the Agent Definitions page and set its domain monitor to inactive.

Viewing Performance indices

User Sessions

Displays the number of users who have signed onto the system within the last 12 hours and have not signed out.

Shows all PMU 109's (User Session Began) that do not have an associated 108 PMU (User Session Ended). These PMUs are associated by the session ID (Context 1). The User Sessions value only includes users who have signed on in the last 12 hours and only those users that have signed on since the last time the web server agent sent an Event 901 (Agent Initialization).

For details on individual users, click the Current User Sessions link.

Note. If users do not click the Sign out link on a PeopleSoft page and instead close the browser or navigate to another site, then the system displays them as current users until the web server time out value is reached.

Tuxedo Request Queued

Displays the number of requests queued on all application servers on the monitored system.

The value is the sum of all the metric 5's (Total pq) for Event 300's (Host Resource Status) sent by all active agents for the current system that are domain monitor agents of type application server. The value includes all Event 300 data generated within the defined sampling interval.

PMUs in Past Hour

Displays the number of PMUs that have executed in the past hour. This is an indication of the load on the monitored system, the level of monitoring, and whether the monitored system agents are currently communicating with the monitor.

The value is the sum of the rows inserted into the PSPMTRANSHIST table within the last hour.

For more details click the [Open PMUs](#) and the [Completed PMUs](#) link.

Alarms in Past Hour

Displays the number of error and warning events posted by the monitored system's active agents in the past hour.

This is the count of all events with filter levels of error and warning inserted into the PSPMEVENTHIST table in the last hour.

For more details click the [Alarm History](#) link.

Batch Jobs in Process

Displays the number of Process Scheduler jobs currently running on all the Process Scheduler servers belonging to that monitored system.

The value is the sum of all metric 1's for Event 350 (Master Scheduler Status).

For more details click the [Master Scheduler](#) link.

Note. If a Master Scheduler is not configured for the monitored system, this value is zero.

Batch Jobs in Queue

Displays the number of Process Scheduler jobs currently waiting to be assigned by the Master Scheduler.

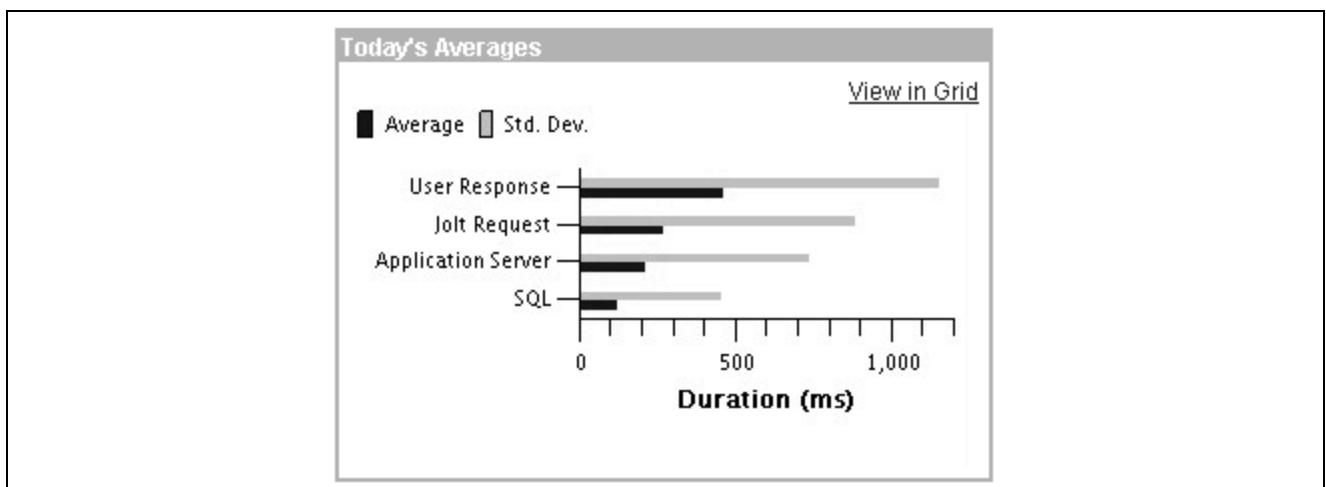
The value is the sum of all metric 2's for Event 350 (Master Scheduler Status).

Note. If a Master Scheduler is not configured for the monitored system, this value is zero.

Today's Averages

The Today's Averages chart displays the average duration of various performance factors within your PeopleSoft system. The data only applies to the current day, which refers to all data collected since midnight.

If there is a bottleneck in the system, this chart enables you to identify which tier is affected and enables you to monitor Tuxedo queuing.



Today's Averages chart

User Response	Displays the average amount of time end users waited for server round trips to complete. A user is waiting for a server round trip to complete when "Processing" appears in the upper, right-hand corner of a PeopleSoft page.
	Note. This average does not include network latency. It is the average duration of all top-level PMU 101's (PIA Request) that the monitoring system has received since midnight.
Jolt Request	Displays the average and standard deviation of all PMU 115's (Jolt Request) received since midnight.
Application Server	Displays the average and standard deviation of the duration of all PMU 400's (Tuxedo Service PeopleCode and SQL Summary) received since midnight.
SQL	<p>Displays the average and standard deviation for the time spent executing SQL statements initiated from PeopleCode in a single application server request. This value includes the time required for SQL Prepare, Execute, Fetch and Commit.</p> <p>PeopleCode SQL statements are executed by application code written using PeopleCode and submitted to the database by way of SQLEXECs and or SQL Objects.</p> <p>This value is derived from metrics 2, 3, and 4 from PMU 400 (Tuxedo Service PeopleCode and SQL Summary). Namely, this value includes PeopleCode SQL, PeopleCode Built-in SQL, and PeopleTools SQL.</p>
	Note. This is the average time spent for executing all SQL statements of these types in a single application server request. The system calculates this value using all data received since midnight.

Web Server Domains

The Web Server Domains grid contains a row for each active domain monitor web server agent. The metric information is derived from Event 150 (JVM status) and Event 151 (Network Status). The system retrieves only the most recent event for each agent. If the most recent event's monitor date/time is older than the system's event sample rate, the Stale Data icon appears in the grid row *and* at the top of the page.

Note. Web server agents do not report performance data until the first user connects to that web server.

Name	<p>Displays the PeopleSoft web server domain name being monitored.</p> <p>Click the name to go to the Web Server page for that web server. It's the same page you access when you select PeopleTools, Performance Monitor, System Monitor, Web Server and choose that domain.</p>
Host/Port	Identifies the web server domain host name and listening port numbers for HTTP and HTTPS.
Filter Level	<p>Appears on pages displaying current performance information related to servers, such as application servers, web servers, and so on. Displays the current agent filter level.</p> <p>The colors indicate:</p> <ul style="list-style-type: none"> • Blue = Standby, Error, and Warning.

- Green = Standard.
- Orange = Verbose.
- Red = Debug.

Roll the cursor over the icon to show a popup message displaying the agent filter level in text format.

Sessions in Web App	Displays the number of servlet sessions in the portal web application.
%JVM Memory Used	A Java Virtual Machine (JVM) has a specific amount of memory allocated to it. This metric displays the percentage of the allocated memory that the JVM is currently using.
Execute Threads	The number of threads used by the web application to service incoming requests.
Established Sockets	The number of sockets in a connected state. This is a measure of the number of active users.
Jolt Traffic	Displays the per second amount (in bytes) of Jolt traffic between the web server and the application server.

Application Server Domains/Process Scheduler Server Domains

The application server and Process Scheduler Server grids contain a row for each active domain monitor agent running on the application server or Process Scheduler server. The metric information on each row is derived from Event 300 (Host Resource Status). The system retrieves only the most recent event for each agent. If the most recent event's monitor date/time is older than the system's event sample rate, the Stale Data icon appears in the grid row *and* at the top of the page.

Note. When first booted, an active server may have a stale data warning until a full sampling interval has passed.

Domain Name	Displays the names of the domains being monitored. Click on the domain name to go to the Application Server or the Process Scheduler page for additional details on a particular domain. It's the same page you access when you select PeopleTools, Performance Monitor, System Monitor, Application Server or Process Scheduler and choose that domain.
Host/Port	Displays the server name or IP address and the Jolt listening port number.
Filter Level	Appears on pages displaying current performance information related to servers, such as application servers, web servers, and so on. Displays the current agent filter level. The colors indicate: <ul style="list-style-type: none"> • Blue = Standby, Error, and Warning. • Green = Standard. • Orange = Verbose. • Red = Debug. Roll the cursor over the icon to show a popup message displaying the agent filter level in text format.

%CPU Used	Displays the percentage of the Central Processing Unit capacity being utilized on the host. This percentage includes the entire processing load on the host, not just that of PeopleSoft.
%Memory Used	Displays the percentage of physical memory being utilized on the host. This percentage includes all memory used on the host, not just the memory used by PeopleSoft.
Hard Page Faults/Second	This is the number of accesses to virtual memory in the last second that require disk reads on the host. This metric applies to all memory access on the host, not just the memory accessed by PeopleSoft.
Total Tuxedo Connections	This is the number of connections to this domain, and it is equivalent to the number of rows returned by the Tuxedo command pelt (tmadmin), excluding JSH and WSH connections. This value does not apply to Process Scheduler.
Total Tuxedo Requests Queued	The number of Tuxedo requests queued on that domain. A high number indicates that there are insufficient server processes configured, or that the load on the host machine is too high. This value does not apply to Process Scheduler.

Ping Test

PeopleSoft Ping is a diagnostic feature that allows you to troubleshoot systemic performance issues. If you enter the ping URLs for the monitored systems in the URL catalog, you can launch the ping test from the monitoring system instead of having to sign on to the monitored system.

The following requirements must be in place:

- Single signon must be configured between the monitored and monitoring system.
- Current user ID must be a valid user ID in both the monitored and monitoring system.
- Current user ID must have permission to access the PSPing page in the monitored system.

Any system that you intend to ping must have an entry in the URL catalog for the PSPing page. The URL must contain "PTPERF_TEST" in order for the URL to appear in the ping lists associated with the PeopleSoft Performance Monitor. For example,

```
http://server_name/psp/ps[_newwin]/EMPLOYEE/PT_LOCAL/c/UTILITIES.PTPERF_TEST.GBL
```

Note. In a self-monitoring system, you must append the text "_newwin" to the end of the site name on which you are running the ping test. The "_newwin" indicates to PeopleSoft that the content can run in a new window at the same time content from a different component runs in the previous window.

See *Enterprise PeopleTools 8.45 PeopleBook: System and Server Administration*, "Using PeopleTools Utilities," Using PeopleSoft Ping.

See *Enterprise PeopleTools 8.45 PeopleBook: Security Administration*, "Setting up Digital Certificates and Single Signon," Setting Up Single Signon.

URL Identifier	Select the URL of the system you want to ping.
Execute PSPing	Click to launch the PeopleSoft Ping page at the URL appearing in the <i>URL Identifier</i> field. The page appears in a new window. If that system is monitored, when you run Ping the system reports the results displayed on the Ping page to the monitoring system in the form of Event 600's (PSPING).

View PSPing History	<p>Launches the Event History search page displaying all Event 600 (PSPING) data for the current day on the current system.</p> <p>Verify that you ping the appropriate system. PeopleSoft runs no internal verification to check that the system you ping is the system which this page is monitoring.</p>
----------------------------	---

Viewing Web Server Performance

Access the Web Server page.

The Web Server page displays the most recent performance data received from a web server domain monitor. A domain corresponds to the domain specified during the PeopleSoft installation.

Domain Name	A domain monitor starts when the first user connects to any site in a PeopleSoft web server domain. The domain name is the name of this site.
Domain Directory	The directory on the web server where the PeopleSoft site that triggered the domain monitor resides.
Filter Level	<p>Appears on pages displaying current performance information related to servers, such as application servers, web servers, and so on. Displays the current agent filter level.</p> <p>The colors indicate:</p> <ul style="list-style-type: none"> • Blue = Standby, Error, and Warning. • Green = Standard. • Orange = Verbose. • Red = Debug. <p>Roll the cursor over the icon to show a popup message displaying the agent filter level in text format.</p>
Agent Date/Time	<p>The date and time according to the agent clock that the domain monitor used when it last sent performance data to the monitor.</p> <hr/> <p>Note. The date and the time appearing on this page always applies to the system on which the agent runs. Keep this in mind if you are monitoring systems in other time zones.</p> <hr/>
Status	Appears only if the system detects stale data. Performance data is stale if no status events have been reported in the last sample interval for the system. For example, <i>Status</i> shows stale data if the web server is not booted.
Host/Port	The host of the web server and the listening ports for HTTP and HTTPS.
Monitor Date/Time	The date and time that the monitoring system inserted the row of performance data into the monitoring database according to the database clock.
Last Page Refresh	Indicates the most recent time that the system refreshed the page either by loading the page into the browser or as a result of a user clicking the Refresh button.

Web Server Snapshot This link enables you to view historical information snapshots for the current agent. By clicking this link, you see a list of all the domain agent timestamps for the current domain monitor agent Event 150 (JVM Status). After selecting a particular timestamp, the system displays the Web Server page containing web server performance information for that particular time. When viewing snapshot information, a message appears at the top of the page reminding you that the page contains historical performance data. You can view numerous snapshots using the same method.

Note. While viewing snapshots, the Refresh button is not available. To view the most current web server information, you must access the Web Server page using the menu.

System Performance This link takes you to the System Performance page (the home page for system monitoring).

JVM Status

The JVM status applies to the status of the JVM in which the site runs. Multiple web sites within the same PeopleSoft domain can run within the same JVM.

These values are derived from Event 150 (JVM Status). If the latest Event 150 monitor date/time is older than the event sample rate for the current agent's system, the Stale Data icon appears at the top of the page.

%JVM Memory Used A Java Virtual Machine (JVM) has a specific amount of memory allocated to it. This metric displays the percentage of the allocated memory that the JVM is currently using.

Max JVM Memory Available Indicates the maximum amount of memory available for the JVM. This value depends on the Java Runtime Environment (JRE).
The maximum JVM memory available equals $\text{maxMemory} - \text{totalMemory} + \text{freeMemory}$.

Sessions in Web-App Displays the number of servlet sessions in the portal web application.

Execute Threads The number of threads used by the web application to service incoming requests.

Busy Threads The number of threads currently servicing requests.

Domain Count The number of domain monitors in this web server domain. The domain count will only be greater than 1, if a web server domain has sites belonging to different monitored systems.

The Events and PMUs tab contains links to the Event History, Open PMUs, and Completed PMUs components.

When transferring to the Event History component, the system automatically displays all of the data for the current day's Event 150 (JVM Status) rows for the current agent and the current system.

When transferring to the Open PMUs component, the system automatically displays all of the data for the current day's open PMUs for the current host/port and the current system.

When transferring to the Completed PMUs component, the system automatically displays all of the data for the current day's completed PMUs for the current host/port and the current system.

Network Status

Network status data corresponds to

- Output from the domain monitor running the "netstat —a" command in a shell on the monitored host.
- Counters maintained by the domain monitor.

These values are derived from Event 151 (Network Status).

If there is no Event 151 or the Event 151 has an agent date/time that does not match the agent date/time of the Event 150 (JVM Status) shown at the top portion of the page, this grid appears empty.

Time Wait Sockets	Number of sockets in a TCP time wait state on the host on which the web server is running. A high count may mean that the time wait setting for the operating system of the server needs to be decreased, or it may just mean that there is a very high load on that server.
Close Wait Sockets	Number of sockets in a TCP close wait state on the host on which the web server is running. A high count means that TCP clients are not closing connections and may indicate network or software configuration issues.
Established Sockets	The number of sockets in a connected state. This is a measure of the number of users connected.
Jolt Traffic	Displays in bytes per second the amount of Jolt traffic between the web server and the application server.

Note. Jolt Traffic value is zero unless compression is enabled.

HTTP Indicates the HTTP traffic in bytes per second generated by this web server.

The Events and PMUs tab contains links to the associated Event History, Open PMUs, and Completed PMUs.

When transferring to the Event History component, the system automatically displays all of the data for the current day's Event 151 (Network Status) rows for the current agent and the current system.

When transferring to the Open PMUs component, the system automatically displays all of the data for the current day's open PMUs for the current host/port and the current system.

When transferring to the Completed PMUs component, the system automatically displays all of the data for the current day's completed PMUs for the current host/port and the current system.

Sites

The information on this grid applies to all sites on this web server even if they are not monitored sites.

These values are derived from Event 152 (Web Site Status).

If there is no Event 152 or the Event 152 rows have an agent date/time that does not match the agent date/time of the Event 150 (JVM Status), the grid appears empty.

Site Path	Indicates the directory on the web server where the site resides.
Requests to all Servlets	Indicates the number of requests that have been submitted to all of the servlets running within the site.
Servlet Requests (last minute)	Indicates the number of servlet requests submitted to the site in the last minute.

Avg. Request Time (last minute)	Indicates the average duration of the servlet requests submitted to the site in the last minute.
Time in all Servlets	Indicates the sum of durations of the servlet requests submitted to the site since the web server was last booted.
Current Sessions	The number of sessions that are active within the site. Active sessions are those that are currently waiting for a request to be processed. In most cases, this value is 0. However, if your site is running slowly or a transaction has a long duration, this value is greater than 0.

The Events and PMUs tab contains links to the associated Event History, Open PMUs, and Completed PMUs.

When transferring to the Event History component, the system automatically displays all of the data for the current day's Event 152 (Web Site Status) rows for the current agent and the current system.

When transferring to the Open PMUs component, the system automatically displays all of the data for the current day's open PMUs for the current agent and the current system.

When transferring to the Completed PMUs component, the system automatically displays all of the data for the current day's completed PMUs for the agent and the current system.

Active Servlets

Active servlets are all servlets running in the portal web application.

These values are derived from Event 153 (Web Servlet Status).

Servlet Name	Identifies the name of a particular servlet.
Requests to this Servlet	Indicates the number of requests submitted to a particular servlet.
Servlet Requests (last minute)	Indicates the number of requests submitted to a particular servlet within the last minute.
Avg. Request Time (last minute)	The average duration of the requests handled by the servlet in the last minute.
Time in this Servlet	The sum of durations of requests handled by this servlet since the web server was last booted.

Viewing Application Server Domain Performance

Access the Application Server Domain page.

The Application Server Domain page displays the most recent performance data received from:

- An application server domain monitor.
- Each active application server agent within that application server domain.

Domain Name	Identifies the name of the current Tuxedo domain.
Domain Directory	Identifies the directory in which the domain is installed.

Agent Date/Time	The date and time according to the agent clock that the domain monitor used when it last sent performance data to the monitor.
<hr/>	
Note. The date and the time appearing on this page always applies to the system on which the agent runs. Keep this in mind if you are monitoring systems in other time zones.	
<hr/>	
Status	Appears only if the system detects stale data. Data is stale if no status events have been reported in the last sample interval for the system. For example, Status shows stale data if the application server is not booted.
Host/Port	Identifies the machine name and Jolt listening port of the application server domain.
Application Server Snapshots	This link enables you to view historical information snapshots for the current agent. By clicking this link, you see a list of all the domain agent timestamps for the current agent's Event 300 (Host Resource Status). After selecting a particular timestamp, the system displays the Application Server page containing performance information for that particular time. When viewing snapshot information, a message appears at the top of the page reminding you that the page contains historical performance data. You can view numerous snapshots using the same method.
<hr/>	
Note. While viewing snapshots, the Refresh button is not available. To view the most current information, you must access the Application Server page using the menu.	
<hr/>	
Monitor Date/Time	The date and time that the monitoring system inserted the row of performance data into the monitoring database according to the database clock.
Last Page Refresh	Indicates the most recent time that the system refreshed the page either by loading the page into the browser or as a result of a user clicking the Refresh button.

See [Chapter 6, "Monitoring System Performance," Understanding the Events that Monitor Resource Usage, page 78.](#)

Host Resource Status

The Metrics tab presents the same values that also appear on the System Performance page. The metrics show current resource utilization on the entire host machine, not just the resources that PeopleSoft uses.

The system derives these metrics from the most recent Event 300 (Host Resource Status) for the domain monitor process of that domain.

If the latest Event 300 monitor date/time is older than the event sample rate for the current agent's system, the Stale Data icon appears at the top of the page.

%CPU Used	Displays the percentage of the Central Processing Unit capacity being utilized on the host machine.
%Memory Used	Displays the percentage of physical memory being utilized on the host machine.
Hard Page Faults/Second	This is the number of accesses to virtual memory in the last second that require disk reads.

Total Tuxedo Connections	This is the number of connections to this domain, and it is equivalent to the number of rows returned by the Tuxedo command <code>pclt</code> (<code>tmadmin</code>), excluding JSH and WSH connections.
Total Tuxedo Requests Queued	The number of Tuxedo requests queued on that demand. A high number indicates that there are insufficient server processes configured, or that the load on the host machine is too high.

The Events and PMUs tab presents links to the Event History, Open PMUs, and Completed PMUs pages.

When transferring to the Event History component, the system displays all of the data for the current day's Event 300 (Host Resource Status) rows for the current agent and the current system.

When transferring to the Open PMUs component, the system displays all of the data for the current day's open PMUs for the current host/port and the current system.

When transferring to the Completed PMUs component, the system displays all of the data for the current day's completed PMUs for the current host/port and the current system.

PQ Event Rows

This section presents the results of the `tmadmin pq` command (print queue). It enables you to view information related to the Tuxedo queues used by the server processes running within a domain.

The grid displays all Event 301 (Tuxedo "pq" Row) rows for the current agent with the same agent date/time appearing in the top portion of the page as the Event 300 (Host Resource Status).

Queue Name	Identifies the Tuxedo queue associated with a server process.
Server Name	Indicates the server process servicing a particular queue.
Server Count	Indicates the number of a particular server process type that are currently running. For example, it indicates that three PSAPPSRV server processes are currently running.
Queue Length	Indicates the current length of the queue, which is measured by the number of requests waiting to be processed. High queue lengths may indicate that more server processes need to be configured to run.

PSR Event Rows

This section presents the results of the `tmadmin psr` command (print server processes). This enables you to view information related to all the server processes (monitored and unmonitored) running within a domain.

The grid displays all Event 302 (Tuxedo "psr" Row) rows for the current agent with the same agent date/time appearing at the top of the page as the Event 300 (Host Resource Status).

Server Name	Indicates the name of the server process, such as PSAPPSRV, PSMONITORSRV, and so on.
Server Instance ID	This is the instance ID assigned by Tuxedo to each server process. This number remains constant across recycles. Even if the PID changes, the instance ID remains constant.
PID	Indicates the operating system process ID on the server.

Total Requests	Indicates the total number of requests a server process has processed. Tuxedo continues to increment this number for a server instance even if the server recycles.
Current Service	Indicates whether the server process is idle or currently handling a request.

Monitored Servers

This section enables you to view information about the resources consumed by the monitored server processes running within a domain.

The grid displays an entry for each active application server agent within the same system and same host/port and domain directory as the domain monitor agent. For each agent, the system retrieves the latest Event 200 (Resources Per Process) and its metrics are displayed. If there is no Event 200 for a particular agent, the system displays zeros.

The Metrics tab contains the following information.

Server	Identifies the server process being monitored.
Server Instance	This is the instance ID assigned by Tuxedo to each server process. This number remains constant across recycles. Even if the PID changes, the instance ID remains constant.
PID	The process ID assigned by the server operating system.
Agent Date/Time	The date and time according to the agent clock that the domain monitor used when it last sent performance data to the monitor.

Note. The date and the time appearing on this page always applies to the system on which the agent runs. Keep this in mind if you are monitoring systems in other time zones.

%CPU Used	Indicates the percentage of the CPU capacity that a particular server process is using.
CPU Time	The amount of CPU time that the process has consumed.
VM	Indicates the amount of virtual memory each server process is consuming.

The Events and PMUs tab contains links to the Event History, Open PMUs, and Completed PMUs pages.

When transferring to the Event History component, the system displays all data for the current day's Event 200 (Resources Per Process) rows for the current agent and the current system.

When transferring to the Open PMUs component, the system displays all data for the current day's open PMUs for the current agent and the current system.

When transferring to the Completed PMUs component, the system displays all data for the current day's completed PMUs for the agent and the current system.

Viewing Process Scheduler Server Performance

Access the Process Scheduler Server page.

The Process Scheduler Server page displays the most recent performance data received from:

- A Process Scheduler server domain agent.
- Each active Process Scheduler server agent within this Process Scheduler domain.

Domain Name	Identifies the name of the current domain.
Domain Directory	Identifies the directory in which the domain is installed.
Agent Date/Time	The date and time according to the agent clock that the domain monitor used when it last sent performance data to the monitor.

Note. The date and the time appearing on this page always applies to the system on which the agent runs. Keep this in mind if you are monitoring systems in other time zones.

Status	Appears only if the system detects stale data. Data is stale if no status events have been reported in the last sample interval for the system. For example, Status shows stale data if the Process Scheduler is not booted.
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Host/Port	Identifies the machine name of the Process Scheduler server domain.
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Process Scheduler Snapshots	This link enables you to view historical information snapshots for the current agent. By clicking this link, you see a list of all the domain monitor timestamps for the current agent's Event 300 (Host Resource Status). After selecting a particular timestamp, the system displays the Process Scheduler Server page containing performance information for that particular time. When viewing snapshot information, a message appears at the top of the page reminding you that the page contains historical performance data. You can view numerous snapshots using the same method.
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Note. While viewing snapshots, the Refresh button is not available. To view the most current information, you must access the Process Scheduler Server page using the menu.

Monitor Date/Time	The date and time that the monitoring system inserted the row of performance data into the monitoring database according to the database clock.
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Last Page Refresh	Indicates the most recent time that the system refreshed the page either by loading the page into the browser or as a result of a user clicking the Refresh button.
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See [Chapter 6, "Monitoring System Performance," Understanding the Events that Monitor Resource Usage, page 78.](#)

Host Resource Status

The Metrics tab presents the values that also appear on the System Performance page.

If the latest Event 300 (Host Resource Status) monitor date/time is older than the event sample rate for the current agent's system, the Stale Data icon appears at the top of the page.

%CPU Used	Displays the percentage of the Central Processing Unit capacity being utilized on the host machine.
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%Memory Used	Displays the percentage of physical memory being utilized on the host machine.
Hard Page Faults/Second	This is the number of accesses to virtual memory in the last second that require disk reads.
Total Tuxedo Connections	This number is always zero for a Process Scheduler domain.
Total Tuxedo Requests Queued	The number of Tuxedo requests queued on that demand. A high number indicates that there are insufficient server processes configured, or that the load on the host machine is too high.

The Events and PMUs tab presents links to the Event History, Open PMUs, and Completed PMUs pages.

When transferring to the Event History component, the system displays all of the data for the current day's Event 300 (Host Resource Status) rows for the current agent and the current system.

When transferring to the Open PMUs component, the system displays all of the data for the current day's open PMUs for the current host/port and the current system.

When transferring to the Completed PMUs component, the system displays all of the data for the current day's completed PMUs for the current host/port and the current system.

PQ Event Rows

This section presents the results of the `tmadmin pq` command (print queue). It enables you to view information related to the queues used by the server processes running within a domain.

The performance data displays all Event 301 (Tuxedo "pq" Row) rows for the current agent with the same agent date/time appearing in the top portion of the page as the Event 300 (Host Resource Status).

Queue Name	Identifies the Tuxedo queue associated with a server process.
Server Name	Indicates the server process servicing a particular queue.
Server Count	Indicates the number of a particular server process type that are currently running. For example, it indicates that three PSAESRV server processes are currently running.
Queue Length	Indicates the current length of the queue, which is measured by the number of requests waiting to be processed.

PSR Event Rows

This section presents the results of the `tmadmin psr` command (print server processes). This enables you to view information related to all the server processes (monitored and unmonitored) running within a domain.

The grid displays all Event 302 (Tuxedo "psr" Row) rows for the current agent with the same agent date/time appearing at the top of the page as the Event 300 (Host Resource Status).

Server Name	Indicates the name of the server process, such as PSAESRV, PSMONITORSRV, and so on.
Server Instance ID	This is the instance ID assigned by Tuxedo to each server process. This number remains constant across recycles. Even if the PID changes, the instance ID remains constant.
PID	Indicates the operating system process ID on the server.
Total Requests	Indicates the total number of requests a server process has processed.

Current Service Indicates whether the server process is idle or currently handling a request.

Monitored Servers

This section enables you to view information about the resources consumed by the monitored server processes running within a domain.

Note. Currently, only PSMONITORSRV and PSMSTPRC are monitored.

The grid displays an entry for each active application server agent within the same system and same host/port and domain directory as the domain monitor agent. For each agent, the system retrieves the latest Event 200 (Resources Per Process) and its metrics are displayed. If there is no Event 200 for a particular agent, the system displays zeros.

The Metrics tab contains the following information.

Server	Identifies the server process being monitored.
Server Instance	This is the instance ID assigned by Tuxedo to each server process. This number remains constant across recycles. Even if the PID changes, the instance ID remains constant.
PID	The process ID assigned by the server operating system.
Agent Date/Time	The date and time according to the agent clock that the domain monitor used when it last sent performance data to the monitor.

Note. The date and the time appearing on this page always applies to the system on which the agent runs. Keep this in mind if you are monitoring systems in other time zones.

%CPU Used	Indicates the percentage of the CPU capacity that a particular server process is using.
CPU Time	The amount of CPU time that the process has consumed.
VM	Indicates the amount of virtual memory each server process is consuming.

The Events and PMUs tab contains links to the Event History, Open PMUs, and Completed PMUs pages.

When transferring to the Event History component, the system displays all data for the current day's Event 200 (Resources Per Process) rows for the current agent and the current system.

When transferring to the Open PMUs component, the system displays all data for the current day's open PMUs for the current agent and the current system.

When transferring to the Completed PMUs component, the system displays all data for the current day's completed PMUs for the agent and the current system.

Viewing Master Scheduler Performance

Access the Master Scheduler page.

This page displays the most recent performance data received from a Master Scheduler agent.

Note. The PeopleSoft Performance Monitor only displays Master Scheduler performance data if a Master Scheduler has been configured.

System ID	Identifies each monitored system. PeopleSoft automatically generates this value incrementally. System definitions are created automatically when the first agent of a monitored system registers with the monitoring system.
Database Name	Reveals the name of the PeopleSoft application database running on the monitored system. The monitoring system automatically inserts this value when it recognizes and creates a monitored system.
Agent Date/Time	The date and time according to the agent clock that the domain monitor used when it last sent performance data to the monitor.
	<hr/> <p>Note. The date and the time appearing on this page always applies to the system on which the agent runs. Keep this in mind if you are monitoring systems in other time zones.</p> <hr/>
Status	Appears only if the system detects stale data. Data is stale if it is older than the sample rate for that system. Data is stale if no status events have been reported in the last sample interval for the system. For example, Status shows stale data if the Process Scheduler is not booted.
Monitor Date/Time	The date and time that the monitoring system inserted the row of performance data into the monitoring database according to the database clock
Last Page Refresh	Indicates the most recent time that the system refreshed the page either by loading the page into the browser or as a result of a user clicking the Refresh button.

Process Summary

This process displays the status of the processes being managed by the Master Scheduler running on the selected system.

The data in this grid is derived from Event 350 (Master Scheduler Status).

Active Processes	The number of Process Scheduler jobs that are currently processing in this monitored system.
Unused Process Slots	The number of available slots that can be used to run process requests by this Master Scheduler.
Blocked Processes	There are two ways a process can be <i>blocked</i> : <ul style="list-style-type: none"> • The process is "mutually exclusive" with another process, and the other process is currently running. • The process is dependent on a file that another process has yet to create.
Queued Processes	The number of Process Scheduler jobs that are currently waiting to be handled by an available Process Scheduler server.

Servers

The Servers grid contains performance metrics for individual Process Scheduler servers running under the Master Scheduler.

This grid displays all Event 351 (Master Scheduler Detail) rows for all active Process Scheduler servers under the current system with the same agent date/time as the latest Event 350 (Master Scheduler Status). The system groups the data by server name and the metrics are accumulated.

Note. If the monitor date/time for an Event 351 is older than the current system's event sample rate, a Stale Data icon appears at the top of the page.

Server Name	The name of the Process Scheduler server, such as PSNT, PSUNIX, and so on. The server name is a hyperlink that launches a Server Activity secondary page for that particular server type. The Server Activity page displays all of the individual Event 351 (Master Scheduler Detail) rows. Use the Refresh button on this page to refresh the Processes grid.
Active Processes	The number of jobs currently being handled by a Process Scheduler server.

Queue Details

The Queue grid displays the status of the processes queued to be processed by the Master Scheduler.

The data is generated from Event 354 (Batch Queue Details) rows for all active Process Scheduler agents in the current system with the same agent date and time as the latest Event 350 (Master Scheduler Status).

Process Type	Displays the type of process queued, such as SQR, Application Engine, COBOL, and so on.
Queued Processes	Displays the number of processes queued per process type.
Blocked Processes	There are two ways a process can be <i>blocked</i> : <ul style="list-style-type: none"> • The process is "mutually exclusive" with another process, and the other process is currently running. • The process is dependent on a file that another process has yet to create.

Viewing Open PMUs

Access the Open PMUs page.

An open PMU is a PMU that started but has not completed prior to an agent reporting performance metrics to the monitor. Information regarding open PMUs are stored in PSPMTRANSCURR table. When the PMU completes, the PSPPMSRV flags the PMU for deletion and inserts a matching row into the PSPMTRANSHIST table, which stores completed PMU data.

See [Chapter 4, "Administering the PeopleSoft Performance Monitor," Scheduling the Reaper Program, page 34.](#)

If an end user is reporting that a PeopleSoft page is slow (displays the "Processing..." message), use the Open PMU page to see where the request has stalled. Search for that user's name to see the current state of their open PMUs.

Before you view current PMU details, you need to enter search criteria. If you don't specify specific criteria, the page displays *all* of the open PMUs for the selected system.

User ID	<p>If you want information per user, enter the user ID of the user for which you want to track current PMUs.</p> <p>The user ID prompts against the PSPMOPRDEFN table, which is populated by the Lookup Application Engine program.</p>
Performance Trace Name	<p>You enter the performance trace name to search on currently open PMUs running within a particular trace.</p> <p>If a user has launched a performance trace in the Performance Console, the system labels every PMU generated in a business process with a performance trace name.</p> <p>The performance trace name prompts against the PSPMPERFTRACE table, which is populated by the Lookup Application Engine program.</p>
Component	<p>If you want information per component, enter the name of the component for which you want to track completed PMUs.</p> <p>The component prompts against the PSPMPNLGRPDEFN table, which is populated by the Lookup Application Engine program.</p> <hr/> <p>Note. Searching on Component is equivalent to searching on Context 1 for application server PMUs.</p> <hr/>
Market	<p>Select the market associated with the component.</p>
PMU Set	<p>Indicates the set to which the PMU definition belongs.</p> <p>A PMU definition set is similar to a message set.</p> <p>To view the complete set of PMU set definitions, select PeopleSoft Performance Monitor, Utilities, PMU Definitions.</p> <p>See Chapter 10, "Working with Performance Monitor Meta-Data," Understanding PMU Definitions, page 133.</p>
PMU ID	<p>Identifies the PMU definition within a PMU definition set.</p> <p>To view the complete set of PMU definitions, select PeopleSoft Performance Monitor, Utilities, PMU Definitions.</p>
Context 1, 2, 3	<p>PMU metrics contain data specific to that PMU. Context values, on the other hand, are common to the entire user request or a specific tier. For example, Component Name is stored in a context for all PMU's generated by an application server while it is processing that component. The system uses contexts to "flatten" a PMU tree. For example, you do not have to navigate up from a SQL PMU to an ICPanel PMU to see what component generated that SQL statement.</p> <p>In some cases, a parent PMU determines the usage of a child PMU's context fields. In such cases, the context label for the child PMU type is "Generic."</p> <p>Use the Context Help button to view the context definitions for a PMU Set ID and ID that you've entered.</p>

See [Chapter 10, “Working with Performance Monitor Meta-Data,” Understanding Context Definitions, page 132.](#)

Top Instance	Each PMU reported by an agent has a unique instance ID. The instance identifier of the first PMU generated by a particular user request is the Top Instance. The value of the Top Instance is then stored with every child PMU within a request. The Top Instance is the associating value for all PMUs generated by the same user request. Use this search field when you already know the Top Instance of the PMU in which you are interested.
Instance Identifier	Each PMU reported by an agent has a unique instance ID.
Duration >=/<	Specify criteria related to the duration of a PMU. The duration is the difference between the current monitor database time and the date and time that the monitor received the open PMU. The system searches for PMUs with a duration greater than or equal to the value you enter, or less than the value you enter. The value is in seconds.
Domain Name	Select the application server, web server, or Process Scheduler domain of the agent process reporting the PMUs.
Domain Host/Port	Select the host name and port number of the application server, web server, or Process Scheduler domain from which the PMUs were reported.
Agent ID	Select the agent which reported the PMUs.
Agent Type	Select agent type, such as PSAPPSRV, PSQRYSRV, or PSQCKSRV, which reported the PMUs.

Note. Some of the metrics for various PMUs don't have values until the PMU completes, so in some cases, metrics may appear with no values.

Open PMUs

The following information appears on the Summary tab.

PMU	Displays the label for that PMU type.
Duration	Displays the duration of the PMU.
PMU Details	The string generated by concatenating all of the contexts and metrics selected for display in the PMU definition.
User ID	Identifies the user whose request generated the PMU.
Action	The action could be <i>Start</i> or <i>Update</i> . Every PMU has a <i>Start</i> , which refers to a request initiating the PMU. The <i>Update</i> action applies to long running PMUs, which the PeopleSoft Performance Monitor updates periodically with the latest metric values.
Monitor Received Date/Time	Indicates when the monitor system received notification that a PMU had been started or updated.
Agent Start Date/Time	Indicates that time according to the agent clock that the last update was generated.

The Identifiers tab presents the following additional information.

PMU Set	Indicates the set to which the PMU definition belongs. A PMU definition set is similar to a message set. To view the complete set of PMU set definitions, select PeopleTools, Performance Monitor, Administration, Meta-data, PMU Definitions.
PMU ID	Identifies the PMU definition within a PMU definition set. See Chapter 10, “Working with Performance Monitor Meta-Data,” Understanding PMU Definitions, page 133.
Agent ID	Identifies the agent that reported the PMU information.
Domain Name	The domain from which the PMU was reported.
Monitor Last Update Date/Time	The Monitor Date/Time of the most recent event of a specific event type received from a specific agent.
Agent Last Update Date/Time	Indicates that time according to the agent clock that the last update was received.
PID	The operating system process ID of the process that generated the PMU.
Instance	PMU instance ID. Each PMU has a unique instance ID.
Parent Instance	The instance ID of the parent PMU.
Top Instance	Each PMU reported by an agent has a unique instance ID. The instance identifier of the first PMU generated by a particular user request is the Top Instance. The value of the Top Instance is then stored with every child PMU within a request. The Top Instance is the associating value for all PMUs generated by the same user request.

The Contexts tab displays the context information associated with a particular PMU.

The Metrics tab displays the metric information associated with a particular PMU.

Viewing Open PMU Trees

Access the Open PMU Trees page.

Every user request generates a set of PMUs that you can display as a tree. The PMU with the top instance ID is the root of the tree and PMUs with no children are the leaves. A node represents each PMU or child PMU. Clicking on a node reveals its details.

The shaded text flags the node of the currently processing PMU.

A search may return multiple PMU trees. For example, if a user ID is shared across multiple users, or a single user has initiated multiple browser sessions, then there may be more than one user request currently processing, and therefore more than one PMU tree open.

The data related to open PMUs is dynamic due to the fact that the system is currently processing the PMU. Therefore, the composition of trees, and even their presence, is likely to change each time you click Refresh.

If you have an open PMU tree captured using the standard agent filter mode, you can drill down to the detail of PMU 400 (Tuxedo Service PCode and SQL). The Current SQL Statement shows what has been submitted to the application server. This can aid in troubleshooting long running SQL or a hung query without increasing the agent filter and asking users to repeat the process. If the open PMU completes, then the PMU row is marked for deletion by the reaper program. You can't access the current SQL statement if the PMU has completed.

Note. So that the presentation of PMU information is readable and manageable, if a PMU is older than a day, the system displays the date that the PMU executed, not its duration in milliseconds.

Note. For each PMU in the tree, the duration value represents the period of time that has elapsed since the monitoring system received the start timestamp for each PMU. In some cases, the display may indicate that a child PMU is "older" than its parent. For example, if the application server sent PMU information before the web server sent PMU information, the child PMUs running on the application server will display a smaller duration than the associated parent PMUs running on the web server.

User ID	Enter the user ID of the user initiating the PMU(s). You must specify a user ID to view open PMU trees.
Total Trees received	The number of currently open PMU trees for the user. Corresponds to the number of open requests for this user.
Currently displaying	Indicates the PMU tree that is currently displayed on the page, providing orientation in a list of returned PMU trees.
Previous Tree/Next Tree	Enables you to navigate within a list of PMU trees.
Open PMU Tree	PMU trees can be expanded or collapsed using the folder icon to the left. Click on a node to view details regarding that PMU. Use the Left Right links to navigate within a single tree once the tree is 20 nodes deep.

Viewing Current User Sessions

Access the Current User Sessions page.

A row appears for every PMU 109 (User Session Began) received in the last 12 hours for which a matching PMU 108 (User Session Ended) has not been received.

Note. If you recycle the web server during this time, the user session is considered closed.

The Session tab contains the following information.

User ID	Identifies the user.
Session ID	Indicates the open session on the web server associated with the user.
Monitor Received Date/Time	The date and time that the monitoring system inserted the row of performance data into the monitoring database.
User History	Takes you to the User History page.

See [Chapter 7, “Analyzing Historical Performance Data,” Viewing User Session History, page 95.](#)

The Details tab contains the following additional information.

The latency and user agent data is derived from PMU 116 (Redirect after Login) with the same session ID (Context 1) as the associated PMU 109 (User Session Began).

IP Address	Indicates the IP Address of the machine the user is using to connect to the PeopleSoft system.
User Agent	Mozilla user-agent string specification for the user’s browser.
Latency	The duration of PMU 116 (Redirect After Login). The latency value enables you to infer the network latency for a user connection.

Understanding the Events that Monitor Resource Usage

This section provides additional information that may help you to interpret the information that PeopleSoft Performance Monitor provides related to the events reporting resource usage on host machines. These events are:

- Event 150 (JVM Status).
- Event 151 (Network Status).
- Event 200 (Resources Per Process).
- Event 300 (Host Resource Status).
- Event 301 (Tuxedo "pq" Row).
- Event 302 (Tuxedo "psr" Row).

These events report the usage of machine resources (CPU, memory, network, and so on). These events, except for Event 150 (JVM Status) make calls to external APIs (often specific to the operating system) to retrieve metric information. The monitored system sends each event at the sampling interval specified for that system.

Working with Event 150 (JVM Status)

This event applies only to web servers.

This event does not make calls to any operating system-specific API.

Working with Event 151 (Network Status)

This event applies only to web servers.

For Event 151 (Network Status) the system launches a separate executable from Java that invokes the "netstat -n" command. On UNIX, the command runs in a separate shell. When the command completes, the process ends. PeopleSoft does not run "netstat" with an interval argument.

Warning! On some platforms the "netstat" command can require up to a minute (or more) to complete. If the sampling interval is shorter than the time required for the command to complete, "netstat" commands will be running continuously.

Working with Event 200 (Resources Per Process)

This event applies to the application server and the Process Scheduler server.

PeopleSoft makes specific operating system calls to obtain metrics for %CPU used by the process, CPU time consumed, virtual memory size, and working set size. Operating systems have slightly different definitions for these quantities and different ways of reporting them. For instance, "working set" memory is a Windows term; "resident set" is the UNIX equivalent. PeopleSoft strives for consistency across platforms. For example, PeopleSoft expresses %CPU within a range from 0 to 100 on all machines even though some vendors scale to $N*100\%$ if there are multiple CPUs (N CPUs).

Windows, Tru64 and Linux compute one or more resources as an average of the two measurements at the beginning and end of a sampling interval. On these platforms, the PeopleSoft Performance Monitor does not report an Event 200 (Resources Per Process) until the second sampling interval after you boot a server.

Process resource utilization is usually sampled by the operating system and written to a memory location. Windows writes to the registry, while UNIX writes to various files. The system reads the current values for the process, so events change only when the operating system updates the statistics. Most operating systems update these statistics at least once per second.

PeopleSoft obtains all information using lightweight, C++ programmatic APIs. No additional processes or shell commands are executed.

Operating System	Description
Windows	<p>PeopleSoft Performance Monitor uses Performance Data Helper (PDH) to read registry counters. The information is identical to the Windows Performance Monitor tool. When multiple copies of a process, such as PSAPPSRV, are executing, registry counters are assigned arbitrarily. For example, counter 1 and counter 2 can reverse their process assignment when a process reboots. PeopleSoft Performance Monitor corrects for this.</p> <ul style="list-style-type: none"> • CPU utilization is "% Processor Time", defined as the fraction of time the process spends in kernel + user during the last PDH sampling interval (typically one second). • Process time is kernel + user, accurate to 1 millisecond. • Virtual memory is "Virtual Bytes." • Working set memory is "Working Set," which is the same as "Mem Usage" displayed by the Windows Task Manager.

Operating System	Description
AIX	<p>PeopleSoft Performance Monitor reads the psinfo files, which is the same source of information AIX uses for its "ps" command.</p> <ul style="list-style-type: none"> • CPU utilization is the same as "ps -o pcpu" or the %CPU from "ps v". AIX defines it as a lifetime average: total CPU time consumed by the process divided by total time the process has been running. • Process time is system + user, excluding children. Accurate to 10 milliseconds. • Virtual memory is the same as "ps -o vsz", or the 1024 * SIZE field from "ps v". • Resident set memory is the same as the 1024 * RSS field from "ps v".
HPUX	<p>PeopleSoft Performance Monitor reads pst_status using pstat_getproc.</p> <ul style="list-style-type: none"> • CPU utilization is the same as "top" divided by the number of CPUs (on HPUX "top" shows utilization of a single CPU). • Process time is system + user, excluding children. • Virtual memory is the same as the SIZE field from "top". • Resident set memory is the same as the RES field from "top".
Linux	<p>PeopleSoft Performance Monitor reads ps information from /proc files.</p> <ul style="list-style-type: none"> • CPU utilization is the same as "top" divided by the number of CPUs (on Linux "top" shows utilization of a single CPU). It is the average utilization over the last sample period. • Process time is system + user, excluding children, and accurate to 10 milliseconds. The times for all threads in the process are added together. <hr/> <p>Warning! Linux kernel 2.4 tracks only the process time of each thread. PeopleSoft searches the /proc directory to find all threads and report the total time of the process. However, on a production system with thousands of threads, accumulating this information may take up to a second of CPU time.</p> <hr/> <ul style="list-style-type: none"> • Virtual memory is the same as "ps -o vsz" (not visible in "top"). According to the man pages, it counts just text, data, and stack. • Resident set memory is the same as "ps -o rss" (not visible in "top"). This value includes just text, data, and stack.

Operating System	Description
Solaris	<p>PeopleSoft Performance Monitor reads psinfo files, which is the same source of information Solaris uses for its "ps" command.</p> <ul style="list-style-type: none"> • CPU utilization is the same as "top". Solaris computes a moving average with exponential weighting. • Process time is system + user, excluding children, and accurate to 10 milliseconds. • Virtual memory is the same as "ps -o vsz" or the SIZE field from "top". • Resident set memory is the same as "ps -o rss" or the RES field from "top". On Solaris, shared libraries are counted in RES but not in SIZE.
Tru64	<p>PeopleSoft Performance Monitor reads psinfo files using the ioctl API.</p> <ul style="list-style-type: none"> • CPU utilization is the same as "top" and "ps", divided by the number of CPUs (on Tru64 each process shows utilization of a single CPU). Tru64 computes a moving average over a period of just a few seconds. PeopleSoft displays utilization measured by CPU time consumed over the last sample period. • Process time is system + user, excluding children, and accurate to 10 milliseconds. • Virtual memory is the same as "ps -o vsz" or the SIZE field from "top". • Resident set memory is the same as "ps -o rss" or the RES field from "top." On Tru64, shared libraries are counted in RES.
OS/390	<p>The only metric supported in the current release is Process Time.</p>

Working with Event 300 (Host Resource Status)

This event applies to the application server and the Process Scheduler server.

PeopleSoft Performance Monitor makes specific operating system calls to obtain metrics for %CPU use on the host machine, %Memory use, and the hard page fault rate. Operating systems have slightly different definitions for these quantities, and they have different ways of reporting them. In most cases, PeopleSoft expresses %Memory use to reflect utilization of physical memory.

PeopleSoft Performance Monitor programmatically queries the Tuxedo management information base (MIB) for total Jolt connections and total requests queued. All platforms compute one or more resources as an average of the two measurements at the beginning and end of a sampling interval. PeopleSoft Performance Monitor does not report an Event 300 (Host Resource Status) until the second sampling interval after you boot the server.

Process resource utilization is usually sampled by the operating system and written to a memory location. Windows writes to the registry, while UNIX writes to various files. The system reads the current values for the process, so events change only when the operating system updates the statistics. Most operating systems update these statistics at least once per second.

PeopleSoft obtains all information using lightweight, C++ programmatic APIs. No additional processes or shell commands are executed.

Operating System	Description
Windows	<p>PeopleSoft Performance Monitor uses Performance Data Helper (PDH) to read registry counters. The information is identical to the Windows Performance Monitor tool.</p> <ul style="list-style-type: none"> • CPU utilization is "% Processor Time (_Total)", defined as the fraction of time not executed by the system idle thread in the last PDH sampling interval (typically one second). • Memory utilization is "% Committed Bytes In Use" and will change if the paging file is extended by the system administrator. • Page faults is "Pages / sec", which reports actual disk page fetches ("Page Faults /sec" reports soft faults).
AIX	<p>PeopleSoft Performance Monitor uses libperfstat API (a wrapper for knlist) to read kernel counters.</p> <ul style="list-style-type: none"> • CPU utilization is the same as "topas" and "vmstat". This is an average over the last sample period, but process CPU use is an average over process lifetime. Therefore, on AIX, it is possible for machine CPU use to be momentarily smaller than CPU use of a process that was previously CPU-intensive. • Memory utilization is defined as "free real pages" / "total real memory pages". The "vmstat" command shows the number of free pages, but not the available total. The "topas" field, Real MEMORY, shows "real memory pages." The PAGING SPACE field shows only reserved pages, not free pages. • Page faults is the same as "topas" and "vmstat", with the absolute difference averaged over the last sampling time. According to Linux information, this value includes pages faults that do not cause paging activity.
HPUX	<p>PeopleSoft Performance Monitor uses pstat_getdynamic (pstat) to read kernel counters.</p> <ul style="list-style-type: none"> • CPU utilization is the same as "top" and "vmstat". This is an average over the last sample period, but process CPU use is an average over a longer time period. Therefore, it is possible on HPUX for machine CPU use to be momentarily smaller than CPU use of a process that was previously CPU-intensive. • Memory utilization is defined as "real memory + text pages / physical memory." Neither of these quantities are exposed with vmstat. • Page faults is the same as "vmstat -s, zero fill page faults", with the absolute difference averaged to a rate over the last sampling time.

Operating System	Description
Linux	<p>PeopleSoft Performance Monitor reads kernel statistics from files in /proc.</p> <ul style="list-style-type: none"> • CPU utilization is the same as "top", averaged over all processors. This is an average over the last sample period. • Memory utilization is the same as "top", or the "free" command "Mem used / (av)ailable" field. It measures physical memory utilization. The "used" field is actually "available - free". The "M" and "K" units of "top" are 1024 * 1024 bytes and 1024 bytes, respectively. • Page faults is the first "page" kernel counter from /proc/stat (pages swapped in from disk), with the absolute difference averaged to a rate over the last sampling time.
Solaris	<p>PeopleSoft Performance Monitor uses the Kernel Statistics API (kstat) to read kernel counters.</p> <ul style="list-style-type: none"> • CPU utilization is the same as "top, user + kernel". This is an average over the last sample period, but process CPU use is a weighted average over a longer time period. Therefore, it is possible on Solaris for machine CPU use to be momentarily smaller than CPU use of a process that was previously CPU-intensive. • Memory utilization is defined as the "used / used + available" fields from "swap -s". This is only an approximation because of allocated but unreserved RAM. See the Sun web site for more information. • Page faults is the same as major page faults from "vmstat -s", with the absolute difference averaged to a rate over the last sampling time.

Operating System	Description
Tru64	<p>PeopleSoft Performance Monitor uses the table API (table) to read kernel counters.</p> <ul style="list-style-type: none"> • CPU utilization is the same as "top, user + nice + system". This is an average over the last sample period. • Memory utilization is the same as "top, Real Memory", also same as "vmstat -P, Managed Pages, (active + ubx) / Total". To convert to the "M bytes" of "top", multiply by getpagesize and divide by 1024 * 1024. • Page faults is the same as zero fill page faults from "vmstat -s", with the absolute difference averaged to a rate over the last sampling time.
OS/390	<p>PeopleSoft Performance Monitor uses the ERBSMFI and CVT APIs to report resource use on the logical partition. Higher priority jobs on other partitions can "steal" resources and not appear in these metrics.</p> <ul style="list-style-type: none"> • CPU utilization is the same as RMF "TOTAL /AVERAGE LPAR BUSY TIME PERC" field. • Memory utilization is defined from the RMF "AVAILABLE" versus RMF "TOTAL FRAMES" fields. • Page faults is not supported for this release.

Working with Event 301 (Tuxedo "pq Rows)

This event applies to the application server and the Process Scheduler server.

The system programmatically queries the Tuxedo management information base (MIB) for the status of each queue.

Working with Event 302 (Tuxedo "psr" Rows)

This event applies to the application server and the Process Scheduler server.

The system programmatically queries the Tuxedo management information base (MIB) for the status of each server. Only PeopleSoft servers appear as PeopleSoft Performance Monitor events; the BBL is not reported.

CHAPTER 7

Analyzing Historical Performance Data

This chapter provides an overview and discusses how to:

- View completed PMUs.
- View event history.
- View user history.

Understanding Historical Performance Data

This section provides an overview and discusses the navigation and usage of the pages used to analyze historical performance data.

Using Historical Performance Data

The system stores historical data from the moment a PMU is completes processing or an event occurs. When the archive program runs (PSPM_ARCHIVE), it either deletes the historical data or moves it to the archive tables.

Analyzing historical data can help you:

- Identify trends.
By comparing historical data, you can spot upward and downward performance trends.
- Investigate past user complaints.

For example, a user may complain that performance was slow during the previous week. You search historical performance data to find the PMUs generated by the user at a specific time a week ago.

Pages Used to Analyze Historical Performance Data

Note. The charting pages appear under the History menu, however, those pages are covered in a separate chapter.

Page Name	Object Name	Navigation	Usage
Completed PMUs	PSPMTRANSIST	PeopleTools, Performance Monitor, History, Completed PMUs	Enables you to search for and display PMU details and trees.
Event History	PSPMEVENTHIST	PeopleTools, Performance Monitor, History, Event History	Enables you to search for and display Event details.
User Session History	PSPMHISTUSERS	PeopleTools, Performance Monitor, History, User History	Enables you to view a user's signon and signout activity within a specified interval of time.

See Also

[Chapter 8, "Working with PeopleSoft Performance Monitor Charts and Analytics," page 97](#)

Viewing Completed PMUs

Access the Completed PMUs page.

Note. Inactive agent information appears in the historical data.

Note. If a "clone table" warning appears at the top of the page, it indicates that the archive program is either currently running or has abnormally terminated. If this is the case, all new incoming information being sent to the monitoring system is currently being inserted into the clone tables. New performance data is not inserted into the current data tables until the archive program completes successfully.

Entering Search Criteria

Before you can view information about completed PMUs, you need to enter criteria so that you can locate the appropriate completed PMUs.

Use the Advanced Search link to expose all search criteria.

The maximum rows returned by the search depends on the Search Row Limit value set on the Global Administration page.

See [Chapter 4, "Administering the PeopleSoft Performance Monitor," Setting Global System Options, page 25.](#)

System ID	Identifies each monitored system. PeopleSoft automatically generates this value incrementally. System definitions are created automatically when the first agent of a monitored system registers with the monitoring system.
Database Name	The name of the PeopleSoft application database running on the monitored system. The monitoring system automatically inserts this value when it recognizes and creates a monitored system.
User ID	If you want information for a particular user, enter the user ID of the user for which you want to track completed PMUs.

	This field prompts against PSPMOPRDEFN.
Performance Trace Name	<p>If a user has launched a performance trace in the Performance Trace Console, the system labels every PMU generated in a business process with a performance trace name. Select the appropriate trace name to view its results.</p> <p>The Performance Trace Name field prompts against the PSPMPERFTRACE table, which the Lookup program (PSPM_LOOKUP) populates.</p>
Component	<p>If you want information for a particular component, enter the name of the component for which you want to track completed PMUs.</p> <p>This field prompts against PSPMPNLGRPDEFN.</p> <hr/> <p>Note. Searching on component is equivalent to searching on Context 1 for application server PMUs.</p> <hr/>
Market	Enter the market associated with the component.
PMU Definition Set	<p>Indicates the set to which the PMU definition belongs. A PMU definition set is similar to a message set.</p> <p>Required if you want to generate Metric and Duration charts.</p>
PMU Identifier	<p>Identifies the PMU definition within a PMU definition set.</p> <p>Required if you want to generate Metric and Duration charts.</p>
Context 1, 2, 3	<p>PMU metrics contain data specific to that PMU. Context values, on the other hand, are common to the entire user request or a specific tier. For example, Component Name is stored in a context. The system uses contexts to "flatten" a PMU tree. For example, you do not have to navigate up from a SQL PMU to an ICPanel PMU to see what component generated that SQL statement. In some cases, PMU types are shared across different user request types. In such cases, the label for the PMU will be generic. Use the Context Help button to view the context definitions for a PMU Set ID and ID that you've entered.</p>
PMU Status	<p>Displays the PMU status.</p> <p>See Chapter 7, "Analyzing Historical Performance Data," Understanding Completed PMU Status, page 91.</p>
Top Instance	<p>Each PMU reported by an agent has a unique instance ID. The instance identifier of the first PMU generated by a particular user request is the Top Instance. The value of the Top Instance is then stored with every child PMU within a request. The Top Instance is the associating value for all PMUs generated by the same user request.</p>
Statement Number	<p>This search field applies only when searching for PeopleCode SQL PMUs, which are PMU 406 (PeopleCode SQL Execute) and PMU 407 (PeopleCode BuiltIn SQL Execute). The Context 2 field contains the PeopleCode Program Name and Metric 2 contains the Statement Number in the PeopleCode where the SQL was executed.</p> <p>To search by statement number, the following search criteria must be entered: PMU Definition Set = 1, PMU ID = 406 or 407, and Context 2 must have the name of a PeopleCode program name.</p>

From Date/Time To Date/Time	Specify a range of time in which the system should search for completed PMUs. The system searches on the monitor date and time, not the agent date and time.
Duration	Specify criteria related to the duration of a PMU in milliseconds.
Domain Name	Select the application server domain generating the PMUs.
Domain Host/Port	Select the name and port number of the server machine on which the domain that generated the PMU resides.
Agent Identifier	Identify the specific agent that monitored a PMU.
Agent Type	Identify the type of agent that monitored a PMU.
Search	The Search button executes a search based on the search criteria defined on the page. If you want to view the most current information, use the Refresh button after running the initial search. If you click Search repeatedly, the system returns the same results from the same time range for each search.
Refresh	Updates the To Time value to equal the current time and executes a search. Enables you to view the most current results of a search.

Working with Completed PMUs

At the bottom of the Completed PMUs page, the Completed PMUs grid contains the information related to the PMUs retrieved by your search criteria. The tabs in the Completed PMU's section are discussed in the following sections.

Summary

PMU	Indicates the name of the PMU. Click on the PMU name to view the PMU Details page.
Duration	Indicates the duration of the PMU from start to finish in milliseconds.
Complete Tree	Click the tree icon to view the complete PMU tree including all ancestor and descendant PMUs.
PMU Details	Provides further description of the PMU. The details are comprised of contexts and metrics that are helpful for identifying the PMU. Each type of PMU displays a different set of details.
User	Indicates the user whose request triggered the PMU.
PMU Status	Displays the PMU status. See Chapter 7, “Analyzing Historical Performance Data,” Understanding Completed PMU Status, page 91.
Monitor Received Date/Time	Indicates when the monitor system received notification that a PMU had been started or updated.
Agent Start Date/Time	Indicates that time according to the agent clock that the last update was received.
Domain Name	Indicates the domain that handled the request associated with the PMU.

Identifiers

The Identifiers tab presents the following additional information.

PMU Set	Identifies the set to which the PMU ID belongs.
PMU ID	Identifies a PMU definition within a PMU set.
Agent ID	Identifies the agent that reported the PMU.
Process ID	The operating system process ID of the process that generated the PMU.
Instance	A unique identifier generated by the system for each PMU.
Parent Instance	The PMU that spawned the PMU in this grid row.
Top Instance	Each PMU reported by an agent has a unique instance ID. The instance identifier of the first PMU generated by a particular user request is the Top Instance. The value of the Top Instance is then stored with every child PMU within a request. The Top Instance is the value that associates all PMUs generated by the same user request.

Contexts

The Contexts tab reveals the context definition and value associated with each PMU in the grid. To view the details of the contexts in a PMU, examine the context and PMU definitions.

This Description column shows data for the Additional Description value that is part of the incoming PMU. The description stores large character values and generally stores information that exceeds the 128-character limit of Metric 7 and the 254-character limit of the contexts.

See [Chapter 10, “Working with Performance Monitor Meta-Data,” Understanding Context Definitions, page 132.](#)

Metrics

The Metrics tab presents the metric values for all of the metrics defined for each PMU in the grid.

Metric information appears in a raw format. The values reflect exactly what is stored in the database.

See [Chapter 10, “Working with Performance Monitor Meta-Data,” Understanding Metric Definitions, page 130.](#)

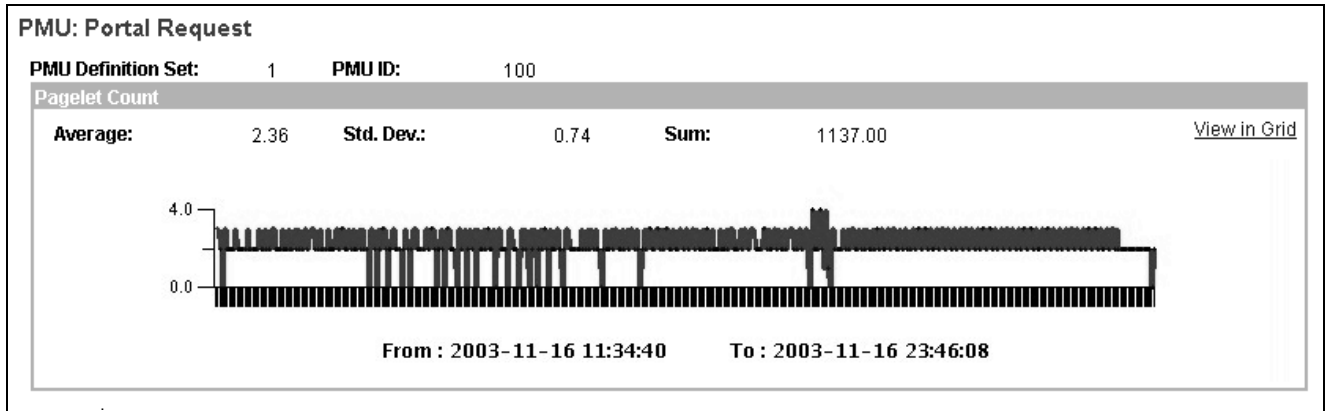
Trees

The Trees tab enables you to view the PMU within the context of a PMU tree.

View Ancestors	Shows all parent PMUs for the selected PMU. This may be useful in determining the call tree of a child PMU. Only direct ancestors appear; sibling PMUs do not appear.
View Descendants	Shows all child PMUs for the selected PMU. This may be useful in determining where the time is spent for a PMU.
Complete Tree	Displays the entire tree representing the user request. If verbose or debug filters are set, this tree may contain a large number of nodes and may take a significant amount of time to load.

Metric Charts

When your search criteria includes a PMU Set and PMU Identifier, all rows in the grid will be of the same type of PMU. In this case, the metric chart displays the metric values of the returned PMUs against one another. This enables you to track metrics over a period of time.



Viewing a Metric Chart

Numeric metrics may be of type Counter, Gauge, or Numeric Identifier. Numeric Identifiers do not appear in charts. Gauges and counters do appear in charts, but the chart does not contain a sum value for gauges.

Use the View in Grid link to view the chart information in a grid so that you can download the information to an Excel spreadsheet if needed.

Note. If the metrics of a PMU can't be charted, a message appears stating this fact.

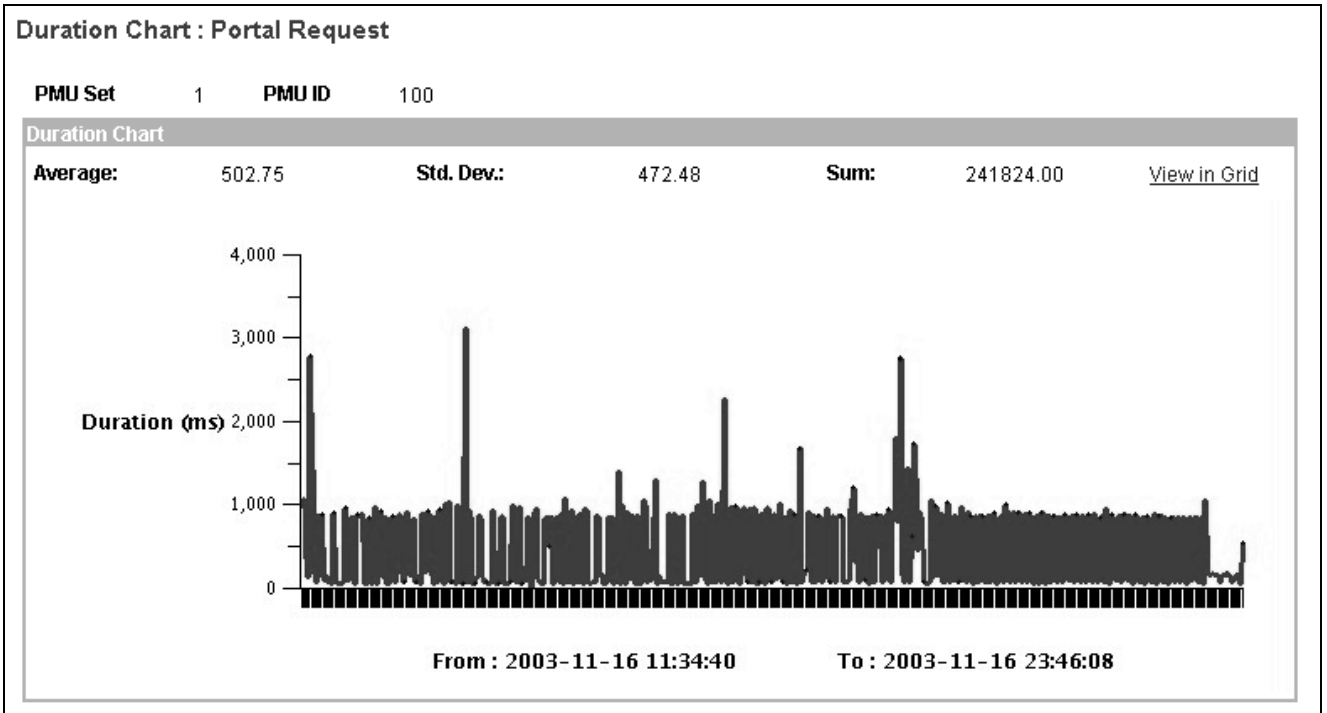
Note. To view the metric chart you must specify a PMU and PMU Set ID as part of the search criteria. If you click this link when performance data for multiple PMUs appears, the system displays an error message.

Note. That data appearing on this chart is not manipulated by multipliers, if any are used.

See [Chapter 10, "Working with Performance Monitor Meta-Data," Understanding Metric Definitions, page 130.](#)

Duration Charts

The duration charts show all durations for all PMUs appearing in the grid. The chart is time-based.



Viewing a Duration Chart

Use the View in Grid link to view the chart information in a grid so that you can download the information to an Excel spreadsheet if needed.

Note. To view the duration chart, you must specify a PMU and PMU Set ID as part of the search criteria. If you click this link when performance data for multiple PMUs appears, the system displays an error message.

Understanding Completed PMU Status

A completed PMU can be assigned one of the following statuses:

Status	Description
Success	The PMU completed successfully.
Failed	The PMU completed unsuccessfully.
Abort	Instrumentation code terminated a PMU due to an unexpected condition.
Unknown	Assigned in situations when an agent closes a child PMU if the top-level PMU closes out of sequence.
Timeout	Instrumentation code timed out the PMU.
Reaper Timeout	Long running PMU closed by the Reaper.
Admin Timeout	An administrator manually closed the PMU. This is <i>not</i> currently implemented.

Understanding the PMU Details Page

You can access the PMU details page from a variety Performance Monitor pages, such as the Completed PMUs page and the Open PMUs page. You can also access it readily from trees. To access the page you click on the link created from the PMU name.

The PMU Details page indicates:

- PMU ID and the PMU definition set to which it belongs.
- Identification information.
- Durations information including metric values.
- Context information.
- Additional Data.

The information that appears on the PMU Details page varies depending on the type of PMU displayed. All metrics are formatted according to information from the metric definition.

See [Chapter 10, “Working with Performance Monitor Meta-Data,” Understanding Metric Definitions, page 130.](#)

Viewing Event History

Access the Event History page.

Note. Previous information sent by agents that are now inactive, still appears in this component.

Entering Search Criteria

Before you can view historical performance data related to events, you need to specify search criteria. This section covers the search criteria for event history.

Click the Advanced Search link to expose all of the search criteria options.

System ID	Identifies each monitored system. PeopleSoft automatically generates this value incrementally. System definitions are created automatically when the first agent of a monitored system registers with the monitoring system.
Database Name	The name of the PeopleSoft application database running on the monitored system. The monitoring system automatically inserts this value when it recognizes and creates a monitored system.
Event Definition Set	Enter the event definition set to which the event definition belongs. Currently, only one definition set exists, and it is reserved for PeopleSoft development.
Event ID	Select a particular event you wish to monitor, such as event 300, Host Resource Status.
From/To Date/Time	Specify the range of time in which you want to locate event history. The system searches the monitor date and time, not agent date and time.

Domain Host/Port	If you want to monitor events on a particular server, select the server name/IP address and port number on which the domain runs.
Domain Name	If you want to monitor events pertaining to a particular domain, select the application server, web server, or Process Scheduler domain for which you want to view event information.
Agent ID	Enter specific agent information if desired. Identifies an agent within a domain. This is automatically generated by the monitor the first time an agent registers with it.
Agent Type	Specify the type of server process the agent is monitoring, such as PSAPPSRV, PSQRYSRV, PSQCKSRV, and so on.
Filter Level	To view only the information returned of a specific filter level, select the desired filter level. For example, if you only wanted to view Error alarms, select Error, and the system only returns event information of type Error. Each event definition has a filter level set to one of the following: error, warning, standard, verbose, or debug. Error and warning levels are associated with alarms, while standard, verbose, and debug levels are associated with informational performance data. The icon associated with each category of filter level (alarm or informational) appears in the grid enabling you to recognize event information easily.
Metric Chart	The system only creates a metric chart when you have selected a single event in the search criteria. The metrics that appear in the charts vary depending on the event definition.
Search	The Search button executes a search based on the search criteria defined on the page. If you want to view the most current information, use the Refresh button after running the initial search. If you click Search repeatedly, the system returns the same results from the same time range for each search.
Refresh	Updates the To Time value to equal the current time and executes a search. Enables you to view the most current results of a search.

Working with Event History Information

The Completed Events section contains the results of your event history search.

Note. If a "clone table" warning appears at the top of the page, it indicates that the archive program is either currently running or has abnormally terminated. If this is the case, all new incoming information being sent to the monitoring system is currently being inserted into the clone tables. New performance data is not inserted into the current data tables until the archive program completes successfully.

See [Chapter 4, "Administering the PeopleSoft Performance Monitor," Scheduling Performance Data Archiving, page 35.](#)

Summary

The Summary tab displays the name of the event as well as the Monitor Date/Time and Agent Date/Time.

The maximum number of rows returned by the search is determined by the Search Row Limit on the Global Administration page.

See [Chapter 4, “Administering the PeopleSoft Performance Monitor,” Setting Global System Options, page 25.](#)

Event	<p>Displays the name of the event reported.</p> <p>Click the event name to view the Event Details page, which provides:</p> <ul style="list-style-type: none"> • Identification information to ensure you can locate the exact source of the event. • Metric information containing the metrics measured by a particular event and the current assigned values. • Additional information depending on the event definition.
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Note. The Event Details page displays all metrics according to the metric definition.

Monitor Date/Time	The date and time that the monitoring system inserted the row of performance data into the monitoring database according to the database clock.
--------------------------	---

Agent Date/Time	The date and time according to the agent clock that the domain monitor used when it last sent performance data to the monitor.
------------------------	--

Note. The date and the time appearing on this page always applies to the system on which the agent runs. Keep this in mind if you are monitoring systems in other time zones.

Identifiers

The Identifiers tab displays information to help further identify the event and a particular event’s origin.

Event Set	The event definition set to which the event definition belongs.
Event ID	The ID for a particular event definition, such as 300 for Host Resource Status.
PID	The operating system process ID of the process that generated the PMU.
Agent ID	The ID of the specific agent sending the event information.
Domain Name	The name of the domain in which the agent operates.
Instance	The system generated identifier for a specific row of event information.
Filter Level	The filter level associated with an event definition.
Description	<p>If applicable according to the event definition, a description appears to place the event in context. For example, with the Event 301 (Tuxedo "pq" Row) the description contains the name of the server process associated with a particular queue, such as PSAPPSRV, JSL, PSSAMSRV, and so on.</p> <p>The information corresponds to the Additional Data attribute that is part of the event definition. It stores data that exceeds the 128-character limitation of Metric 7.</p>

Metrics

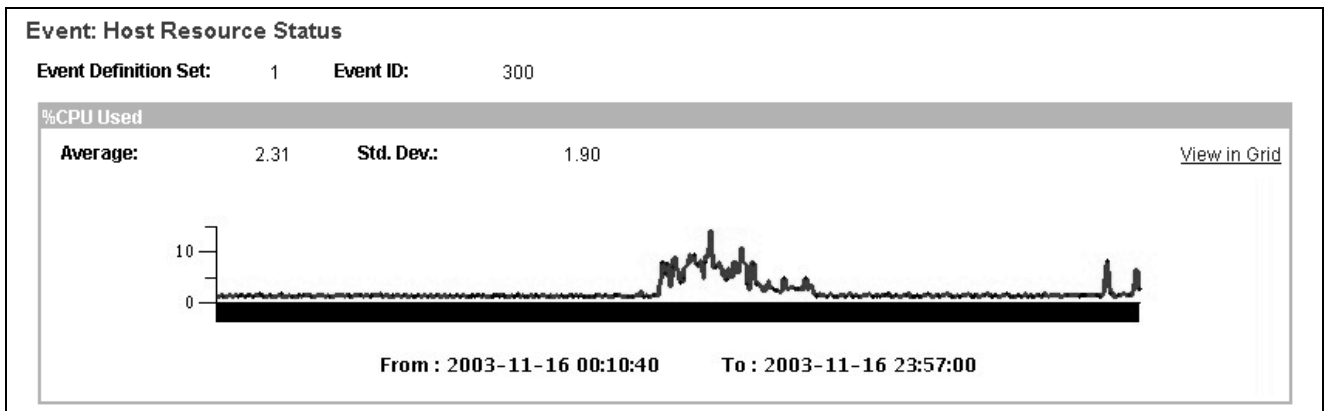
The Metrics tab displays the metric values of the event definition for a specific reported event. Only metrics specified in an event definition contain values. For example, event 300 (Host Resource Status) does not assign values to metric 6 or 7, therefore, those metrics appear on the Metrics page as *0.0000*.

Metric information appears in raw form.

See [Chapter 10, “Working with Performance Monitor Meta-Data,” Understanding Metric Definitions, page 130.](#)

Metric Charts

The system only creates a metric chart when you have selected a single event in the search criteria. The metrics that appear in the charts vary depending on the event definition.



Viewing an Event Metric Chart

Note. %CPU Used is only one of the charts that appear in the Metric Charts for Host Resource Status.

Viewing User Session History

Access the User Session History page.

The User History page enables you to monitor the signon and signout activity of a particular user within the time range specified.

A row appears for every PMU 109 (User Session Began) and every PMU 108 (User Session Ended) for that user.

Note. If you recycle the web server during this time, the user session is considered closed.

Note. Some signouts may actually be expired sessions on the web server if a user elected to close the browser rather than officially signing out of PeopleSoft (using the Sign out link).

Entering Search Criteria

Before you can view historical performance data related to users, you need to specify search criteria. This section covers the search criteria for user history.

User ID

Specify the user ID of a particular user.

This field prompts against the PSPMOPRDEFN table.

From/To Date/Time	Specify a range of time. The system searches on the monitor date and time, not the agent date and time.
Search	The Search button executes a search based on the search criteria defined on the page. If you want to view the most current information, use the Refresh button after running the initial search. If you click Search repeatedly, the system returns the same results from the same time range for each search.
Refresh	Updates the To Time value to equal the current time and executes a search. Enables you to view the most current results of a search.

Working with User History Information

The following information appears at the bottom of the User History page after you have completed a search.

Activity

The activity tab presents the following information.

User ID	Identifies a particular user.
User Activity	Shows the signon and signoff activity of the user within the range of time specified in the search criteria.
Session	The session ID on the web server. This value is derived from context 1 from PMU 108 (User Session Ended) and PMU 109 (User Session Began).
Monitor Received Date/Time	Indicates when the monitor system received notification that a PMU had been started or updated

Details

The Details tab presents the following additional information.

IP Address	The IP address of the computer from which the user accessed PeopleSoft.
User Agent	Mozilla user-agent string specification for the user's browser. This value is derived from metric 7 of PMU 116 (Redirect after Login).
Latency	The duration of PMU 116 (Redirect After Login). The latency value enables you to infer the network latency for a user connection.

Note. Both the User Agent and Latency values only appear in the rows reflecting "Logged On" user activity.

CHAPTER 8

Working with PeopleSoft Performance Monitor Charts and Analytics

This chapter provides an overview and discusses how to:

- View user request analytics.
- View component trace information.
- View component statistics.
- View portal statistics.
- View PIA statistics.
- View top portal content requests.
- View top PeopleCode events.
- View top PeopleCode executions.
- View top PeopleCode SQL statements.
- View top components.

Understanding PeopleSoft Performance Monitor Charts and Analytics

This section contains an overview and discusses the navigation and purpose of the pages used to view user request analytics.

Understanding PeopleSoft Performance Monitor Charts and Analytics

PeopleSoft Performance Monitor charts enable you to display charts and graphs that help you analyze and communicate performance information visually.

This information is derived from completed PMU data stored in the historic performance data tables.

Note. This interface is not designed to assist you in diagnosing real-time, current user issues, such as a stalled user request.

Note. The Standard Deviation (Std. Dev.) is provided on many pages. The standard deviation is a statistic that tells you how tightly all the values used to compute the average are clustered around the average. Large standard deviations warn that the averages appearing in the chart are not a reliable indicator of response times experienced by individual users.

Common Elements Used in this Section

Chart Legends	Many of the charts use color to differentiate performance data. Always use the labels and the legend to make sure you interpret the charts correctly.
View in Grid	Enables you to view chart information in a grid format for sorting and downloading to Excel.

Pages Used to View PeopleSoft Performance Monitor Charts

Page Name	Object Name	Navigation	Usage
User Requests	PSPMTRANSUSERSUM	PeopleTools, Performance Monitor, Analytics, User Requests	This page shows top-level, completed PMUs initiated by a specific user ID. A "user request" is a set of PMUs that together make up a complete round-trip to the server. You can click the bars in the chart to drill down into the details of a request (User Request Details page).
Component Trace	PSPMCOMPPERF	PeopleTools, Performance Monitor, Analytics, Component Trace	Only used in conjunction with a performance trace. This page enables you to isolate the component performance associated with a particular performance trace.
Component Statistics	PSPMCOMPSTAT	PeopleTools, Performance Monitor, Analytics, Component Statistics	Displays performance metrics related to the SQL, PeopleCode, and buffer sizes of PeopleSoft components. In addition, the page displays standard deviations and average charts.
Portal Statistics	PSPMPORTALSTATS	PeopleTools, Performance Monitor, Analytics, Portal Statistics	Displays portal activity duration per user ID within a specified interval.
PIA Statistics	PSPMPIASTATS	PeopleTools, Performance Monitor, Analytics, PIA Statistics	Displays PIA activity duration and response size per user ID within a specified interval.

Page Name	Object Name	Navigation	Usage
Top Portal Content Requests	PSPMTOPPORTAL	PeopleTools, Performance Monitor, Analytics, Top Portal Content Requests	Enables you to identify candidates for performance tuning by displaying the most requested content and the associated performance measurements.
Top PeopleCode Events	PSPMPCODEEVENTS	PeopleTools, Performance Monitor, Analytics, Top PeopleCode Events	Enables you to identify candidates for performance tuning by examining the top execution count, cumulative durations, and average durations of PeopleCode events.
Top PeopleCode Executions	PSPMTOPPCODE	PeopleTools, Performance Monitor, Analytics, Top PeopleCode Executions	Enables you to identify candidates for performance tuning by examining the top execution count, cumulative durations, and average durations of PeopleCode executions.
Top SQL Statements	PSPMSQLEVENTS	PeopleTools, Performance Monitor, Analytics, Top PeopleCode SQL Statements	Enables you to identify candidates for performance tuning by examining the top execution count, cumulative durations, and average durations of SQL statements executed by PeopleCode programs.
Top Components	PSPMCOMPEVENTS	PeopleTools, Performance Monitor, Analytics, Top Components	Enables you to identify candidates for performance tuning by examining the top execution count, cumulative durations and average durations of component actions.

Viewing User Request Analytics

Access the User Requests page.

This page shows top-level, completed PMUs initiated by a specific user ID. A "top-level" PMU is a PMU with no parent PMU. A "user request" is a set of PMUs that together make up a complete request to the monitored system.

Note. All rows in the User Request chart appear in ascending order by agent start date/time. Read the chart from the bottom to the top. If the date is the same between two adjacent rows, the system hides the date and only shows the time. If two rows have identical date/times, the system adds a number (#x) to the label to differentiate the two bars. The charting tool requires the labels of the bars to be distinct.

You must enter either the user ID or the performance trace name as part of the search criteria.

System ID	Identifies each monitored system. System definitions are created automatically when the first agent of a monitored system registers with the monitoring system.
Database Name	The name of the PeopleSoft application database running on the monitored system. The monitoring system automatically inserts this value when it recognizes and creates a monitored system.
User ID	<p>The user ID of the user who generated the request.</p> <p>The user ID field prompts against the PSPMOPRDEFN table, which is populated by the lookup program (PSPM_LOOKUP). When searching on a user ID, generally, the system attempts to match a value stored in the OPRID (user ID) field of the PMU history table. However, because some top-level PMUs have "_unknown_" as the OPRID, the system attempts a second match. If the top-level PMU contains "_unknown_" as the OPRID, the system searches for a PMU 113 (Authenticate) in the same PMU set (same top instance ID) where PMU 113 contains the given user in the OPRID field.</p>
Performance Trace Name	<p>You enter the performance trace name to search on PMUs within a particular performance trace. If a user has launched a performance trace in the Performance Console, the system labels every PMU generated in a business process with a performance trace name.</p> <p>Performance Trace Name prompts against the PSPMPERFTRACE table, which is populated by the lookup program (PSPM_LOOKUP).</p> <hr/> <p>Note. When searching using a performance trace name, the search ignores all agent IDs, so the current system ID is not relevant.</p> <hr/>
From/To Date/Time	Specify a range of time. The system searches on the monitor date and time, not the agent date and time. If you do not specify a time range, by default, the system displays information for the current day, starting at midnight (12:00 AM).
Static Scale	<p>Enables you to choose the scale of the X-axis in the User Requests chart generated from the search results. The search results appear in result sets, which are groups of 10. Select this option to view a static scale.</p> <hr/> <p>Note. Once selected, you can't deselect Static Scale until you refresh the page.</p> <hr/> <p>The system behavior for each type of scale is:</p> <ul style="list-style-type: none"> • Dynamic scale. <ul style="list-style-type: none"> The system scales the X-axis according to the longest duration in the current result set. • Static scale. <ul style="list-style-type: none"> A static scale displays the same scale for the X-axis across all of the result sets. A static scale is based on the largest duration, or bar, that exists amongst all of the result sets.
Search	The Search button executes a search based on the search criteria defined on the page. If you want to view the most current information, use the Refresh button after running the initial search. If you click Search repeatedly, the system returns the same results from the same time range for each search.

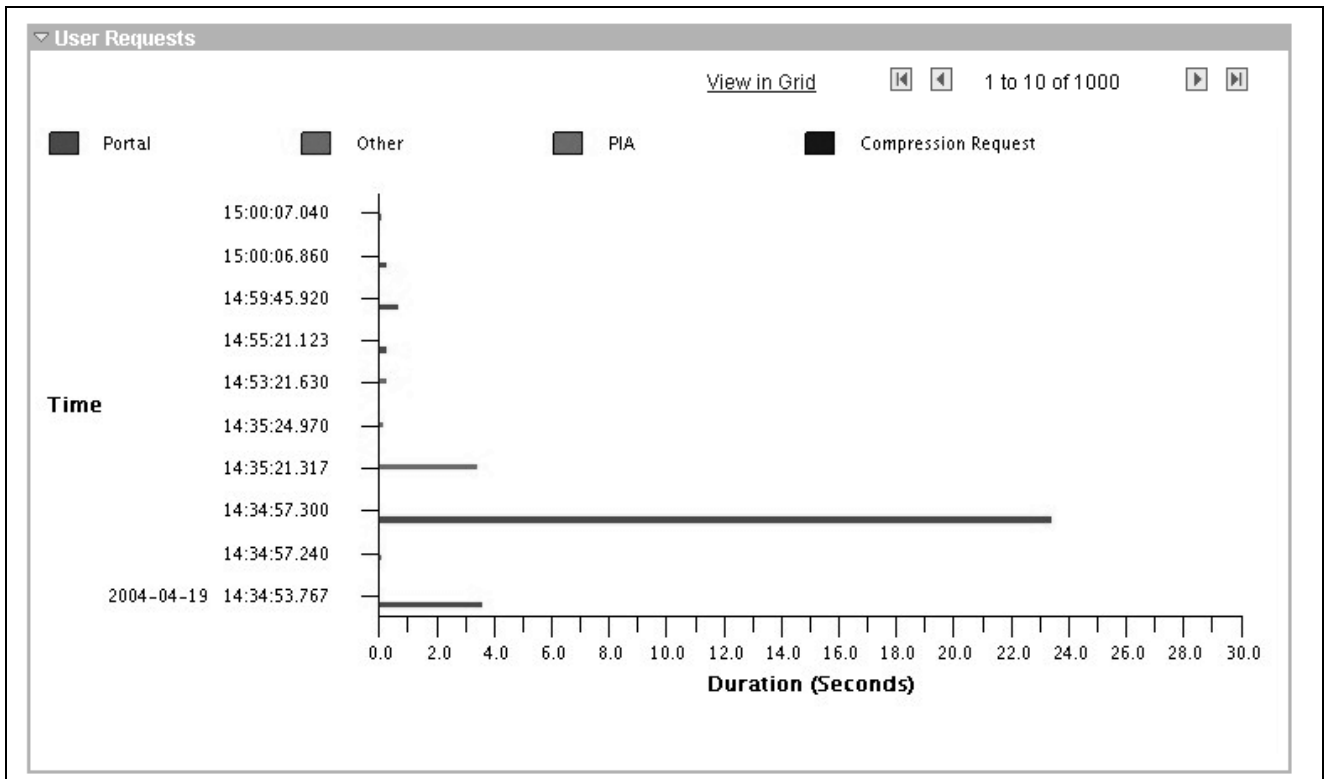
Refresh

Updates the To Time value to equal the current time before executing a search. This enables you to view the most current results of a search.

Working with the User Requests Chart

The User Requests chart reveals the time a user initiated a specific request and its duration. The system displays user requests in sets of 10.

A single user request is represented by a bar within the bar chart. You can click any bar in the graph to view the associated User Request Detail component, which enables you to drill down into the details of a user request.



User Requests chart

On this chart the View in Grid hyperlink displays the chart information in a grid for downloading and customized sorting. The grid contains a hyperlink taking you to the User Request Details page.

The rows on the chart contain popup messages that appear when you roll the cursor over the bar. The messages are:

- For PMU 100 (Portal Request), the message reads Portal: [action] Duration (secs): yyy
- For PMU 101 (PIA Request), the message reads PIA: [action] Duration (secs): yyy
- For PMU 102 (Compression Request), the message reads Compression Request: [content type] Duration (secs): yyy
- All other PMUs show the PMU label followed by the Duration

See [Chapter 8, “Working with PeopleSoft Performance Monitor Charts and Analytics,” Working with User Request Details, page 102.](#)

Working with the Request Time vs. Think Time Chart

The Request Time vs. Think Time pie chart reveals the ratio of the amount of time required for the system to process the requests in the result set against the amount of network latency and user think time. This measurement is based on the time range that you entered in the search criteria.

This chart illustrates the impact that response time has on the productivity of users in the monitored system.

Working with User Request Details

The User Request Detail page appears *only* after clicking a bar in the User Requests chart on the User Requests page. No PeopleSoft portal navigation exists for this page.

User requests are the set of PMUs that together make up a complete server round-trip. All of the PMUs in a user request have the same top instance ID.

This page displays additional information for every user request that appears within the User Requests chart.

Duration	The duration of the top-level PMU instance for the current user request.
Agent Start Date/Time	The date and time that the top-level PMU began according to the clock on the monitored system.
Monitor Received Date/Time	The date and time that the monitoring system inserted performance information related the top-level PMU into the monitoring database.
PMU Details	The PMU Details link takes you to the completed PMU component where the system automatically loads all the PMUs with the same top PMU instance into this grid.

Application Server Totals

Application Server Time	Total time spent in the application server.
Serialization Time	Time spent serializing data.
Deserializaion Time	Time spent deserializing data.
Total Cache Misses	Total number of application server cache misses for this user request. Cache misses occur when the system must retrieve metadata from the database as opposed to the application server cache. This value is the sum of metric 1 from all PMU 412 (Tuxedo Service Summary PMU) rows with the same top PMU instance.

Note. If you notice continued high cache misses or file hits, it indicates cache problems that should be investigated.

Total Cache File Hits	Total number of application server cache memory hits for this user request. Cache memory hits occur when the system retrieves metadata from the application server cache file. It is the sum of metric 2 from all Tuxedo Service Summary PMU 412 (Tuxedo Service Summary) rows with the same top PMU instance.
SQL Total Time	The total time spent processing SQL for this user request.

SQL Exec Count	The total number of SQL statements executed in this user request. This value is the sum of metric 6 from all PMU 400's (Tuxedo Service PCode and SQL PMU) rows with the same top PMU instance.
SQL Fetch Count	The total number of SQL fetches executed in this user request. This value is the sum of metric 5 from all PMU 400 (Tuxedo Service PCode and SQL PMU) rows with the same top PMU instance.
Global Variable Size	<p>The amount of memory used to store PeopleCode global variables. This is the sum of metric 6 from all the PMU 412 (Tuxedo Service Summary) rows with the same top PMU instance.</p> <p>The greater the amount of data and memory required for global variables, the greater the overhead associated with a request.</p>
Total Cache Memory Hits	Metric associated with the PMU 412 (Tuxedo Service Summary). Cache memory hits occur when the system retrieves metadata from the application server memory, not the cache file or the database.

Component PMUs

This section displays these PMUs associated with a user request:

- PMU 401 (ICPanel): The ICPanel request. Clicking on the ICPanel link launches a new browser window, which contains the component statistics for that component default from midnight to the current time.
- PMU 402 (Modal Level 1): The first modal level if one exists. The first modal level is triggered by think-time PeopleCode, such as DoModal, DoCancel, and so on.
- PMU 403 (Modal Level 2): The second modal level if one exists. The second modal level contains the modal components called from the first modal level, such as secondary pages or lookup pages.

PMU	<p>The PMU label defined in the PMU definition.</p> <p>Click this link to go to the Component Statistics page for the current component so you can compare historical performance data for that component.</p>
Name	The name of the component containing the page executing the request.
Page	The name of the page executing the request.
Action	The component action string, passed from the web server to the application server, such as Save, Search, and so on.
Duration	Duration of the PMU on that line in the grid.
Component Buffer Size	<p>This is the Component Buffer size metric in PMU 401 (ICPanel), 402 (Modal Level 1), and 403 (Modal Level 2).</p> <p>The component buffer must be deserialized by the application server when it is received from the web server, and then serialized when it is sent back to the web server. The larger the buffer, the greater the impact is of serialization overhead on the monitored system.</p>

Queries and Scripts

This section displays the metrics of these PMUs associated with the user request:

- PMU 410 (ICScript): metrics related to invoking an ICScript.

- PMU 411 (ICQuery): metrics related to invoking an ICQuery.

PMU	The type of PMU: ICScript or ICQuery.
Name	Name of the ICScript or ICQuery.
Action	The action string, passed from the web server to the application server.
Duration	The duration of the ICScript or ICQuery.

Tuxedo Service Information

This section displays the metrics of all PMU 400's (Tuxedo Service PCode and SQL) associated with the current user request.

Duration	Duration of PMU 400 (Tuxedo Service PCode and SQL).
Tuxedo Service Name	The name of the Tuxedo service executed.
Server Name	The name of the server process on the application server running the request.
Host/Port	The name of the server and the JSL port.

User Request Durations

The User Request Durations summarizes how time was spent servicing the user request. For example, it might show that the most time was spent in SQL.

Portal Time	The total time spent in the portal servlet for this request, including waits for calls to other servers. The sum of the duration of the PMU 100's (Portal Request) associated with the request.
PIA Time	The total time spent in the PIA servlet. It is a subset of the Portal time if the PIA request originated from Portal. The sum of the duration of the PMU 100's (Portal Request) and PMU 106's (PIA Request From Portal) associated with the request.
Tuxedo Service Time	The total time spent in the application server. It is a subset of the PIA time for a PIA request. A large difference between the duration of the PIA bar and the Tuxedo bar indicates that the request spent time on the web server or was queued by Tuxedo. The value is equal to the sum of the duration of the PMU 400 (Tuxedo Service PCode and SQL) rows.
PeopleCode Exec Time	This is the total time spent by the application server executing PeopleCode, including any SQL triggered from within the PeopleCode. It is a subset of the Tuxedo Service Time. The value is equal to the sum of metric 1 of the PMU 400 (Tuxedo Service PCode and SQL) rows associated with the request.
PeopleCode SQL Time	This is the total time spent by the application server executing SQLExec's and SQL objects triggered from within the PeopleCode. It is a subset of the PeopleCode Exec Time. The value is equal to the sum of metric 2 of the PMU 400 (Tuxedo Service PCode and SQL) rows associated with the requests.
PeopleCode Built-in SQL Time	This is the total time spent by the application server executing SQL triggered from within PeopleCode built-in functions such as GetNextNumber(). It is a subset of the PeopleCode Exec Time. The

value is equal to the sum of metric 3 of the PMU 400's (Tuxedo Service PCode and SQL) associated with the requests.

PeopleTools SQL Exec Time

This is the total time spent by the application server executing SQL triggered by the PeopleTools runtime. It is a subset of the Tuxedo Service Time. It may overlap with the PeopleCode Exec time. The value is equal to the sum of metric 4 of the PMU 400 (Tuxedo Service PCode and SQL) rows associated with the requests.

Note. The number of bars appearing in the graph vary per request type.

PeopleCode Durations

This chart is a summary showing which PeopleCode event types (such as SavePreChange, SavePostChange) were triggered for this user request, how many times each type was triggered, and how much time was spent in executing PeopleCode for each event type.

The PeopleCode Durations chart only contains data if a user accessed a component or executed an iScript while the filter level was set at verbose. The data is derived from PMUs 500–516.

These PMUs contain metrics for the cumulative execution count and execution time at the record field, component record, page, and component-level for each PeopleCode event type.

The number of times a particular PMU executed appears in parenthesis.

All charts have a View in Grid hyperlink to show the chart information in a grid. This enables you to sort the information and download the information to Excel spreadsheets.

Viewing Component Trace Information

Access the Component Trace page.

In order to view the Component Trace page, a user must have completed a performance trace. This page enables you to isolate the component performance information within a particular performance trace. The information presented *only* applies to component processing.

Note. To gain the most performance data and a clearer insight into component activity, the performance trace generating the trace information should be run in debug or verbose mode.

Performance Trace Name	Displays the name of the trace, which is typically the end user's user ID, but can be whatever name entered by the end user in the Performance Trace Name edit box on the Performance Trace Console.
Monitor Start Date and Time	Displays the date and time that the monitor began receiving performance information for a particular performance trace.
First Component	Identifies the first component accessed during the performance trace.
Component Cache Status	Enables you to determine whether the objects associated with a component were accessed from the application server cache or retrieved from the database during the performance trace.
Server Round Trips	Displays the number of server round trips related to component processing that were completed during a particular performance trace.

SQL Executes	Displays the number of SQL programs executed during component processing.
SQL Fetches	Displays the number of SQL fetches executed during component processing.
PeopleCode Program Executions	Displays the number of PeopleCode programs executed during component processing.
Email XML File	Enables you to email the data from the Component Trace page in an XML format so that you can share the information with colleagues or PeopleSoft consultants.

Warnings

The Warnings section contains any warnings that may alert you to situations in the trace that may cause discrepancies in or misunderstandings of the trace results. For example, if particular component objects were not fully cached at the time of the trace, a warning appears notifying you of this. Production systems usually cache all frequently accessed objects for better performance. Objects that are not cached can skew results as once an object is fully cached, performance when accessing that object typically increases dramatically. The Description column provides details of the warning and provides considerations or remedies where appropriate.

A warning message appears if the performance trace is not run in debug mode.

Duration Summary

You see a duration summary if the user ran the performance trace with standard or higher filter level.

The Duration section contains information regarding the duration of the entire performance trace as well other elements of the performance trace, such as the time spent processing SQL and the time spent processing PeopleCode. For example, the duration information may show that the time for the total trace was 50 seconds, and 22 seconds were spent processing SQL while 15 seconds were spent processing PeopleCode.

Note. The duration total is not a sum of the measurements appearing here. PeopleSoft does not instrument every aspect of the runtime, and these areas that are not instrumented account for the difference between the total duration and the total of the measurements displayed here.

Measurement	Displays the measurement appearing in the row, such as SQL, PeopleCode, or Total Trace.
Duration	Displays the total time consumed by each element of a performance trace. For example, it may show the Total Trace consuming 50 seconds and 22 seconds were attributed to SQL.
% of Total	Displays the percentage of the Total Trace value that each element of the trace consumed. For example, if the Total Trace value is 50 seconds and the SQL value is 22 seconds, the % of Total value is 44.

Server Round Trips

The Server Round Trip section contains information for each server round trip completed during a particular performance trace. It contains two tabs: Durations and PeopleTools State Management.

You see a duration summary if the user ran the performance trace with standard or higher agent filter level.

The Durations tab contains the following information:

Seq(Sequence)	Displays the sequential order in which the server round trips were executed, with 1 indicating the first round trip of the performance trace.
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Action	Displays the action completed during the server round trip, such as Load Page/Search Page, Load Search Result, Click PeopleCode Command Button for field FUNCLIB <table.field>. This column is a hyperlink that launches the Round Trip Details page.
Component	Displays the component from which the user invoked the action.
Page	Displays the page within the component from which the user invoked the action.
Duration	Displays the amount of time that each action, or server round trip, consumed.
% of Total Trace	Displays the percentage of the total performance trace duration that each server round trip consumed. For example, if the Total Trace value is 50 seconds and a particular action consumes 3.5 seconds, the % of Total Trace is 7.

The PeopleTools State Management tab contains the following additional information:

Pack/Unpack Time	Reflects the time required for serialization (pack) and deserialization (unpack). The value is derived as follows: PMU 427 + 428 duration - (time spent performing SQL in 427 and 428) The value reflects the serialization duration plus the deserialization duration minus any time spent performing SQL as part of serialization and deserialization.
Component Buffer Size	This is the Component Buffer size, metric 1, in PMU 401 (ICPanel). The component buffer has to be deserialized by the application server when it is received from the web server, and then serialized when it is sent back to the web server. The larger the buffer, the greater the impact is of serialization overhead on the monitored system.
PeopleCode Global Size	This is the size of the memory used for PeopleCode global variables, which are sent to and from the application server during a Jolt request. This is included in the send buffer size and receive buffer size. This is metric 5 for all PMU 412 (Tuxedo Service Summary) rows.

SQL Summary

The SQL Summary section contains additional details regarding the SQL activity during component processing. It contains two tabs: SQL Executes and SQL Fetches.

You see a SQL summary if the user ran the performance trace with verbose or higher agent filter level.

The SQL Executes tab contains the following information:

Seq(Sequence)	The system orders the rows by Total Duration. The sequence in this case is a ranking of Total Duration.
SQL Operation and Tables	Displays the SQL operation and tables (such as UPDATE PS_QUERY_RUN_QRYVW).
SQL Type	Reflects the type of source code making the SQL call. The SQL types are: <ul style="list-style-type: none"> • PeopleTools (PMU 408).

- Inline PeopleCode (PMU 406).
- PeopleCode Built-In (PMU 407).

Execution Count	Displays the number of times that the SQL was executed during the performance trace.
Total Duration	The total time required by all executions.
Total Duration Average	The average execution duration, as in Total Duration / Execution Count.

The SQL Fetches tab contains the following additional information for each SQL statement executed:

Fetch Count	The total count of all SQL fetches executed during component processing within a particular performance trace.
Fetch Count Average	The average number of fetches per SQL Execute.
Fetch Duration	The sum total of all durations for SQL fetches.
Fetch Duration Average	The system average for SQL fetch durations during component processing.

PeopleCode Summary

The PeopleCode Summary section contains additional details regarding the PeopleCode activity during component processing. These values relate to PMU 404 (PeopleCode Program Execution).

You see a PeopleCode summary only if the user ran the performance trace in debug mode.

The following metrics apply only to the performance information collected during the performance trace.

Seq(Sequence)	The system orders the rows by .
PeopleCode Program	Displays the name of the PeopleCode program executed.
Execution Count	Displays the number of times this program has been executed.
Duration Total	Displays the sum of all durations of the PeopleCode program.
Duration Average	Displays the average duration of the PeopleCode program.
Duration Maximum	Displays the longest duration of this PeopleCode program.
Duration Minimum	Displays the shortest duration of this PeopleCode program.

Round Trip Details

The Round Trip Details page contains a subset of the performance data that appears on the Component Trace page. It enables you to drill down into a specific round trip to gather duration, SQL, and PeopleCode information. The data presented in the page is the similar to the Performance Trace page. The PMU Details link takes you to the completed PMU page with all PMUs captured in this action.

Viewing Component Statistics

Access the Component Statistics page.

The Component Statistics page enables you to gather performance information related to a specific PeopleSoft component.

System ID	Identifies each monitored system. PeopleSoft automatically generates this value incrementally. System definitions are created automatically when the first agent of a monitored system registers with the monitoring system.
Database Name	The name of the PeopleSoft application database running on the monitored system. The monitoring system automatically inserts this value when it recognizes and creates a monitored system.
User ID	The user ID of the user who generated the request. The user ID field prompts against the PSPMOPRDEFN table, which is populated by the Lookup program (PSPM_LOOKUP).
Performance Trace Name	You enter the performance trace name to search on PMUs within a particular performance trace. If a user has launched a performance trace in the Performance Console, the system labels every PMU generated in a business process with a performance trace name. Performance Trace Name prompts against the PSPMPERFTRACE table, which is populated by the Lookup program (PSPM_LOOKUP).

Note. When searching using a performance trace name, the search ignores all agent IDs, so the current system ID is not relevant.

From/To Date/Time	Specify a range of time. The system searches on the monitor date and time, not the agent date and time. If you do not specify a time range, by default, the system displays information for the current day, starting at midnight (12:00 AM).
Component	Select the component name.
Market	Select the market to which the component belongs.
Search	The Search button executes a search based on the search criteria defined on the page. It should only be pressed once per search. If you want to view the most current information, use the Refresh button after running the initial search. If you click Search repeatedly, the system returns the same results from the same time range for each search.
Refresh	Updates the To Time value to equal the current time. Enables you to view the most current results of a search.
Component Execution Count	Number of times a component was accessed within the specified time period. This value is calculated by selecting the count of PMU 400 (Tuxedo Service PCode and SQL) rows found with the current search results.

Component Averages

The Component Averages section displays the average and standard deviation of the following metrics.

Duration	The average duration of the PMU 400 (Tuxedo Service PCode and SQL) rows that were executed from this component.
SQL Fetch Count	The average number of SQL fetches executed for this component.

The value is the average of metric 5 from all PMU 400 (Tuxedo Service PCode and SQL) rows with Context 1 equal to this component's name.

SQL Execute Count

The average number of SQL statements executed for this component. The average of metric 6 from all PMU 400 (Tuxedo Service PCode and SQL) rows with Context 1 equal to this component's name.

Component Sizes

The Component Sizes chart displays the average and standard deviation of the component buffer sizes.

Receive Buffer Size

The average size of the data the application server received from the web server during a JOLT request.

This is metric 2 for PMU 115 (JOLT Request).

Send Buffer Size

Size of the data sent from the web server to the application server during a JOLT request.

This is metric 1 for PMU 115 (JOLT Request).

Component Buffer Size

This is the average Component Buffer size (metric 1) in PMU 401 (ICPanel).

The component buffer has to be deserialized by the application server when it is received from the web server, and then serialized when it is sent back to the web server.

PeopleCode Global Size

This is the average size of the memory used for PeopleCode global variables, which are sent to and from the application server during a JOLT request. This is included in the send buffer size and receive buffer size.

This is metric 6 for all PMU 412 (Tuxedo Service Summary) rows.

Component Durations

This chart shows the average and the standard deviation of these metrics:

Portal Time

The average time spent in the portal servlet for this component, including waits for calls to other servers. The value is the duration of the PMU 100 (Portal Request) rows associated with requests accessing this component.

PIA Time

The average time spent in the PIA servlet for this component. The value is the duration of the PMU 100 (Portal Request) rows and PMU 106 (PIA Request From Portal) rows associated with the request accessing this component.

Tuxedo Service Time

The average time spent in the application server for this component. The value is the duration of the PMU 400 (Tuxedo Service PCode and SQL) rows associated with the request accessing this component.

PeopleCode Exec Time

This is the average time spent by the application server executing PeopleCode, including any SQL triggered from within the PeopleCode.

The value is the average of metric 1 of the PMU 400 (Tuxedo Service PCode and SQL) rows associated with the component.

PeopleCode SQL Time

This is the average time spent by the application server executing SQLExec's and SQL objects triggered from within the PeopleCode. It is a subset of the PeopleCode Exec Time.

The value is equal to the average of metric 2 of the PMU 400 (Tuxedo Service PCode and SQL) rows associated with the requests.

Note. This is the average time spent for executing all SQL statements of this type in a single application server request, not the average duration of one SQL statement of this type.

PeopleCode Built-in SQL Time

This is the average time spent by the application server executing SQL triggered from within PeopleCode built-in functions such as getNextNumber(). It is a subset of the PeopleCode Exec Time.

The value is the average of metric 3 of the PMU 400 (Tuxedo Service PCode and SQL) rows associated with the requests.

Note. This is the average time spent for executing all SQL statements of this type in a single application server request, not the average duration of one SQL statement of this type.

PeopleTools SQL Exec Time

This is the average time spent by the application server executing SQL triggered by the PeopleTools runtime. It is a subset of the Tuxedo Service Time. This value may overlap with the PeopleCode Exec time.

The value is the average of metric 4 of the PMU 400 (Tuxedo Service PCode and SQL) rows associated with the requests.

Note. This is the average time spent for executing all SQL statements of this type in a single application server request, not the average duration of one SQL statement of this type.

PeopleCode Durations

The PeopleCode Durations chart only contains data if a user accessed a component while the monitoring level was set at verbose. The data is derived from PMUs 500–516.

This chart is a summary showing:

- Which PeopleCode event types (such as, SavePreChange, SavePostChange) were triggered for this component at the record field, component record, page and component levels.
- The average time spent executing each event instance.
- The sample count used to calculate these averages.

The standard deviation is not calculated for this chart.

Viewing Portal Statistics

Access the Portal Statistics page. This page enables you to view the performance of the portal servlet.

All charts have a View in Grid hyperlink to show the chart information in a grid. This enables you to sort the information and to download to Excel spreadsheets.

The chart on this page is generated from all Portal Request PMUs 100 (Portal Request) rows grouped by action (login, logout, homepage, target page, error), all PMU 117 (GetContent) rows, and all PMU 116 (Redirect after Login) rows.

Before you view the charts you must enter search criteria.

System ID Identifies each monitored system. PeopleSoft automatically generates this value incrementally. System definitions are created automatically when the first agent of a monitored system registers with the monitoring system.

Database Name The name of the PeopleSoft application database running on the monitored system. The monitoring system automatically inserts this value when it recognizes and creates a monitored system.

User ID The user ID of the user who generated the request.
The user ID field prompts against the PSPMOPRDEFN table, which is populated by the Lookup program (PSPM_LOOKUP).

Performance Trace Name You enter the performance trace name to search on PMUs within a particular performance trace. If a user has launched a performance trace in the Performance Console, the system labels every PMU generated in a business process with a performance trace name.

Performance Trace Name prompts against the PSPMPERFTRACE table, which is populated by the Lookup program (PSPM_LOOKUP).

Note. When searching using a performance trace name, the search ignores all agent IDs, so the current system ID is not relevant.

From/To Date/Time Specify a range of time. The system searches on the monitor date and time, not the agent date and time. If you do not specify a time range, by default, the system displays information for the current day, starting at midnight (12:00 AM).

Search The Search button executes a search based on the search criteria defined on the page. It should only be pressed once per search. If you want to view the most current information, use the Refresh button after running the initial search. If you click Search repeatedly, the system returns the same results from the same time range for each search.

Refresh Updates the To Time value to equal the current time. Enables you to view the most current results of a search.

Portal Action Durations

This chart reveals the average and standard deviation of the durations of the following metrics. The sample size used to derive the average appears in parentheses to the right of the bar label.

Redirect The time required for the browser to load a page requested by way of a URL redirection.

Get Content The time required for the system to display target content.

Portal View page The time spent to assemble a portal page, excluding the homepage.

Portal login Time spent on processing a login request.

Portal Homepage	Time spent assembling the homepage.
Portal error	Time spent assembling the error reporting page.
Portal Expire	Time spent processing a portal page expiration.
Portal Logout	Time spent on processing a logout request.
Portal Refresh Pagelet	Time spent refreshing a pagelet. A pagelet refresh gets triggered by the refresh button on a pagelet from the homepage.

Viewing PIA Statistics

Access the PIA Statistics page.

This page enables you to view the performance of the PIA servlet.

All charts have a View in Grid hyperlink to show the chart information in a grid. This also allows users to sort the information and to download to Excel spreadsheets.

System ID	Identifies each monitored system. PeopleSoft automatically generates this value incrementally. System definitions are created automatically when the first agent of a monitored system registers with the monitoring system.
Database Name	The name of the PeopleSoft application database running on the monitored system. The monitoring system automatically inserts this value when it recognizes and creates a monitored system.
User ID	The user ID of the user who generated the request. The user ID field prompts against the PSPMOPRDEFN table, which is populated by the Lookup program (PSPM_LOOKUP).
Performance Trace Name	You enter the performance trace name to search on PMUs within a particular performance trace. If a user has launched a performance trace in the Performance Console, the system labels every PMU generated in a business process with a performance trace name. Performance Trace Name prompts against the PSPMPERFTRACE table, which is populated by the Lookup program (PSPM_LOOKUP).

Note. When searching using a performance trace name, the search ignores all agent IDs, so the current system ID is not relevant.

From/To Date/Time	Specify a range of time. The system searches on the monitor date and time, not the agent date and time. If you do not specify a time range, by default, the system displays information for the current day, starting at midnight (12:00 AM).
Search	The Search button executes a search based on the search criteria defined on the page. It should only be pressed once per search. If you want to view the most current information, use the Refresh button after running the initial search. If you click Search repeatedly, the system returns the same results from the same time range for each search.

Refresh Updates the To Time value to equal the current time. Enables you to view the most current results of a search.

PIA Action Durations

The average time for a PIA servlet to handle a direct request from a browser (PIA View Page), and handle a request from a Portal.

The data is generated from PMU 101 (PIA Request), and the data for is grouped by context 3, which is action (login, logout, homepage, target page, error). Additional performance data is generated from PMU 102 (Compression Request), PMU 106 (PIA Request From Portal), and PMU 114 (Attach File Request).

PIA Action Response Sizes

The average size of the content sent to a browser when fulfilling a PIA request for the same rows of data that appear in the PIA Action Durations chart.

The data is generated from the metric 1 values for PMU 101 (PIA Request), metric 1 values for 106 (PIA Request from Portal), metric 1 values for PMU 114 (Attach File Request), and metric 1 values for PMU 102 (Compression Request).

Viewing Top Portal Content Requests

Access the Top Portal Content Requests page.

This page enables you to identify, view, and rank the performance data associated with individual requests for content through the PeopleSoft portal. The charts enable you to identify content requests that are both popular and poor performing.

All charts have a View in Grid hyperlink to show the chart information in a grid. This enables you to sort the information and to download to Excel spreadsheets.

Before you can view portal content requests, you must first enter search criteria.

System ID	Identifies each monitored system. PeopleSoft automatically generates this value incrementally. System definitions are created automatically when the first agent of a monitored system registers with the monitoring system.
Database Name	The name of the PeopleSoft application database running on the monitored system. The monitoring system automatically inserts this value when it recognizes and creates a monitored system.
User ID	The user ID of the user who generated the request. The user ID field prompts against the PSPMOPRDEFN table, which is populated by the Lookup program (PSPM_LOOKUP).
Performance Trace Name	You enter the performance trace name to search on PMUs within a particular performance trace. If a user has launched a performance trace in the Performance Console, the system labels every PMU generated in a business process with a performance trace name. Performance Trace Name prompts against the PSPMPERFTRACE table, which is populated by the Lookup program (PSPM_LOOKUP).

Note. When searching using a performance trace name, the search ignores all agent IDs, so the current system ID is not relevant.

From/To Date/Time

Specify a range of time. The system searches on the monitor date and time, not the agent date and time. If you do not specify a time range, by default, the system displays information for the current day, starting at midnight (12:00 AM).

Search

The Search button executes a search based on the search criteria defined on the page. It should only be pressed once per search. If you want to view the most current information, use the Refresh button after running the initial search. If you click Search repeatedly, the system returns the same results from the same time range for each search.

Number to Retrieve

The number of top ranked statistics to be displayed on the charts.

Refresh

Updates the To Time value to equal the current time. Enables you to view the most current results of a search.

Top Portal Content Requests

This chart indicates the most popular content requested by users through the portal.

The chart shows the top counts of content reference instances for PMU 117 (GetContent) accessed within the search period specified. The instances are grouped by context 3, which assumes one of the following values:

- Portal CREF ID of the content.
- Pagelet (appears when the template references the pagelet by URL rather than by CRED ID).
- Menu (the CREF ID of the menu pagelet).
- DEFAULT_TEMPLATE (the CREF ID of the default template CREF).
- Homepage Tab <tab name>.
- Target content (appears when the content is unregistered target content).
- Logout (appears when a portal issues a logout request to another portal).

Top Cumulative Durations

This chart shows the Portal Content References that in total consumed the most time on the Portal servlet and their request counts. The system selects the top duration sums for PMU 117 (GetContent) grouped by Context3 (Portal CREF ID) accessed within the search period specified.

Duration Averages

This chart shows the Portal Content References that on average consumed the most time on the Portal servlet and their request counts. The system selects the top duration averages for PMU 117 (GetContent) grouped by Context3 (Portal CREF ID) accessed within the search period specified.

Top Cumulative Response Sizes

This chart indicates the largest cumulative response sizes. A response size refers to the size, in bytes, of the HTML response that the system sends to the browser when fulfilling a user request.

The data is generated from metric 1 in PMU 117 (GetContent).

Top Average Response Sizes

This chart indicates the top average of all of the response sizes. A response size refers to the size, in bytes, of the HTML response that the system sends to the browser when fulfilling a user request.

The data is generated from metric 1 in PMU 117 (GetContent).

Viewing Top PeopleCode Events

Access the Top PeopleCode Events page.

These charts show the PeopleCode events that have highest durations and execution counts, grouped by component and event type. Durations and counts are summed across levels (record field, component record, page and component) for each component and event type.

All charts have a View in Grid hyperlink to show the chart information in a grid. This also allows users to sort the information and to download to Excel spreadsheets.

Note. Performance data must be captured in verbose agent filter mode or higher to be displayed.

Before you can view PeopleCode events, you must first enter search criteria.

System ID	Identifies each monitored system. PeopleSoft automatically generates this value incrementally. System definitions are created automatically when the first agent of a monitored system registers with the monitoring system.
Database Name	The name of the PeopleSoft application database running on the monitored system. The monitoring system automatically inserts this value when it recognizes and creates a monitored system.
User ID	The user ID of the user who generated the request. The user ID field prompts against the PSPMOPRDEFN table, which is populated by the Lookup program (PSPM_LOOKUP).
Performance Trace Name	You enter the performance trace name to search on PMUs within a particular performance trace. If a user has launched a performance trace in the Performance Console, the system labels every PMU generated in a business process with a performance trace name. Performance Trace Name prompts against the PSPMPERFTRACE table, which is populated by the Lookup program (PSPM_LOOKUP).
<hr/>	
Component	Select the component name.
Market	Select the market to which the component belongs.
From/To Date/Time	Specify a range of time. The system searches on the monitor date and time, not the agent date and time. If you do not specify a time range, by default, the system displays information for the current day, starting at midnight (12:00 AM).

Search	The Search button executes a search based on the search criteria defined on the page. It should only be pressed once per search. If you want to view the most current information, use the Refresh button after running the initial search. If you click Search repeatedly, the system returns the same results from the same time range for each search.
Number to Retrieve	The number of top ranked statistics to be displayed on the charts.
Refresh	Updates the To Time value to equal the current time. Enables you to view the most current results of a search.

See *Enterprise PeopleTools 8.45 PeopleBook: PeopleCode Developer's Guide*, "Accessing PeopleCode and Events," Understanding PeopleCode Programs and Events.

Note. If the filter level of the PSAPPSRV agent type is set to a level that is lower than the level of PMU 500–516 (Verbose), a warning message appears at the top of the page indicating that information for the current component may not be available. This data is only available in the following situations: the agent filters on the application server are set to verbose or debug, *or* performance traces were ran with a filter level set to debug or verbose. A small, yellow triangle appears at the top of the page alerting you if application servers for that system are currently at a higher filter level than verbose. This, however, does not mean you would not see data; there may be PMU's from performance traces or lower filter levels from past monitoring.

Top PeopleCode Events

This chart indicates the PeopleCode events that get executed most often.

It shows the highest counts for all PMU 500–516. The counts consist of adding metrics 1, 3, and 5. The data is grouped by component and event name (contexts 1 and 2).

See [Chapter 4, "Administering the PeopleSoft Performance Monitor," Setting Agent Filter Options, page 32.](#)

Top Cumulative Durations

This chart reveals the largest sum of all the durations of a specific PeopleCode event.

It shows the top sum of PMU 500–516 durations. The duration is not the duration of the PMU; the duration is the sum of metrics 2, 4, and 6. The data is grouped by component and event name (contexts 1 and 2).

Duration Averages

This chart shows the components with event types that on average consume the most time in application server requests.

Duration averages are the averages and standard deviations of the sum of durations of PMU 500–516. The duration is not the duration of the PMU; the duration is the sum of metrics 2, 4, and 6. The data is grouped by component and event name (contexts 1 and 2). The sample count used to calculate these averages is not the execution counts of the events (metrics 1, 3 and 5) but the number of times this component reported that event type.

Viewing Top PeopleCode Executions

Access the Top PeopleCode Executions page.

This page enables you to identify the PeopleCode programs that the system executes the most and the performance of the PeopleCode programs.

The data on this page is generated from PMU 404 (PeopleCode Program Execution), and it is based on all PeopleCode function calls and all calls to application packages.

All charts have a View in Grid hyperlink to show the chart information in a grid. This enables you to sort the information and to download to Excel spreadsheets.

Note. Performance data must be captured in debug agent filter mode to be displayed in this chart.

Before you can view top PeopleCode executions, you must first enter search criteria.

System ID Identifies each monitored system. PeopleSoft automatically generates this value incrementally. System definitions are created automatically when the first agent of a monitored system registers with the monitoring system.

Database Name The name of the PeopleSoft application database running on the monitored system. The monitoring system automatically inserts this value when it recognizes and creates a monitored system.

User ID The user ID of the user who generated the request.
The user ID field prompts against the PSPMOPRDEFN table, which is populated by the Lookup program (PSPM_LOOKUP).

Performance Trace Name You enter the performance trace name to search on PMUs within a particular performance trace. If a user has launched a performance trace in the Performance Console, the system labels every PMU generated in a business process with a performance trace name.
Performance Trace Name prompts against the PSPMPERFTRACE table, which is populated by the lookup program (PSPM_LOOKUP).

Note. When searching using a performance trace name, the search ignores all agent IDs, so the current system ID is not relevant.

Component Select the component name.

Market Select the market to which the component belongs.

From/To Date/Time Specify a range of time. The system searches on the monitor date and time, not the agent date and time. If you do not specify a time range, by default, the system displays information for the current day, starting at midnight (12:00 AM).

Search The Search button executes a search based on the search criteria defined on the page. It should only be pressed once per search. If you want to view the most current information, use the Refresh button after running the initial search. If you click Search repeatedly, the system returns the same results from the same time range for each search.

Number to Retrieve The number of top ranked statistics to be displayed on the charts.

Refresh Updates the To Time value to equal the current time. Enables you to view the most current results of a search.

Note. This data is only available when: the agent filters on the application server are set to debug, *or* performance traces were ran with a filter level set to debug. A small, yellow triangle appears at the top of the page alerting you if application servers for that system are currently at a higher filter level than debug. This, however, does not mean you would not see data; there may be PMU's from performance traces or lower filter levels from past monitoring.

Top PeopleCode Executions

Indicates the PeopleCode programs that the system executes the most.

Top PeopleCode executions refers to the highest counts for all PMU 404 (PeopleCode Program Execution) rows. The data is grouped by component and program name (contexts 1 and 2).

Top Cumulative Durations

Identifies the PeopleCode programs with the longest cumulative durations. The duration of each execution of a particular PeopleCode program is recorded and added to the sum total to create a cumulative duration value.

The data is generated from the sum of PMU 404 (PeopleCode Program Execution) durations, and the data is grouped by component and program name (contexts 1 and 2).

Duration Averages

Identifies the PeopleCode programs with the highest average duration in the system.

The data is generated from the sum of PMU 404 (PeopleCode Program Execution) durations, and the data is grouped by component and program name (contexts 1 and 2).

Viewing Top PeopleCode SQL Statements

Access the Top SQL Statements page.

The data for this page is generated from the sum of all PMU 406 (PeopleCode SQL Execute) rows, and the data relates to the SQL that PeopleCode programs execute.

The bars on the chart are links you can click on to be transferred to the Completed PMU history component. The system automatically populates the search criteria with values derived from the Top PeopleCode SQL Statements page. For example, PMU Identifier is set to *406*, and the Context 2 and Statement Number values are set appropriately.

All charts have a View in Grid hyperlink to show the chart information in a grid. This also enables you to sort the information and to download to Excel spreadsheets.

System ID	Identifies each monitored system. PeopleSoft automatically generates this value incrementally. System definitions are created automatically when the first agent of a monitored system registers with the monitoring system.
Database Name	The name of the PeopleSoft application database running on the monitored system. The monitoring system automatically inserts this value when it recognizes and creates a monitored system.
User ID	The user ID of the user who generated the request.

The user ID field prompts against the PSPMOPRDEFN table, which is populated by the Lookup program (PSPM_LOOKUP).

Performance Trace Name

You enter the performance trace name to search on PMUs within a particular performance trace. If a user has launched a performance trace in the Performance Console, the system labels every PMU generated in a business process with a performance trace name.

Performance Trace Name prompts against the PSPMPERFTRACE table, which is populated by the Lookup program (PSPM_LOOKUP).

Note. When searching using a performance trace name, the search ignores all agent IDs, so the current system ID is not relevant.

Component

Select the component name.

Market

Select the market to which the component belongs.

From/To Date/Time

Specify a range of time. The system searches on the monitor date and time, not the agent date and time. If you do not specify a time range, by default, the system displays information for the current day, starting at midnight (12:00 AM).

Search

The Search button executes a search based on the search criteria defined on the page. It should only be pressed once per search. If you want to view the most current information, use the Refresh button after running the initial search. If you click Search repeatedly, the system returns the same results from the same time range for each search.

Number to Retrieve

The number of top ranked statistics to be displayed on the charts.

Refresh

Updates the To Time value to equal the current time. Enables you to view the most current results of a search.

Top SQL Statements

This chart indicates the PeopleCode SQL statements that the system executes the most.

SQL statements are identified by PeopleCode locations, such as PeopleCode Program and PeopleCode Statement Number (context 2 and metric 2).

Top Cumulative Durations

Identifies the PeopleCode SQL statements with the longest cumulative durations.

SQL statements are identified by PeopleCode locations, such as PeopleCode Program and PeopleCode Statement Number (context 2 and metric 2).

Duration Averages

Identifies the PeopleCode SQL statements with the longest average durations.

SQL statements are identified by PeopleCode locations, such as PeopleCode Program and PeopleCode Statement Number (context 2 and metric 2).

Note. This data is only available when: the agent filters on the application server are set to verbose or debug, *or* performance traces were ran with a filter level set to debug or verbose. A small, yellow triangle appears at the top of the page alerting you if application servers for that system are currently at a higher filter level than verbose. This, however, does not mean you would not see data; there may be PMU's from performance traces or lower filter levels from past monitoring.

Viewing Top Components

Access the Top Components page.

All charts have a View in Grid hyperlink to show the chart information in a grid. This enables you to sort the information and to download to Excel spreadsheets.

The data on this page is generated from PMU 401 (ICPanel), and it is grouped by action, as in ICSave. The system passes the "action" to the application server as part of an ICPanel service request specifying the reason for the request.

On this page, the charts are grouped by action. The "action" refers to the action of a user in a component. The following are examples of how the actions appear:

- "#KEY" translates into Load Component.
- "#ICPanel1" translates into "Tab to Page."
- Launch Page/Search Page.
- Click PeopleCode Command Button for Field DERIVED_PSPM.PM_FILTERCHANGE.
- Switch to Add Action Mode.
- Launch Secondary Page.
- Change Drop Down List Value for Field PRCSRQSTD LG_WRK.RECURNAME.
- Click OK or Save to Save Secondary Page.
- Click Cancel on Secondary Page.
- Save Component.
- Select Row0 From Search Result.
- Select Row1 From Search Result.
- Sort Column on Grid.
- Tab to Next Page.
- View Page.

Before viewing top components, you must first enter search criteria.

System ID	Identifies each monitored system. PeopleSoft automatically generates this value incrementally. System definitions are created automatically when the first agent of a monitored system registers with the monitoring system.
Database Name	The name of the PeopleSoft application database running on the monitored system. The monitoring system automatically inserts this value when it recognizes and creates a monitored system.
User ID	The user ID of the user who generated the request.

The user ID field prompts against the PSPMOPRDEFN table, which is populated by the Lookup program (PSPM_LOOKUP).

Performance Trace Name

You enter the performance trace name to search on PMUs within a particular performance trace. If a user has launched a performance trace in the Performance Console, the system labels every PMU generated in a business process with a performance trace name.

Performance Trace Name prompts against the PSPMPERFTRACE table, which is populated by the Lookup program (PSPM_LOOKUP).

Note. When searching using a performance trace name, the search ignores all agent IDs, so the current system ID is not relevant.

Component

Select the component name.

Market

Select the market to which the component belongs.

From/To Date/Time

Specify a range of time. The system searches on the monitor date and time, not the agent date and time. If you do not specify a time range, by default, the system displays information for the current day, starting at midnight (12:00 AM).

Search

The Search button executes a search based on the search criteria defined on the page. It should only be pressed once per search. If you want to view the most current information, use the Refresh button after running the initial search. If you click Search repeatedly, the system returns the same results from the same time range for each search.

Number to Retrieve

The number of top ranked statistics to be displayed on the charts.

Refresh

Updates the To Time value to equal the current time. Enables you to view the most current results of a search.

Top Components

This chart indicates the components that users access and use the most.

The data is grouped by component, page, and action (contexts 1, 2, and 3).

Top Cumulative Durations

Identifies the component PMUs with the longest cumulative durations.

The data is grouped by component, page, and action (contexts 1, 2, and 3).

Duration Averages

This chart displays the average duration and standard deviation of the PMUs associated with a particular component.

The data is grouped by component, page, and action (contexts 1, 2, and 3).

CHAPTER 9

Understanding PeopleSoft Performance Monitor Security Considerations

This chapter discusses how to:

- Set up PSPPMSRV authentication.
- Work with firewalls.
- Set up SSL.
- Set up SSL client authentication.
- Protect the PeopleSoft Performance Monitor servlets.

Setting up PSPPMSRV Authentication

The PSPPMSRV application server process acts as the PPMI client when you record PeopleSoft performance data. In order to register as a client, the PSPPMSRV requires the appropriate permissions in PeopleTools Security.

Warning! Setting up PSPPMSRV authentication is required.

To set up PPMI Client Authentication:

1. Create a user profile using PeopleTools Security.

See *Enterprise PeopleTools 8.45 PeopleBook: Security Administration*, “Administering User Profiles”.

2. Add the *PeopleTools Perfmon Client* role to the user profile.

The *PeopleTools Perfmon Client* role contains the PTPMCLNT permission list.

3. Select PeopleTools, Performance Monitor, Administration, Global Administration and enter the user profile you created and the associated password in the PPMI User ID and PPMI Password text boxes.

Working with Firewalls

When setting up firewalls in a PeopleSoft Performance Monitor environment, consider:

- Agent communication with the monitor servlet.
- PSPPMSRV communication with the monitor servlet.

- Monitor cluster members.

Agent Communication with the Monitor Servlet

If you require a forward proxy to create a "bridge" for a firewall residing between the monitored system and the monitoring system, configure your web server, application server, and Process Scheduler server accordingly.

Web Server

The process varies depending on which web server you use.

To set up a forward proxy on WebLogic:

1. Open the setenv.cmd file.
2. Set HTTP_PROXY_HOST and HTTP_PROXY_HTTPPORT, or HTTP_PROXY_HTTPSHOST and HTTP_PROXY_HTTPSPORT.

To set up a forward proxy on WebSphere:

1. Open WebSphere Administration console at <http://<machine-name>:9090/admin> and login.
2. Expand Servers, Application Servers, server1, Process Definition, JavaVirtualMachine, CustomProperties.
3. Click New Key,Value pair and add the following new pairs:
 - Key="http.proxyHost", Value="<forward proxy hostname>"
 - Key="http.proxyPort", Value="<forward proxy HTTP port>"
 - Key="https.proxyHost", Value="<forward proxy hostname>"
 - Key="https.proxyPort", Value="<forward proxy HTTPS port>"
4. Save the configuration changes and logout.
5. Re-start WebSphere.

Application Server

To configure forward proxy on the application server:

1. Open the PSAPPSRV.CFG file.
2. Fill in the Proxy Host and Proxy Port under the [PSTOOLS] section.

Note. The agents do not use the Proxy Host settings in the PSAPPSRV.CFG file.

Process Scheduler

To configure forward proxy on the Process Scheduler server:

1. Open the PSPRCS.CFG file.
2. Fill in the Proxy Host and Proxy Port under the [PSTOOLS] section.

Note. The agents do not use the Proxy Host settings in the PSPRCS.CFG file.

PSPPMRSRV Communication with the Monitor Servlet

You can't have a firewall between the PSPPMRSRV processes and the monitoring web server. When PSPPMRSRV starts, it binds to the next free port allocated by the operating system. As such, there is no static port. This saves configuring ports for multiple PSPPMRSRVs.

Monitor Cluster Members

The monitor cluster members communicate with each other on their allotted ports. If the cluster members are on different sides of a firewall then these port numbers need to remain open for HTTP/S.

Setting up SSL

This section discusses:

- Setting up SSL between the agents and the PeopleSoft Performance Monitor.
- Setting up SSL between the PeopleSoft Performance Monitor and PPMI clients.

Note. Setting up SSL encryption is optional.

Setting Up SSL Between Agents and PeopleSoft Performance Monitor

This configuration encrypts data sent from the agents to the PeopleSoft Performance Monitor.

To set up SSL between agents and PeopleSoft Performance Monitor:

1. Install a digital root certificate on the web server.

A digital root certificate from a trusted certificate authority (CA) must be installed on the web server hosting the monitor URL.

See *Enterprise PeopleTools 8.45 PeopleBook: System and Server Administration*, “Working with BEA WebLogic,” Defining SSL Certificates on WebLogic.

See *Enterprise PeopleTools 8.45 PeopleBook: System and Server Administration*, “Working with IBM WebSphere,” Setting Up SSL on WebSphere 5.1.

Note. If the root certificate installed on your monitoring web server is from a non-standard CA, then a copy of that certificate must be installed in the application server key store for the monitored databases. The agents load this certificate when they start.

See *Enterprise PeopleTools 8.45 PeopleBook: Security Administration*, “Setting up Digital Certificates and Single Signon”.

2. Specify *https* for the Monitor URL.
 - Select PeopleTools, Performance Monitor, Administration, Specify Monitor.
 - Enter the URL specified for the Monitor URL beginning with *https*.

Setting up SSL between PeopleSoft Performance Monitor and PSPPMSRV and Monitor Cluster Members

This configuration encrypts the PPMI user ID and password when it is passed to the monitor and communication between monitor cluster members. Performance data published by the monitor *is not* encrypted.

To set up SSL between PeopleSoft Performance Monitor and PSPPMSRV and between cluster members:

1. Install a digital root certificate on the web server.

A digital root certificate from a trusted CA must be installed on the web server hosting the monitor URL.

See *Enterprise PeopleTools 8.45 PeopleBook: System and Server Administration*, “Working with BEA WebLogic,” Defining SSL Certificates on WebLogic.

See *Enterprise PeopleTools 8.45 PeopleBook: System and Server Administration*, “Working with IBM WebSphere,” Setting Up SSL on WebSphere 5.1.

2. Specify *HTTPS* for the PPMI URL.

- Select PeopleTools, Performance Monitor, Administration, Global Administration.

- Enter the URL specified for the PPMI URL beginning with *https*. If you elect to use PSPPMSRV as the PPMI client, only the communication from the PSPPMSRV to the PPMI servlet is encoded.

3. Specify *HTTPS* for the member servlet URLs in the Global Administration page.

Note. If the root certificate installed on your monitoring web server is from a non-standard CA, then a copy of that certificate must be installed in the application server key stores for the monitoring databases.

Setting up SSL Client Authentication

SSL client authentication validates that the client is trusted by the server.

Note. Setting up SSL client authentication is optional.

To set up SSL client authentication:

1. Set up SSL (as described in the previous section).
2. Set up your own certificate authority.

Remove all other certificate authorities from the monitoring web server’s key store. All certificates signed by this authority will be trusted by the monitoring web server.

3. Configure the monitoring web server so that client authentication is required and HTTP requests are disabled.

Note. This configuration prevents web browser connections to the web server unless the browser has loaded the client certificate. In particular, the Ping buttons used when setting up the PPMI URL and the Monitor URL require the browser to have a trusted client certificate loaded.

4. Configure Client Authentication on all elements that must access the monitoring system through HTTPS.

The following internal elements must have client certificates in their key stores. Each of these certificates must be signed by your certificate authority. The client authentication ensures that the data an element receives is authentic in that no third party could have inserted any incorrect data.

Element	Description
Agents	Configuring client authentication ensures that performance information sent between agents and the monitoring system is authentic.
Monitor cluster members	Monitor cluster members exchange information regularly. Configuring client authentication ensures that performance information sent between the cluster members is authentic.
Integration gateway	The gateway makes HTTP/S requests to notify the monitoring system of configuration changes. Configuring client authentication ensures that configuration notifications sent through the gateway are authentic.
PSPPMSRV	PSPPMSRV instances make HTTP/S requests to register with the monitoring servlet. Configuring client authentication ensures that the registration process is authentic.
PIA to Integration Gateway	During notification of configuration changes, PIA makes an HTTP/S request to the gateway. Configuring client authentication ensures that data sent between PIA and the gateway is authentic.

The following client certificates are used by these elements. The PSPPMSRV instances and the Monitor Cluster members use the same certificate.

Certificate	Description
Agent certificate	This certificate resides in the key store in the database of the monitored system. The agents use this certificate.
Monitor certificate	This certificate resides in the key store in the database of the monitoring system. PSPPMSRV instances and monitor cluster members use this certificate.
Integration gateway certificate	This certificate resides in the monitoring system gateway. This certificate is used during notification of configuration changes.
PIA to Integration Gateway Certificate	This certificate resides in the key store in the database of the monitoring system. PIA uses this certificate to make a request to the gateway.

The following table describes where each certificate is configured.

Certificate	Procedure
Agent certificate	Create a client certificate in the key store in the monitored database, using the Digital Certificates page (PeopleTools, Security, Security Objects, Digital Certificates) page. The certificate type must be "Local Node" and the alias must be "PerfMon".
Monitor certificate	Create a client certificate in the key store in the monitoring database, using the Digital Certificates page (PeopleTools, Security, Security Objects, Digital Certificates) page. The certificate type must be "Local Node" and the alias must be "PerfMon".
Integration Gateway certificate	Create a client certificate in the key store for gateway, using the pskeymanager utility. Edit the integrationGateway.properties file to include the certificate alias and encrypted certificate password, in the ig.certificateAlias and ig.certificatePassword properties.
PIA to Integration Gateway Certificate	<p>Create a client certificate in the key store in the monitoring database, using the Digital Certificates page (PeopleTools, Security, Security Objects, Digital Certificates). The certificate type must be "Local Node" and the alias must be the name of the Default Local Node (messaging node) in the monitoring database.</p> <p>Discover the name of the local node by selecting PeopleTools, Integration Broker, Node Definitions. Click Search and find the node marked as the Default Local Node.</p> <p>Note. While the alias of the certificate must be the same as the name of the default local node, the name of the certificate does not have to match. In particular, the certificate name can't contain the underscore character.</p> <p>Configure the Integration Broker Gateway URL to use HTTPS.</p>

See Also

Enterprise PeopleTools 8.45 PeopleBook: Security Administration, “Setting up Digital Certificates and Single Signon”

Protecting the PeopleSoft Performance Monitor Servlets

If you do not intend to use the PeopleSoft Performance Monitor servlets, and you want to make sure they are not exposed to hackers, you can disable the servlets permanently.

To disable the servlets, edit the web.xml file in the Portal Web-Application and remove the servlet definitions and servlet mappings for the monitor and PPMI servlet.

CHAPTER 10

Working with Performance Monitor Meta-Data

This section provides an overview and discusses how to:

- Understand metric definitions.
- Understand event definitions.
- Understand context definitions.
- Understand PMU definitions.

Understanding Performance Monitor Meta-Data Definitions

The PeopleSoft Performance monitor uses the following meta-data definitions:

- Metrics.
- Events.
- Contexts.
- PMU.

Metrics

Performance Monitor agents send PMU's and Events to the Monitor. Each PMU and Event contains one or more metrics. Each metric has a unique identifier. Metric definitions are the building blocks for creating PMUs and events. PMUs and events are comprised of up to six numeric values and one string metric value. One metric definition can appear in multiple event and PMU definitions.

Events

Events are notifications containing performance metrics that are different from PMUs in that they are not hierarchical, and they do not have durations. PeopleTools has defined a set of Event types, and each type of Event is reported at a specific location in the instrumented code.

Each event has the following:

- Type.
- Instance Identifier (a unique identifier for a specific Event instance).
- Timestamp.
- Severity.
- Metrics (such as CPU usage and memory allocation).

Event definitions group as many as seven metrics to measure the intended performance data. Some Events do not have metrics.

Contexts

A context definition only applies to PMU definitions. Contexts provide additional information so that PMU performance data can be displayed and searched more effectively. For example, a context definition enables you to group and sort numeric values, such as an execute count, by page name. Contexts enable the system to assign the data to various elements such as pages, components, service calls, and so on. Without contexts, you only have numeric data in no understandable grouping.

PMU metrics contain data specific to that PMU. Context values, on the other hand, are common to the entire user request or a specific tier. The system uses contexts to "flatten" a PMU tree. For example, you do not have to navigate up from a SQL PMU to an ICPanel PMU to see what component generated that SQL statement.

PMUs

A PMU is a unit of measurement that reflects the execution of a section of code. The system starts and stops a PMU at specific code locations, and the system may update a PMU anytime between the start and stop times. PeopleTools has defined a set of PMU types, and each type of PMU corresponds to the instrumentation at a specific code location, such as a SQL Execute in PSAPPSRV or a Jolt Request in the web server.

Each PMU includes:

- PMU Type.
- Instance identifier (a unique identifier for a specific PMU instance).
- Start time.
- Stop time.
- Status.
- Metrics (such as, number of SQL fetches or buffer size used in a Jolt response).

A PMU represents a section of code bracketed by calls to an internal instrumentation API that signal the start and stop of that logical unit of code.

PMU definitions group as many as seven metrics to measure the intended performance data. Some PMUs do not have metrics.

Understanding Metric Definitions

This section discusses the attributes of a metric definition.

Note. Only PeopleSoft should modify metric definitions. Modifying metric definitions at your site could cause unexpected results.

Metric Identifier	A numeric value acting as the unique identifier, or key, for a metric definition.
Metric Type	Displays the type of the metric definition. Metric types are: <ul style="list-style-type: none"> • Counter. A counter metric is designed to enable sums of values from a specific time range to be calculated. Examples are bytes printed and records

written. The values can also be averaged, maximums and minimums can be calculated, and other kinds of statistical calculations can be performed

- **Gauge.** A gauge metric is designed to be used instead of a counter when it is not meaningful to calculate sum values recorded within a time range. Calculations performed on gauge metrics include: average, standard deviation, median, maximum value, and minimum value. For example, the amount of memory used on a server is a gauge metric type. If you measure the amount of memory used over 20 transactions in a time range, the sum of the memory used is not necessarily useful. However, the average, median, and standard deviation provide insight into usage per transaction.
- **Numeric Identifier.** A numeric identifier is a numeric value used as an identifier, not as a measurement value. It is not meaningful to create sums, and averages, or manipulate these values in any arithmetic way. For example, message numbers and error codes are numeric identifier metric types.
- **String.** Used with metric definition attributes that need to be represented as text, not a numeric value. Arithmetic operations are not performed on string metric types. For example, descriptive attributes, such as site path, file name, and so on, are string metric types.

Metric Label

This metric label appears on any page that displays a metric to describe the metric value.

Description

Displays a more detailed description of the purpose of the metric.

Metric Multiplier

Enables you to manipulate metric values using a multiplier. The multiplier determines how the metrics appears on a PeopleSoft page. For example, if a metric is in milliseconds and you want to change it to display in seconds, you would specify a multiplier of 1000.

If the value does not need to be manipulated (increased or decreased), the multiplier is 1.0.

Display Metric As an Integer

Metrics can appear as a real number (with decimals) or integers (without decimals).

For example, an average duration appears as a real number, while a sum of SQL Statement executions must appear as in integer.

To display the metric as an integer, select this checkbox. To display the metric as a real number, deselect this checkbox.

User Defined Display Text

This section provides flexibility when defining metrics. For example, you can assign labels to particular values returned by functions. Based on a particular return value, the system displays various label values. Typically, this would be used in the case of Boolean values, such as the case with metric 23, *Is this a Paglet*. The a 0 is returned, the system displays *No*. If a 1 is returned, the system displays *Yes*.

Display Value/Label

Enables you to determine what appears on the pages displaying a metric. These options are mutually exclusive.

Select Display Value to display the actual value. Select Display Label to display the label describing the metric value.

Metric Value

The actual value of a user defined metric value.

Metric Value Label The label associated with a user defined metric value.

Understanding Event Definitions

This section describes the attributes of an event definition.

Event Definition Set Event definitions belong to a particular set. This is similar to message definitions in the message catalog belonging to a message set.

Note. Currently, there is only one set, set 1, which is reserved for internal PeopleSoft development.

Description Explains the purpose of a particular event definition set.

Definitions

Event ID Identifies an event definition within an event set.

Event Label The name of the event definition. This value appears with any event metric values on the pages displaying the event information.

Description Provides additional identification, if needed.

Additional Data Label If the optional long character field is populated for this event type, it requires a display label.

Filter Level Sets the level at which the system begins recording data about a particular event definition. The level of the overall monitoring system must equal or exceed the level of the event filter level before the system records the event data. For example, if the overall system filter level is set to *Standard*, the system records information from event definitions with a filter level set to *Standard*, *Warning*, and *Error*.

Metrics An event is comprised of up to six, predefined numeric metrics and one string metric.

Select the metric to include using the lookup button.

See [Chapter 10, “Working with Performance Monitor Meta-Data,” Understanding Metric Definitions, page 130.](#)

Understanding Context Definitions

This section discusses the attributes of a context definition.

Context Identifier A numeric value that uniquely identifies a specific context definition.

Context Label The label that appears on any page displaying the context definition to identify it.

Description A more detailed explanation of the context definition if needed.

Understanding PMU Definitions

This section describes the attributes of PMU definition.

PMU Definition Set PMU definitions belong to a particular set. This is similar to message definitions in the message catalog belonging to a message set.

Note. Currently, there is only one set, set 1, which is reserved for internal PeopleSoft development.

Description Explains the purpose of a particular PMU definition set.

Definitions

PMU ID Identifies a PMU definition within an event set.

PMU Label The name of the PMU definition. This value appears with any metric values on the pages displaying the PMU information.

Description Provides additional identification, if needed.

Additional Data Label Every PMU has an optional long data field for additional information or labeling. The system displays this label only if this field is populated.

Filter Level Sets the level at which the system begins recording data about a particular PMU definition. The level of the overall monitoring system must equal or exceed the level of the PMU filter level before the system records the event data. For example, if the overall system filter level is set to *Verbose*, the system records information from event definitions with a filter level set to *Standard* and *Verbose*, but it does not record information related to PMU definitions with a filter level set to *Debug*.

See [Chapter 4, “Administering the PeopleSoft Performance Monitor,” Setting Agent Filter Options, page 32.](#)

Enable Sampling Some PMUs associated with a user connection are always monitored regardless of the sampling rate. The PMUs that are never ignored are those that have the Enable Sampling option deselected. Examples of such PMUs are those related to users signing on, signing off, and being redirected to other sites.

See [Chapter 4, “Administering the PeopleSoft Performance Monitor,” Configuring Performance Monitoring Sampling Rate, page 39.](#)

Contexts 1, 2, 3 A PMU has up to three context fields.

See [Chapter 10, “Working with Performance Monitor Meta-Data,” Understanding Context Definitions, page 132.](#)

Note. If the contents of a context field vary according to the "parent" PMU, then the system uses Context 14 "Generic." For example, Context 1 of a SQL PMU such as PMU 407 (PeopleCode Built-In SQL Execute) is the component name for an ICPanel request or an iScript name for an ICScript request.

Metrics

A PMU is comprised of up to six, predefined numeric metrics and one string metric.

Select the metric to include using the lookup button.

Display

Select this option if you intend to display the metric label and/or value on a PeopleSoft page.

APPENDIX A

PMU Definition Reference

This appendix contains the structure of each PMU defined in the PeopleSoft system.

Note. Currently, there is only one PMU set definition, set 1.

PMU 100

PMU 100 has the following identification attributes.

Attribute	Value
ID	100
Label	Portal Request
Description	Reported at entry and exit of portal servlet.

Filter Level

PMU 100 has a filter level of 4.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Session ID	Web server Session ID.
2	IP Address	Client IP Address.
3	Action	Action - "cmd" parameter (such as, login, logout, or homepage).

Metrics

Metric	Value	Description
1	Response Code	HTTP response code.
2	Pagelet Count	Pagelet Count.

Metric	Value	Description
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Target CREF	Target CREF of the portal page.

Additional Label

Additional Data.

PMU 101

PMU 101 has the following identification attributes.

Attribute	Value
ID	101
Label	PIA Request
Description	Reported at entry and exit of PIA servlet.

Filter Level

PMU 101 has a filter level of 4.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Session ID	Web server Session ID.
2	IP Address	Client IP Address.
3	Action	Action - "cmd" parameter (such as, login, logout, or homepage).

Metrics

Metric	Value	Description
1	Response Size (bytes)	Size of HTML Response in bytes.
2	Response Code	HTTP response code.
3	Static Content Count	Number of items of static content downloaded with request.
4	Is this a Pagelet?	Boolean - is this is a pagelet or not?
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Label

Additional Data.

PMU 102

PMU 102 has the following identification attributes.

Attribute	Value
ID	102
Label	Compression Request
Description	Compression servlet run when the browser requests content.

Filter Level

PMU 102 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Session ID	Web server Session ID.

Context	Value	Description
2	IP Address	Client IP Address.
3	Content Type	Content Type of Response.

Metrics

Metric	Value	Description
1	Response Size (bytes)	Size of HTML Response in bytes.
2	Response Code	HTTP response code.
3	Compression Ratio	Compression ratio.
4	Compressed?	Boolean - was the file compressed?
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Label

Additional Data.

PMU 106

PMU 106 has the following identification attributes.

Attribute	Value
ID	106
Label	PIA Request From Portal
Description	Reported at Entry and Exit when Portal calls PIA directly

Filter Level

PMU 106 has a filter level of 4.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Session ID	Web server Session ID.
2	IP Address	Client IP Address.
3	Not used	Not used

Metrics

Metric	Value	Description
1	Response Size (bytes)	Size of HTML Response in bytes.
2	Response Code	HTTP Response Code.
3	Static Content Count	Number of items of static content downloaded with request.
4	Is this a Pagelet?	Boolean - is this is a pagelet or not?
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Label

None.

PMU 108

PMU 108 has the following identification attributes.

Attribute	Value
ID	108
Label	User Session Ended
Description	User Session logout, expiration, timeout, or error.

Filter Level

PMU 108 has a filter level of 4.

Sampling Enabled

No.

Contexts

Context	Value	Description
1	Session ID	Web server Session ID.
2	IP Address	Client IP Address.
3	Not used	Not used

Metrics

Metric	Value	Description
1	Reason	Reason for session termination.
2	Response Code	HTTP Response Code.
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	User ID	User ID of user logging on.

Additional Label

None.

PMU 109

PMU 109 has the following identification attributes.

Attribute	Value
ID	109
Label	User Session Began
Description	User Session began (user logged in).

Filter Level

PMU 109 has a filter level of 4.

Sampling Enabled

No.

Contexts

Context	Value	Description
1	Session ID	Web server Session ID.
2	IP Address	Client IP Address.
3	Not used	Not used

Metrics

Metric	Value	Description
1	Not used	Not used
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	User ID	User ID of user logging on.

Additional Label

None.

PMU 113

PMU 113 has the following identification attributes.

Attribute	Value
ID	113
Label	Authenticate
Description	Entry and Exit for application server authentication (GetCertificate).

Filter Level

PMU 113 has a filter level of 4.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Session ID	Web server Session ID.
2	IP Address	Client IP Address.
3	Not used	Not used

Metrics

Metric	Value	Description
1	Bypass Signon?	Boolean - logging in with a guest ID?
2	Authtoken Cookie Present?	Boolean - is the Authtoken Cookie in the request?
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	User ID	User ID of user logging on.

Additional Label

Previously logged in user.

PMU 114

PMU 114 has the following identification attributes.

Attribute	Value
ID	114

Attribute	Value
Label	Attach File Request
Description	Entry and Exit for file upload from browser client.

Filter Level

PMU 114 has a filter level of 4.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Session ID	Web server Session ID.
2	IP Address	Client IP Address.
3	File Name	File Name.

Metrics

Metric	Value	Description
1	Total File Size (bytes)	Total size of incoming files in bytes.
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Label

All File Names.

PMU 115

PMU 115 has the following identification attributes.

Attribute	Value
ID	115
Label	JOLT Request
Description	JOLT request to the application server.

Filter Level

PMU 115 has a filter level of 4.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Session ID	Web server Session ID.
2	IP Address	Client IP Address.
3	Tuxedo Service Name	Tuxedo Service Name, such as ICPanel, ICScript, and so on.

Metrics

Metric	Value	Description
1	JOLT SendBuf Size (bytes)	Size in bytes of the buffer sent to the application server.
2	JOLT RecvBuf Size	Size in bytes of the buffer received from the application server.
3	JOLT Return Code	JOLT Return Code.
4	JOLT Request Retried	JOLT Request Retried.
5	Not used	Not used
6	Not used	Not used
7	Not used.	Not used.

Additional Label

Error Status Code.

PMU 116

PMU 116 has the following identification attributes.

Attribute	Value
ID	116
Label	Redirect after Login
Description	Redirected round trip time (network latency).

Filter Level

PMU 116 has a filter level of 4.

Contexts

Context	Value	Description
1	Session ID	Web server session ID.
2	IP Address	Client IP address.
3	URL redirected to	URL redirected to, after logon.

Metrics

Metric	Value	Description
1	Not used	Not used
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	User Agent.	User Agent.

Additional Label

None.

PMU 117

PMU 117 has the following identification attributes.

Attribute	Value
ID	117
Label	Get Content
Description	Portal requests for content or pagelet.

Filter Level

PMU 117 has a filter level of 4.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Session ID	Web server session ID.
2	IP Address	Client IP address.
3	Portal CREF ID	Portal CREF ID of this content.

Metrics

Metric	Value	Description
1	Response Size (bytes)	Size of HTML Response in bytes.
2	Is this a Pagelet?	Boolean - is this is a pagelet or not?
3	Cookie Count	Number of cookies received in the response.
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Target CREF	Target CREF of the portal page.

Additional Label

URL for which request issued.

PMU 400

PMU 400 has the following identification attributes.

Attribute	Value
ID	400
Label	Tuxedo Service PCode and SQL
Description	Current SQL and PeopleCode and SQL summary metrics.

Filter Level

PMU 400 has a filter level of 4.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	Server Name	Server Name (such as, PSAPPSRV, PSQRYSRV, PSSAMSRV).
3	Tuxedo Service Name	Tuxedo Service Name (such as ICPanel, ICSript, and so on).

Metrics

Metric	Value	Description
1	PeopleCode Exec Time (ms)	PeopleCode execution time (milliseconds).
2	PeopleCode SQL Time (ms)	Execution Time for SQLExec and SQL object (milliseconds).
3	PCode BuiltIn SQL Time (ms)	Total PeopleCode BuiltIn SQL Execution Time(milliseconds).
4	PeopleTools SQL Time (ms)	SQL time excluding PeopleCode and BuiltIn SQL (milliseconds).
5	SQL Fetch Count	Total number of rows fetched from the database.

Metric	Value	Description
6	SQL Execute Count	SQL Execute Count.
7	Trace Level	SQL, PeopleCode, and Component Processor trace levels.

Additional Label

Current SQL statement.

PMU 401

PMU 401 has the following identification attributes.

Attribute	Value
ID	401
Label	ICPanel
Description	Entry and exit for component search and processing on application server.

Filter Level

PMU 401 has a filter level of 4.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Component	Component name.
2	Page	Page name.
3	Action	Request Action (such as #ICSave) from web server to application server.

Metrics

Metric	Value	Description
1	Component Buffer Size (bytes)	Size of the component buffer (bytes).

Metric	Value	Description
2	Component/Page Deferred Modes	Component and Page Processing Modes for this Request. For example, Off, Page Only, Component Only, and so on.
3	Field set to Interactive Mode.	Boolean - field disallows Deferred Processing for the Page?
4	Deferred Field Edit Count	Number of deferred field edits processed in this request.
5	Not used	Not used
6	Not used	Not used
7	Action String	String passed by web server (such as QE_ABSENCE_HIST\$new\$\$\$0).

Additional Label

Component Key.

PMU 402

PMU 402 has the following identification attributes.

Attribute	Value
ID	402
Label	Modal Level 1
Description	Triggered by Think-Time PeopleCode (DoModal, DoCancel, and so on).

Filter Level

PMU 402 has a filter level of 4.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Component	Component name.

Context	Value	Description
2	Page	Page name.
3	Action	Request Action (such as #ICSave) from web server to application server.

Metrics

Metric	Value	Description
1	Component Buffer Size (bytes)	Size of the component buffer (bytes).
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Action String	String passed by web server (such as QE_ABSENCE_HIST\$new\$0\$0).

Additional Label

Component Key.

PMU 403

PMU 403 has the following identification attributes.

Attribute	Value
ID	403
Label	Modal Level 2
Description	Modal component/secondary page/lookup page from a Level 1.

Filter Level

PMU 403 has a filter level of 4.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Component	Component name.
2	Page	Page name.
3	Action	Request Action (such as #ICSave) from web server to application server.

Metrics

Metric	Value	Description
1	Component Buffer Size (bytes)	Size of the component buffer (bytes).
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Action String	String passed by web server (such as QE_ABSENCE_HIST\$new\$\$\$0).

Additional Label

Component Key.

PMU 404

PMU 404 has the following identification attributes.

Attribute	Value
ID	404
Label	PeopleCode Program Execution
Description	PeopleCode Events, External Function Calls and Application Class Methods.

Filter Level

PMU 404 has a filter level of 6.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	PeopleCode Program	PeopleCode Program Name.
3	Not used	Not used.

Metrics

Metric	Value	Description
1	Not used	Not used
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Label

Component Key.

PMU 406

PMU 406 has the following identification attributes.

Attribute	Value
ID	406
Label	PeopleCode SQL Execute
Description	Execution of PeopleCode SQLExec and SQL Objects.

Filter Level

PMU 406 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	PeopleCode Program	PeopleCode Program name.
3	SQL Origin	SQLExec or SQL Object.

Metrics

Metric	Value	Description
1	Cursor Number	Unique ID for a SQL cursor.
2	PeopleCode Statement Number	PeopleCode statement number (excluding comments and white space).
3	SQL Was Compiled	Boolean - was SQL compiled before executing?
4	SQL Compile Time (ms)	Compile time for this SQL (milliseconds).
5	Not used	Not used
6	Not used	Not used
7	SQL Operation and Tables	SQL Operation and Tables (such as UPDATE PS_QUERY_RUN_QRYVW).

Additional Label

SQL Statement.

PMU 407

PMU 407 has the following identification attributes.

Attribute	Value
ID	407
Label	PeopleCode BuiltIn SQL Execute
Description	SQL executed during a PeopleCode BuiltIn or Method call.

Filter Level

PMU 407 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request
2	PeopleCode Program	PeopleCode Program Name.
3	PeopleCode BuiltIn	PeopleCode Built-In Name (such as GetNextNumber).

Metrics

Metric	Value	Description
1	Cursor Number	Unique ID for a SQL cursor.
2	PeopleCode Statement Number	PeopleCode statement number (excluding comments and white space).
3	SQL Was Compiled	Boolean - was SQL compiled before executing?
4	SQL Compile Time (ms)	Compile time for this SQL (milliseconds).
5	Not used	Not used
6	Not used	Not used
7	SQL Operation and Tables	SQL Operation and Tables (such as UPDATE PS_QUERY_RUN_QRYVW).

Additional Label

SQL Statement.

PMU 408

PMU 408 has the following identification attributes.

Attribute	Value
ID	408
Label	PeopleTools SQL Execute.
Description	All SQL calls excluding PMUs 406 and 407.

Filter Level

PMU 408 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request
2	Not used	Not used
3	Not used	Not used

Metrics

Metric	Value	Description
1	Cursor Number	Unique ID for a SQL cursor.
2	PeopleCode Statement Number	PeopleCode statement number (excluding comments and white space).
3	SQL Was Compiled	Boolean - was SQL compiled before executing?
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	SQL Operation and Tables	SQL Operation and Tables (such as UPDATE PS_QUERY_RUN_QRYVW).

Additional Label

SQL Statement.

PMU 409

PMU 409 has the following identification attributes.

Attribute	Value
ID	409
Label	Explicit Commit
Description	PeopleCode controlled Commit (such as GetNextNumberWithGaps).

Filter Level

PMU 409 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	PeopleCode Program.	PeopleCode Program name.
3	PeopleCode Builtin.	PeopleCode BuiltIn Name (such as GetNextNumber)

Metrics

Metric	Value	Description
1	PeopleCode Statement Number	PeopleCode statement number (excluding comments and white space).
2	Cursor Number	Unique ID for a SQL cursor.
3	Not used	Not used
4	Not used	Not used

Metric	Value	Description
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Label

None.

PMU 410

PMU 410 has the following identification attributes.

Attribute	Value
ID	410
Label	ICScript
Description	Entry and exit for IScript execution on the application server.

Filter Level

PMU 410 has a filter level of 4.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	ICScript URL	ICScript URL.
2	PeopleCode Program.	PeopleCode Program name.
3	Not used	Not used

Metrics

Metric	Value	Description
1	Not used	Not used
2	Not used	Not used

Metric	Value	Description
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Label

None.

PMU 411

PMU 411 has the following identification attributes.

Attribute	Value
ID	411
Label	ICQuery
Description	Entry and exit for "Run to HTML" queries on the application server.

Filter Level

PMU 411 has a filter level of 4.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Query	Query name.
2	Action.	Request Action (such as #ICSave) from web server to the application server.
3	Not used	Not used

Metrics

Metric	Value	Description
1	SQL Fetch Count	Total number of rows fetched from the database.
2	Prompt Count	How many prompts the query defines as its criteria.
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Label

None.

PMU 412

PMU 412 has the following identification attributes.

Attribute	Value
ID	412
Label	Tuxedo Service Summary
Description	Cache and other metrics (continuation of PMU 400).

Filter Level

PMU 412 has a filter level of 4.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.

Context	Value	Description
2	Server Name.	Server Name (such as PSAPPSRV, PSQRYSRV, PSSAMSRV, and so on).
3	Tuxedo Service Name.	Tuxedo Service Name (such as ICPanel, ICScript, and so on).

Metrics

Metric	Value	Description
1	Cache Misses	Manager cache misses resulting in object fetches from the database.
2	Memory Cache Hits	Manager cache hits resulting in object fetches from memory.
3	File Cache Hits	Manager cache hits resulting in object fetches from file.
4	Deserialization Time (ms)	Deserialization Request Time.
5	Serialization Time (ms)	<p>Serialization Reply Time.</p> <p>Serialization time includes HTML generation, building state blob, and sending of the blob to the web server</p> <ul style="list-style-type: none"> • HTML generation. • Building state blob. • Sending of the blob to the web server.
6	PeopleCode Global Size (bytes)	Size of serialized global and component variables (bytes).
7	Not used	Not used

Additional Label

None.

PMU 413

PMU 413 has the following identification attributes.

Attribute	Value
ID	413

Attribute	Value
Label	GetCertificate
Description	Metrics for application server user authentication service.

Filter Level

PMU 413 has a filter level of 4.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Tuxedo Service Name	Tuxedo Service Name (such as ICPanel, ICScript, and so on).
2	Reason	Reason for Service Request.
3	Not used	Not used

Metrics

Metric	Value	Description
1	Authenticated?	Boolean - Authentication succeeded?
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Timestamp	Timestamp.

Additional Label

None.

PMU 414

PMU 414 has the following identification attributes.

Attribute	Value
ID	414
Label	SQL Fetch Summary
Description	Metrics for all SQL fetches for parent SQL (406, 407, 408).

Filter Level

PMU 414 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	PeopleCode Program	PeopleCode Program name.
3	SQL Fetch Origin	SQL Fetch Origin.

Note. Context 2 and Context 3 are only populated for PeopleCode and SQL built-in functions.

Metrics

Metric	Value	Description
1	SQL Fetch Time (ms)	SQL fetch time.
2	Cursor Number	Unique ID for a SQL cursor.
3	SQL Fetch Count	Total number of rows fetched from the database.
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	SQL Operation and Tables	SQL Operation and Tables (such as UPDATE PS_QUERY_RUN_QRYVW).

Additional Label

None.

PMU 415

PMU 415 has the following identification attributes.

Attribute	Value
ID	415
Label	PortalRegistry
Description	Metrics for Portal registry service call on the application server.

Filter Level

PMU 415 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Portal	Generic - Varies based upon server and service request.
2	Portal Command	Portal Command (such as EPortalCRefByURL).
3	Not used	Not used

Metrics

Metric	Value	Description
1	Not used	Not used
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Label

None.

PMU 416

PMU 416 has the following identification attributes.

Attribute	Value
ID	416
Label	ICWorklist
Description	Metrics for CICWorkListService::DoService()

Filter Level

PMU 416 has a filter level of 4.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Component	Component name.
2	Page	Page name.
3	Action	Request Action (such as #ICSave) from the web server to the application server.

Metrics

Metric	Value	Description
1	Not used	
2	Not used	
3	Not used	
4	Not used	
5	Not used	

Metric	Value	Description
6	Not used	
7	Not used	

Additional Label

None.

PMU 417

PMU 417 has the following identification attributes.

Attribute	Value
ID	417
Label	FTP Request
Description	Metrics for file transfer between application server and FTP server.

Filter Level

PMU 417 has a filter level of 4.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	FTP Server URL	FTP Server URL.
3	FTP Action name	FTP Action name (such as Get, Put, Delete, and so on).

Metrics

Metric	Value	Description
1	Not used	Not used
2	Not used	Not used

Metric	Value	Description
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	FTP Log File	FTP log file (such as c:\temp\ftp28975.log).

Additional Label

FTP script file name.

PMU 418

PMU 418 has the following identification attributes.

Attribute	Value
ID	418
Label	PSBusComp
Description	External Component Interface call into the application server.

Filter Level

PMU 418 has a filter level of 4.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Component Interface	Component Interface name.
2	CI Method Name	Component Interface method name.
3	Not used	Not used

Metrics

Metric	Value	Description
1	Component Buffer Size (bytes)	Size of the component buffer (bytes).
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Label

None.

PMU 419

PMU 419 has the following identification attributes.

Attribute	Value
ID	419
Label	BI GetInterlink
Description	PeopleCode Business Interlink GetInterlink call.

Filter Level

PMU 419 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.

Context	Value	Description
2	BI Name	Business Interlink Name (such as PT_GETSTOCKQUOTE).
3	Not used	Not used

Metrics

Metric	Value	Description
1	Component Buffer Size (bytes)	Size of the component buffer (bytes).
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Label

None.

PMU 420

PMU 420 has the following identification attributes.

Attribute	Value
ID	420
Label	BI Execute
Description	PeopleCode Business Interlink GetInterlink call.

Filter Level

PMU 420 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	BI Name	Business Interlink Name (such as PT_GETSTOCKQUOTE).
3	Not used	Not used

Metrics

Metric	Value	Description
1	Not used	Not used
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Label

None.

PMU 421

PMU 421 has the following identification attributes.

Attribute	Value
ID	421
Label	BI BulkExecute
Description	PeopleCode Business Interlink BulkExecute call.

Filter Level

PMU 421 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	BI Name	Business Interlink Name (such as PT_GETSTOCKQUOTE).
3	Not used	Not used

Metrics

Metric	Value	Description
1	Not used	Not used
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Label

None.

PMU 422

PMU 422 has the following identification attributes.

Attribute	Value
ID	422
Label	LDAP Bind
Description	PeopleCode LDAP ExecuteBind function call.

Filter Level

PMU 422 has a filter level of 5.

Contexts

Context	Value	Description
1	Tuxedo Service Name	Tuxedo Service Name (such as ICPanel, ICScript, and so on).
2	LDAP Object Name	LDAP Object Name.
3	LDAP DN	LDAP Distinguished Name.

Metrics

Metric	Value	Description
1	Not used	Not used
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	LDAP Host:Port	Host and port of the LDAP server.

Additional Label

None.

PMU 423

PMU 423 has the following identification attributes.

Attribute	Value
ID	423
Label	LDAP Search
Description	Metrics for LdapDirBIHandler::ExecuteSearch()

Filter Level

PMU 423 has a filter level of 5.

Contexts

Context	Value	Description
1	Tuxedo Service Name	Tuxedo Service Name (such as ICPanel, ICScript, and so on).
2	LDAP Object Name	LDAP Object Name.
3	LDAP DN	LDAP Distinguished Name.

Metrics

Metric	Value	Description
1	LDAP Attribute Count	Number of attributes found in the LDAP catalog.
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	LDAP Host:Port	Host and port of the LDAP server.

Additional Label

None.

PMU 424

PMU 424 has the following identification attributes.

Attribute	Value
ID	424
Label	Call AppEngine
Description	PeopleCode CallAppEngine Builtin call.

Filter Level

PMU 424 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	PeopleCode Program	PeopleCode program name.
3	Not used	Not used

Metrics

Metric	Value	Description
1	Not used	Not used
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	AppEngine Program Name	Application Engine program name.

Additional Label

None.

PMU 425

PMU 425 has the following identification attributes.

Attribute	Value
ID	425

Attribute	Value
Label	Implicit Commit
Description	PeopleTools-controlled SQL commit.

Filter Level

PMU 425 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	Not used	Not used
3	Not used	Not used

Metrics

Metric	Value	Description
1	Cursor Number	Unique ID for a SQL cursor
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Label

None.

PMU 426

PMU 426 has the following identification attributes.

Attribute	Value
ID	426
Label	RemoteCall Built-in.
Description	PeopleCode RemoteCall Built-in called.

Filter Level

PMU 426 has a filter level of 4.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	PeopleCode Program	PeopleCode program name.
3	Dispatcher Program Name.	Dispatcher Program Name.

Metrics

Metric	Value	Description
1	Not used	Not used
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	COBOL Program Name	COBOL Program Name.

Additional Label

None.

See Also

Enterprise PeopleTools 8.45 PeopleBook: PeopleCode Language Reference, "PeopleCode Built-in Functions," RemoteCall

PMU 427

PMU 427 has the following identification attributes.

Attribute	Value
ID	427
Label	Deserialization
Description	SQL summary metrics during Deserialization.

Filter Level

PMU 427 has a filter level of 6.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	Server Name	Server Name (such as, PSAPPSRV, PSQRYSRV, PSSAMSRV).
3	Tuxedo Service Name	Tuxedo Service Name, such as ICPanel, ICScript, and so on.

Metrics

Metric	Value	Description
1	PeopleCode SQL Time	Execution Time for SQLExec and SQL object (milliseconds).
2	PCode Builtin SQL Time	Total PeopleCode BuiltIn SQL Execution Time(milliseconds).
3	PeopleTools SQL Time	SQL time excluding PeopleCode and BuiltIn SQL (milliseconds).
4	SQL Fetch Count	Total number of rows fetched from the database.
5	SQL Execute Count	SQL Execute Count.

Metric	Value	Description
6	Not used	Not used
7	Not used	Not used

Additional Label

None.

PMU 428

PMU 428 has the following identification attributes.

Attribute	Value
ID	428
Label	Serialization
Description	SQL summary metrics during serialization.

Filter Level

PMU 428 has a filter level of 6.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	Server Name	Server Name (such as, PSAPPSRV, PSQRYSRV, PSSAMSRV).
3	Tuxedo Service Name	Tuxedo Service Name, such as ICPanel, ICScript, and so on.

Metrics

Metric	Value	Description
1	PeopleCode SQL Time	Execution Time for SQLExec and SQL object (milliseconds).

Metric	Value	Description
2	PCode Builtin SQL Time	Total PeopleCode Builtin SQL Execution Time(milliseconds).
3	PeopleTools SQL Time	SQL time excluding PeopleCode and Builtin SQL (milliseconds).
4	SQL Fetch Count	Total number of rows fetched from the database.
5	SQL Execute Count	SQL Execute Count.
6	Not used	Not used
7	Not used	Not used

Additional Label

None.

PMU 439

PMU 439 has the following identification attributes.

Attribute	Value
ID	439
Label	Workflow PCode Summary
Description	Component, Component Record and Record Field Events.

Filter Level

PMU 439 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.

Context	Value	Description
2	PeopleCode Event	PeopleCode Event (such as SavePreChange).
3	Not used	Not used

Metrics

Metric	Value	Description
1	Record Field PCode Exec Count	Execution count for record field level PeopleCode.
2	Record Field PCode Exec Time	Total execution time for record field-level PCode (ms).
3	Not used	Not used
4	Not used	Not used
5	Component PCode Exec Count	Execution count for component-level PeopleCode
6	Component Level PCode Time	Total execution time for component-level PeopleCode (ms)
7	Not used	Not used

Additional Label

None.

PMU 500

PMU 500 has the following identification attributes.

Attribute	Value
ID	500
Label	SavePreChange PCode Summary
Description	Component, Component Record and Record Field Events.

Filter Level

PMU 500 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	PeopleCode Event	PeopleCode Event (such as SavePreChange).
3	Not used	Not used

Metrics

Metric	Value	Description
1	Record Field PCode Exec Count	Execution count for record field level PeopleCode.
2	Record Field PCode Exec Time	Total execution time for record field-level PCode (ms).
3	Component Rec PCode Exec Count	Execution count for component record-level PeopleCode.
4	Component Rec PCode Exec Time	Total execution time for component record PeopleCode (ms).
5	Component PCode Exec Count	Execution count for component-level PeopleCode
6	Component Level PCode Time	Total execution time for component-level PeopleCode (ms)
7	Not used	Not used

Additional Label

None.

PMU 501

PMU 501 has the following identification attributes.

Attribute	Value
ID	501
Label	SavePostChange PCode Summary
Description	Component, Component Record and Record Field Events.

Filter Level

PMU 501 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	PeopleCode Event	PeopleCode Event (such as SavePreChange).
3	Not used	Not used

Metrics

Metric	Value	Description
1	Record Field PCode Exec Count	Execution count for record field level PeopleCode.
2	Record Field PCode Exec Time	Total execution time for record field-level PCode (ms).
3	Component Rec PCode Exec Count	Execution count for component record-level PeopleCode.
4	Component Rec PCode Exec Time	Total execution time for component record PeopleCode (ms).
5	Component PCode Exec Count	Execution count for component-level PeopleCode
6	Component Level PCode Time	Total execution time for component-level PeopleCode (ms)
7	Not used	Not used

Additional Label

None.

PMU 502

PMU 502 has the following identification attributes.

Attribute	Value
ID	502
Label	SaveEdit PCode Summary
Description	Component, Component Record and Record Field Events.

Filter Level

PMU 502 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	PeopleCode Event	PeopleCode Event (such as SavePreChange).
3	Not used	Not used

Metrics

Metric	Value	Description
1	Record Field PCode Exec Count	Execution count for record field level PeopleCode.
2	Record Field PCode Exec Time	Total execution time for record field-level PCode (ms).
3	Component Rec PCode Exec Count	Execution count for component record-level PeopleCode.
4	Component Rec PCode Exec Time	Total execution time for component record PeopleCode (ms).
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Label

None.

PMU 503

PMU 503 has the following identification attributes.

Attribute	Value
ID	503
Label	SaveEdit PCode Summary
Description	Component Record and Record Field Events.

Filter Level

PMU 503 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	PeopleCode Event	PeopleCode Event (such as SavePreChange).
3	Not used	Not used

Metrics

Metric	Value	Description
1	Record Field PCode Exec Count	Execution count for record field level PeopleCode.
2	Record Field PCode Exec Time	Total execution time for record field-level PCode (ms).
3	Component Rec PCode Exec Count	Execution count for component record-level PeopleCode.
4	Component Rec PCode Exec Time	Total execution time for component record PeopleCode (ms).

Metric	Value	Description
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Label

None.

PMU 504

PMU 504 has the following identification attributes.

Attribute	Value
ID	504
Label	RowSelect PCode Summary
Description	Component Record and Record Field Events.

Filter Level

PMU 504 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	PeopleCode Event	PeopleCode Event (such as SavePreChange).
3	Not used	Not used

Metrics

Metric	Value	Description
1	Record Field PCode Exec Count	Execution count for record field level PeopleCode.
2	Record Field PCode Exec Time	Total execution time for record field-level PCode (ms).
3	Component Rec PCode Exec Count	Execution count for component record-level PeopleCode.
4	Component Rec PCode Exec Time	Total execution time for component record PeopleCode (ms).
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Label

None.

PMU 505

PMU 505 has the following identification attributes.

Attribute	Value
ID	505
Label	RowInsert PCode Summary
Description	Component Record and Record Field Events.

Filter Level

PMU 505 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	PeopleCode Event	PeopleCode Event (such as SavePreChange).
3	Not used	Not used

Metrics

Metric	Value	Description
1	Record Field PCode Exec Count	Execution count for record field level PeopleCode.
2	Record Field PCode Exec Time	Total execution time for record field-level PCode (ms).
3	Component Rec PCode Exec Count	Execution count for component record-level PeopleCode.
4	Component Rec PCode Exec Time	Total execution time for component record PeopleCode (ms).
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Label

None.

PMU 506

PMU 506 has the following identification attributes.

Attribute	Value
ID	506
Label	RowDelete PCode Summary
Description	Component Record and Record Field Events.

Filter Level

PMU 506 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	PeopleCode Event	PeopleCode Event (such as SavePreChange).
3	Not used	Not used

Metrics

Metric	Value	Description
1	Record Field PCode Exec Count	Execution count for record field level PeopleCode.
2	Record Field PCode Exec Time	Total execution time for record field-level PCode (ms).
3	Component Rec PCode Exec Count	Execution count for component record-level PeopleCode.
4	Component Rec PCode Exec Time	Total execution time for component record PeopleCode (ms).
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Label

None.

PMU 507

PMU 507 has the following identification attributes.

Attribute	Value
ID	507
Label	FieldChange PCode Summary
Description	Component Record and Record Field Events.

Filter Level

PMU 507 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	PeopleCode Event	PeopleCode Event (such as SavePreChange).
3	Not used	Not used

Metrics

Metric	Value	Description
1	Record Field PCode Exec Count	Execution count for record field level PeopleCode.
2	Record Field PCode Exec Time	Total execution time for record field-level PCode (ms).
3	Comp Field PCode Exec Count	Execution count for component field level PeopleCode.
4	Comp Field PCode Time (ms)	Total execution time for component-field PeopleCode (ms).
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Label

None.

PMU 508

PMU 508 has the following identification attributes.

Attribute	Value
ID	508
Label	FieldEdit PCode Summary
Description	Component Record and Record Field Events.

Filter Level

PMU 508 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	PeopleCode Event	PeopleCode Event (such as SavePreChange).
3	Not used	Not used

Metrics

Metric	Value	Description
1	Record Field PCode Exec Count	Execution count for record field level PeopleCode.
2	Record Field PCode Exec Time	Total execution time for record field-level PCode (ms).
3	Comp Field PCode Exec Count	Execution count for component field level PeopleCode.
4	Comp Field PCode Time (ms)	Total execution time for component-field PeopleCode (ms).
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Label

None.

PMU 509

PMU 509 has the following identification attributes.

Attribute	Value
ID	509
Label	FieldDefault PCode Summary
Description	Component Record and Record Field Events.

Filter Level

PMU 509 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	PeopleCode Event	PeopleCode Event (such as SavePreChange).
3	Not used	Not used

Metrics

Metric	Value	Description
1	Record Field PCode Exec Count	Execution count for record field level PeopleCode.
2	Record Field PCode Exec Time	Total execution time for record field-level PCode (ms).
3	Comp Field PCode Exec Count	Execution count for component field level PeopleCode.
4	Comp Field PCode Time (ms)	Total execution time for component-field PeopleCode (ms).

Metric	Value	Description
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Label

None.

PMU 510

PMU 510 has the following identification attributes.

Attribute	Value
ID	510
Label	PrePopup PCode Summary
Description	Component Record and Record Field Events.

Filter Level

PMU 510 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	PeopleCode Event	PeopleCode Event (such as SavePreChange).
3	Not used	Not used

Metrics

Metric	Value	Description
1	Record Field PCode Exec Count	Execution count for record field level PeopleCode.
2	Record Field PCode Exec Time	Total execution time for record field-level PCode (ms).
3	Comp Field PCode Exec Count	Execution count for component field level PeopleCode.
4	Comp Field PCode Time (ms)	Total execution time for component-field PeopleCode (ms).
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Label

None.

PMU 511

PMU 511 has the following identification attributes.

Attribute	Value
ID	511
Label	ItemSelected PCode Summary
Description	Popup Menu Event.

Filter Level

PMU 511 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	PeopleCode Event	PeopleCode Event (such as SavePreChange).
3	Not used	Not used

Metrics

Metric	Value	Description
1	Popup Menu PCode Exec Count	Execution count for Popup menu-level PeopleCode.
2	Popup Menu PCode Time (ms)	Total execution time for Popup menu-level PCode(ms).
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Label

None.

PMU 512

PMU 512 has the following identification attributes.

Attribute	Value
ID	512
Label	SearchInit PCode Summary
Description	Component Record and Record Field Events.

Filter Level

PMU 512 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	PeopleCode Event	PeopleCode Event (such as SavePreChange).
3	Not used	Not used

Metrics

Metric	Value	Description
1	Popup Menu PCode Exec Count	Execution count for Popup menu-level PeopleCode.
2	Popup Menu PCode Time (ms)	Total execution time for Popup menu level PCode (ms).
3	Component Rec PCode Exec Count	Execution count for component record-level PeopleCode.
4	Component Rec PCode Exec Time	Total execution time for component record PeopleCode (ms).
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Label

None.

PMU 513

PMU 513 has the following identification attributes.

Attribute	Value
ID	513

Attribute	Value
Label	SearchSave PCode Summary
Description	Component Record and Record Field Events.

Filter Level

PMU 513 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	PeopleCode Event	PeopleCode Event (such as SavePreChange).
3	Not used	Not used

Metrics

Metric	Value	Description
1	Record Field PCode Exec Count	Execution count for record field level PeopleCode.
2	Record Field PCode Exec Time	Total execution time for record field-level PCode (ms).
3	Component Rec PCode Exec Count	Execution count for component record-level PeopleCode.
4	Component Rec PCode Exec Time	Total execution time for component record PeopleCode (ms).
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Label

None.

PMU 514

PMU 514 has the following identification attributes.

Attribute	Value
ID	514
Label	Active PCode Summary
Description	Page Events.

Filter Level

PMU 514 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	PeopleCode Event	PeopleCode Event (such as SavePreChange).
3	Not used	Not used

Metrics

Metric	Value	Description
1	Page PCode Exec Count	Execution count for page-level PeopleCode.
2	Page PCode Time (ms)	Total execution time for page-level PeopleCode (ms)
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Label

None.

PMU 515

PMU 515 has the following identification attributes.

Attribute	Value
ID	515
Label	PreBuild PCode Summary
Description	Component Events.

Filter Level

PMU 515 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	PeopleCode Event	PeopleCode Event (such as SavePreChange).
3	Not used	Not used

Metrics

Metric	Value	Description
1	Not used	Not used
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Component PCode Exec Count	Execution count for component-level PeopleCode.

Metric	Value	Description
6	Component Level PCode Time	Total execution time for component-level PeopleCode (ms).
7	Not used	Not used

Additional Label

None.

PMU 516

PMU 516 has the following identification attributes.

Attribute	Value
ID	516
Label	PostBuild PCode Summary
Description	Component Events.

Filter Level

PMU 516 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Generic	Generic - Varies based upon server and service request.
2	PeopleCode Event	PeopleCode Event (such as SavePreChange).
3	Not used	Not used

Metrics

Metric	Value	Description
1	Not used	Not used
2	Not used	Not used

Metric	Value	Description
3	Not used	Not used
4	Not used	Not used
5	Component PCode Exec Count	Execution count for component-level PeopleCode.
6	Component Level PCode Time	Total execution time for component-level PeopleCode (ms).
7	Not used	Not used

Additional Label

None.

PMU 700

PMU 700 has the following identification attributes.

Attribute	Value
ID	700
Label	PPMI Servlet
Description	Reported at entry and exit of PPMI servlet.

Filter Level

PMU 700 has a filter level of 5.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Session ID	Web server session ID.
2	IP Address	Client IP address.
3	Not used	Not used

Metrics

Metric	Value	Description
1	Not used	Not used
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Label

None.

PMU 800

PMU 800 has the following identification attributes.

Attribute	Value
ID	800
Label	Monitoring Servlet Request
Description	Monitoring Servlet Incoming Buffer from Agent.

Filter Level

PMU 800 has a filter level of 6.

Sampling Enabled

Yes.

Contexts

Context	Value	Description
1	Session ID	Web server session ID.

Context	Value	Description
2	IP Address	Client IP address.
3	Agent ID	PeopleSoft Performance Monitor Agent ID.

Metrics

Metric	Value	Description
1	Monitor Buffer Size (bytes)	Number of data objects (Events & PMUs) in incoming buffer.
2	Collator Group Count	Number of collator groups to which events were reported.
3	Agent Version	Agent version number.
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Label

None.

APPENDIX B

Event Definition Reference

This appendix contains the structure of each event defined in the PeopleSoft system.

Note. Currently, there is only one event set definition, set 1.

Event 150

Event 150 has the following identification attributes.

Attribute	Value
ID	150
Label	JVM Status
Description	JVM Status

Filter Level

Event 150 has a filter level of 4.

Metrics

Metric	Value	Description
1	%JVM Memory Used	JVM % Memory in use.
2	Max JVM Memory Available	JVM Max bytes available.
3	Sessions in Web-App	JVM Number of sessions in Web Application.
4	Execute Threads	JVM Number of execute threads.
5	Busy Threads	JVM Number of busy threads.
6	Domain Count	Number of domains on the web server.
7	Not used	Not used

Additional Data Label

None.

Event 151

Event 151 has the following identification attributes.

Attribute	Value
ID	151
Label	Network Status
Description	Netstat socket counts and other network traffic metrics.

Filter Level

Event 151 has a filter level of 4.

Metrics

Metric	Value	Description
1	Time_Wait Sockets	Number of sockets in Time_Wait state reported by Netstat.
2	Close_Wait Sockets	Number of sockets in Close_Wait state reported by Netstat.
3	Established Sockets	Number of sockets in Established state reported by Netstat.
4	JOLT Traffic (bytes/sec)	Network Status - Jolt bytes per sec.
5	HTTP (bytes/sec)	Network Status - HTTP bytes per sec.
6	Not used	Not used
7	Not used	Not used

Additional Data Label

None.

Event 152

Event 152 has the following identification attributes.

Attribute	Value
ID	152

Attribute	Value
Label	Web Site Status
Description	Web site status reported by web server Domain Monitor.

Filter Level

Event 152 has a filter level of 4.

Metrics

Metric	Value	Description
1	Requests to all Servlets	Total requests to all servlets (web server Domain Monitor).
2	Servlet Requests (last minute)	Servlet requests in last minute (web server Domain Monitor).
3	Avg Request Time (last minute)	Average request time in last minute (web server Domain Monitor).
4	Time in all Servlets (ms)	Total servlet request time (web server Domain Monitor).
5	Current Sessions	Current number of sessions (web server Domain Monitor).
6	Not used	Not used
7	Site Path	Site Path.

Additional Data Label

None.

Event 153

Event 153 has the following identification attributes.

Attribute	Value
ID	153
Label	Web Servlet Status
Description	Web servlet status reported by Web Server Domain Monitor.

Filter Level

Event 153 has a filter level of 4.

Metrics

Metric	Value	Description
1	Requests to all Servlets	Total requests to this servlet (Web Server Domain Monitor).
2	Servlet Requests (last minute)	Servlet requests in last minute (Web Server Domain Monitor).
3	Avg Request Time (last minute)	Average request time in last minute (Web Server Domain Monitor).
4	Time in this Servlet (ms)	Total time in this servlet (Web Server Domain Monitor).
5	Not used	Not used
6	Not used	Not used
7	Servlet Name	Servlet name for reported event (Web Server Domain Monitor).

Additional Data Label

Servlet Path

Event 200

Event 200 has the following identification attributes.

Attribute	Value
ID	200
Label	Resources Per Process
Description	Machine resource utilization metrics from C++ processes.

Filter Level

Event 200 has a filter level of 4.

Metrics

Metric	Value	Description
1	%CPU Used	%CPU currently consumed.
2	CPU Time (secs)	Total User Time - CPU time consumed by this process (secs).
3	VM (bytes)	Total Virtual Memory consumed by process.
4	Working Set (bytes)	Amount of physical memory consumed by the process.
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Data Label

None.

Event 300

Event 300 has the following identification attributes.

Attribute	Value
ID	300
Label	Host Resource Status
Description	Host Resource metrics from PSMONITORSRV.

Filter Level

Event 300 has a filter level of 4.

Metrics

Metric	Value	Description
1	%CPU Used	%CPU currently consumed.
2	%Memory Used	%Memory Consumed.
3	Hard Page Faults/Second	Hard page faults per second.

Metric	Value	Description
4	Total Tuxedo Connections	Total Tuxedo "pclt" connections.
5	Total Tuxedo Requests Queued	Total Tuxedo Requests Queued (Sum of "pq").
6	Not used	Not used
7	Not used	Not used

Additional Data Label

Tuxedo Domain Trace Levels.

Event 301

Event 301 has the following identification attributes.

Attribute	Value
ID	301
Label	Tuxedo "pq" Row
Description	Reported in groups to simulate a Tuxedo command line "pq."

Filter Level

Event 301 has a filter level of 4.

Metrics

Metric	Value	Description
1	Server Count	Number of Tuxedo servers.
2	Queue Length	Number of Tuxedo service requests in queue.
3	Avg. Queue Length	Average Tuxedo queue length.
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Queue Name	Tuxedo Queue Name.

Additional Data Label

Server Name.

Event 302

Event 302 has the following identification attributes.

Attribute	Value
ID	302
Label	Tuxedo "psr" Row
Description	Reported in groups to simulate a Tuxedo command line "psr."

Filter Level

Event 302 has a filter level of 4.

Metrics

Metric	Value	Description
1	Server Instance	Tuxedo Server Instance ID.
2	Total Requests	Total Tuxedo Requests to this Server.
3	PID	O/S Process Identifier (PID).
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Server Name	Tuxedo Server Name.

Additional Data Label

Current Service.

Event 350

Event 350 has the following identification attributes.

Attribute	Value
ID	350
Label	Master Scheduler Status
Description	Master Scheduler Process Status.

Filter Level

Event 350 has a filter level of 4.

Metrics

Metric	Value	Description
1	Active Processes	Process Scheduler - Number of processes running.
2	Queued Processes	Process Scheduler - Number of processes queued.
3	Blocked Processes	Process Scheduler - Blocked Processes.
4	Unused Process Slots	Process Scheduler - Available Process Slots
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Data Label

None.

Event 351

Event 351 has the following identification attributes.

Attribute	Value
ID	351
Label	Master Scheduler Detail
Description	Master Scheduler Details per Process Scheduler Server.

Filter Level

Event 351 has a filter level of 4.

Metrics

Metric	Value	Description
1	Active Processes	Process Scheduler - Number of processes running
2	Not used	Not used
3	Not used	Not used
4	Unused Process Slots	Process Scheduler - Available Process Slots
5	Not used	Not used
6	Not used	Not used
7	Server Name	Server Name.

Additional Data Label

Process Type.

Event 354

Event 354 has the following identification attributes.

Attribute	Value
ID	354
Label	Batch Queue Details
Description	Master Scheduler Queue Details per Process Type.

Filter Level

Event 354 has a filter level of 4.

Metrics

Metric	Value	Description
1	Queued Processes	Process Scheduler - Number of processes queued.

Metric	Value	Description
2	Blocked Processes	Process Scheduler - Blocked Processes.
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Process Type	Process Scheduler - Process type.

Additional Data Label

None.

Event 355

Event 355 has the following identification attributes.

Attribute	Value
ID	355
Label	Killed Query
Description	Query killed by PSMONITORSRV at user request.

Filter Level

Event 355 has a filter level of 3.

Metrics

Metric	Value	Description
1	Timed-out ?	Boolean - has the query timed-out?
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used

Metric	Value	Description
6	Not used	Not used
7	Query Name	Name of the Query that was killed.

Additional Data Label

Query details.

Event 500

Event 500 has the following identification attributes.

Attribute	Value
ID	500
Label	JOLT Service Exception
Description	JOLT Service Exception (for example, an application server service timeout).

Filter Level

Event 500 has a filter level of 3.

Metrics

Metric	Value	Description
1	PMU instance affected	PMU instance effected.
2	JOLT Error Number	JOLT Error Number.
3	No used	No used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Jolt Error Detail	Jolt Error Detail

Additional Data Label

None.

Event 600

Event 600 has the following identification attributes.

Attribute	Value
ID	600
Label	PSPING
Description	PSPING metrics forwarded from browser.

Filter Level

Event 600 has a filter level of 3.

Metrics

Metric	Value	Description
1	Network Latency (ms)	PSPING - Network latency (milliseconds).
2	WebServer Latency (ms)	PSPING - Web Server latency (milliseconds).
3	AppServer Latency (ms)	PSPING - application server latency (milliseconds).
4	DB Latency (milliseconds)	PSPING - database latency (milliseconds).
5	Not used	Not used
6	Not used	Not used
7	IP Address	

Additional Data Label

OPRID (user ID), JSessionID.

Event 601

Event 601 has the following identification attributes.

Attribute	Value
ID	601

Attribute	Value
Label	User Monitoring Level Override
Description	Performance Trace user override of filter level.

Filter Level

Event 601 has a filter level of 4.

Metrics

Metric	Value	Description
1	Agent Filter Mask	Agent Filter Mask.
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	User Initiated PMU Name	User Initiated PMU Name

Additional Data Label

None.

Event 701

Event 701 has the following identification attributes.

Attribute	Value
ID	701
Label	PPMI Notify Interest
Description	PPMI Client registration - registerNotificationInterest.

Filter Level

Event 701 has a filter level of 4.

Metrics

Metric	Value	Description
1	Not used	Not used
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Data Label

Additional Data.

Event 702

Event 702 has the following identification attributes.

Attribute	Value
ID	702
Label	PPMI Notify Listener
Description	PPMI Client registration - registerNotificationListener.

Filter Level

Event 702 has a filter level of 4.

Metrics

Metric	Value	Description
1	Not used	Not used
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used

Metric	Value	Description
6	Not used	Not used
7	PPMI Group Name	PPMI Group Name.

Additional Data Label

Additional Data.

Event 703

Event 703 has the following identification attributes.

Attribute	Value
ID	703
Label	PPMI Notify Cancel Interest
Description	PPMI Client disconnected - cancelNotificationInterest

Filter Level

Event 703 has a filter level of 4.

Metrics

Metric	Value	Description
1	Not used	Not used
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	PPMI Group Name	PPMI Group Name

Additional Data Label

Additional Data.

Event 704

Event 704 has the following identification attributes.

Attribute	Value
ID	704
Label	PPMI Notify Agent Change
Description	Administrator altered agent state -notifyStateChange.

Filter Level

Event 704 has a filter level of 4.

Metrics

Metric	Value	Description
1	Not used	Not used
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Data Label

Additional Data.

Event 705

Event 705 has the following identification attributes.

Attribute	Value
ID	705
Label	PPMI Notify Monitor Change
Description	Administrator altered cluster state - notifyStateChange.

Filter Level

Event 705 has a filter level of 4.

Metrics

Metric	Value	Description
1	Not used	Not used
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Data Label

None.

Event 801

Event 801 has the following identification attributes.

Attribute	Value
ID	801
Label	Monitor Server Buffer Overrun
Description	Monitoring Server Alarm - Buffer Overrun

Filter Level

Event 801 has a filter level of 3.

Metrics

Metric	Value	Description
1	Dropped Items	Number of objects that were dropped from the buffer.
2	Not used	Not used

Metric	Value	Description
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	PPMI Client URL	URL of PPMIClient.

Additional Data Label

None.

Event 802

Event 802 has the following identification attributes.

Attribute	Value
ID	802
Label	Monitoring Server Client Lost
Description	Monitoring Server Alarm - Unable to Contact PPMIClient

Filter Level

Event 802 has a filter level of 3.

Metrics

Metric	Value	Description
1	Not used	Not used
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	PPMI Client URL	URL of PPMIClient.

Additional Data Label

None.

Event 803

Event 803 has the following identification attributes.

Attribute	Value
ID	803
Label	Monitoring Server Data Lost
Description	Monitor Server Alarm - Data lost due to PPMI Client error.

Filter Level

Event 803 has a filter level of 3.

Metrics

Metric	Value	Description
1	Not used	Not used
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	PPMI Client URL	URL of PPMIClient.

Additional Data Label

None.

Event 900

Event 900 has the following identification attributes.

Attribute	Value
ID	900
Label	Agent Buffer Overrun
Description	Agent Alarm - Buffer Overrun Alarm

Filter Level

Event 900 has a filter level of 3.

Metrics

Metric	Value	Description
1	Dropped Items	Number of objects that were dropped from the buffer.
2	Buffer Size (bytes)	Estimated size of current buffer, when item was dropped.
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Monitor Servlet URL	Monitor Servlet URL.

Additional Data Label

None.

Event 901

Event 901 has the following identification attributes.

Attribute	Value
ID	901
Label	Agent Init Notification
Description	Agent Event - Agent Initialization

Filter Level

Event 901 has a filter level of 4.

Metrics

Metric	Value	Description
1	Contact Attempts	Number of failed contact attempts before success.
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Data Label

Additional Data.

Event 902

Event 902 has the following identification attributes.

Attribute	Value
ID	902
Label	Agent Configuration Ack
Description	Agent Event - Agent Dynamic Configuration State Change Ack

Filter Level

Event 902 has a filter level of 4.

Metrics

Metric	Value	Description
1	Agent Buffer Max Size (bytes)	Agent Buffer Maximum Size.
2	Agent Send Interval (secs)	Agent Buffer Send Interval.
3	Agent HeartBeat Interval (secs)	Agent HeartBeat Interval.
4	Agent Filter Mask	Agent Filter Mask.

Metric	Value	Description
5	Agent Idle Time (secs)	Agent Idle Time.
6	Not used	Not used
7	Not used	Not used

Additional Data Label

None.

Event 903

Event 903 has the following identification attributes.

Attribute	Value
ID	903
Label	Agent Contact Notification
Description	Agent Event - Contact Initiated with Monitoring Server

Filter Level

Event 903 has a filter level of 6.

Metrics

Metric	Value	Description
1	Contact Attempts	Number of failed contact attempts before success.
2	Not used	Not used
3	Not used	Not used
4	Not used	Not used
5	Not used	Not used
6	Not used	Not used
7	Not used	Not used

Additional Data Label

None.

APPENDIX C

ISO Country and Currency Codes

PeopleBooks use International Organization for Standardization (ISO) country and currency codes to identify country-specific information and monetary amounts.

This appendix discusses:

- ISO country codes.
- ISO currency codes.

See Also

“About This PeopleBook” Typographical Conventions and Visual Cues

ISO Country Codes

This table lists the ISO country codes that may appear as country identifiers in PeopleBooks:

ISO Country Code	Country Name
ABW	Aruba
AFG	Afghanistan
AGO	Angola
AIA	Anguilla
ALB	Albania
AND	Andorra
ANT	Netherlands Antilles
ARE	United Arab Emirates
ARG	Argentina
ARM	Armenia
ASM	American Samoa
ATA	Antarctica

ISO Country Code	Country Name
ATF	French Southern Territories
ATG	Antigua and Barbuda
AUS	Australia
AUT	Austria
AZE	Azerbaijan
BDI	Burundi
BEL	Belgium
BEN	Benin
BFA	Burkina Faso
BGD	Bangladesh
BGR	Bulgaria
BHR	Bahrain
BHS	Bahamas
BIH	Bosnia and Herzegovina
BLR	Belarus
BLZ	Belize
BMU	Bermuda
BOL	Bolivia
BRA	Brazil
BRB	Barbados
BRN	Brunei Darussalam
BTN	Bhutan
BVT	Bouvet Island
BWA	Botswana
CAF	Central African Republic
CAN	Canada
CCK	Cocos (Keeling) Islands

ISO Country Code	Country Name
CHE	Switzerland
CHL	Chile
CHN	China
CIV	Cote D'Ivoire
CMR	Cameroon
COD	Congo, The Democratic Republic
COG	Congo
COK	Cook Islands
COL	Colombia
COM	Comoros
CPV	Cape Verde
CRI	Costa Rica
CUB	Cuba
CXR	Christmas Island
CYM	Cayman Islands
CYP	Cyprus
CZE	Czech Republic
DEU	Germany
DJI	Djibouti
DMA	Dominica
DNK	Denmark
DOM	Dominican Republic
DZA	Algeria
ECU	Ecuador
EGY	Egypt
ERI	Eritrea
ESH	Western Sahara

ISO Country Code	Country Name
ESP	Spain
EST	Estonia
ETH	Ethiopia
FIN	Finland
FJI	Fiji
FLK	Falkland Islands (Malvinas)
FRA	France
FRO	Faroe Islands
FSM	Micronesia, Federated States
GAB	Gabon
GBR	United Kingdom
GEO	Georgia
GHA	Ghana
GIB	Gibraltar
GIN	Guinea
GLP	Guadeloupe
GMB	Gambia
GNB	Guinea-Bissau
GNQ	Equatorial Guinea
GRC	Greece
GRD	Grenada
GRL	Greenland
GTM	Guatemala
GUF	French Guiana
GUM	Guam
GUY	Guyana
GXA	GXA - GP Core Country

ISO Country Code	Country Name
GXB	GXB - GP Core Country
GXC	GXC - GP Core Country
GXD	GXD - GP Core Country
HKG	Hong Kong
HMD	Heard and McDonald Islands
HND	Honduras
HRV	Croatia
HTI	Haiti
HUN	Hungary
IDN	Indonesia
IND	India
IOT	British Indian Ocean Territory
IRL	Ireland
IRN	Iran (Islamic Republic Of)
IRQ	Iraq
ISL	Iceland
ISR	Israel
ITA	Italy
JAM	Jamaica
JOR	Jordan
JPN	Japan
KAZ	Kazakstan
KEN	Kenya
KGZ	Kyrgyzstan
KHM	Cambodia
KIR	Kiribati
KNA	Saint Kitts and Nevis

ISO Country Code	Country Name
KOR	Korea, Republic of
KWT	Kuwait
LAO	Lao People's Democratic Rep
LBN	Lebanon
LBR	Liberia
LBY	Libyan Arab Jamahiriya
LCA	Saint Lucia
LIE	Liechtenstein
LKA	Sri Lanka
LSO	Lesotho
LTU	Lithuania
LUX	Luxembourg
LVA	Latvia
MAC	Macao
MAR	Morocco
MCO	Monaco
MDA	Moldova, Republic of
MDG	Madagascar
MDV	Maldives
MEX	Mexico
MHL	Marshall Islands
MKD	Fmr Yugoslav Rep of Macedonia
MLI	Mali
MLT	Malta
MMR	Myanmar
MNG	Mongolia
MNP	Northern Mariana Islands

ISO Country Code	Country Name
MOZ	Mozambique
MRT	Mauritania
MSR	Montserrat
MTQ	Martinique
MUS	Mauritius
MWI	Malawi
MYS	Malaysia
MYT	Mayotte
NAM	Namibia
NCL	New Caledonia
NER	Niger
NFK	Norfolk Island
NGA	Nigeria
NIC	Nicaragua
NIU	Niue
NLD	Netherlands
NOR	Norway
NPL	Nepal
NRU	Nauru
NZL	New Zealand
OMN	Oman
PAK	Pakistan
PAN	Panama
PCN	Pitcairn
PER	Peru
PHL	Philippines
PLW	Palau

ISO Country Code	Country Name
PNG	Papua New Guinea
POL	Poland
PRI	Puerto Rico
PRK	Korea, Democratic People's Rep
PRT	Portugal
PRY	Paraguay
PSE	Palestinian Territory, Occupie
PYF	French Polynesia
QAT	Qatar
REU	Reunion
ROU	Romania
RUS	Russian Federation
RWA	Rwanda
SAU	Saudi Arabia
SDN	Sudan
SEN	Senegal
SGP	Singapore
SGS	Sth Georgia & Sth Sandwich Is
SHN	Saint Helena
SJM	Svalbard and Jan Mayen
SLB	Solomon Islands
SLE	Sierra Leone
SLV	El Salvador
SMR	San Marino
SOM	Somalia
SPM	Saint Pierre and Miquelon
STP	Sao Tome and Principe

ISO Country Code	Country Name
SUR	Suriname
SVK	Slovakia
SVN	Slovenia
SWE	Sweden
SWZ	Swaziland
SYC	Seychelles
SYR	Syrian Arab Republic
TCA	Turks and Caicos Islands
TCD	Chad
TGO	Togo
THA	Thailand
TJK	Tajikistan
TKL	Tokelau
TKM	Turkmenistan
TLS	East Timor
TON	Tonga
TTO	Trinidad and Tobago
TUN	Tunisia
TUR	Turkey
TUV	Tuvalu
TWN	Taiwan, Province of China
TZA	Tanzania, United Republic of
UGA	Uganda
UKR	Ukraine
UMI	US Minor Outlying Islands
URY	Uruguay
USA	United States

ISO Country Code	Country Name
UZB	Uzbekistan
VAT	Holy See (Vatican City State)
VCT	St Vincent and the Grenadines
VEN	Venezuela
VGB	Virgin Islands (British)
VIR	Virgin Islands (U.S.)
VNM	Viet Nam
VUT	Vanuatu
WLF	Wallis and Futuna Islands
WSM	Samoa
YEM	Yemen
YUG	Yugoslavia
ZAF	South Africa
ZMB	Zambia
ZWE	Zimbabwe

ISO Currency Codes

This table lists the ISO country codes that may appear as currency identifiers in PeopleBooks:

ISO Currency Code	Description
ADP	Andorran Peseta
AED	United Arab Emirates Dirham
AFA	Afghani
AFN	Afghani
ALK	Old Lek
ALL	Lek
AMD	Armenian Dram

ISO Currency Code	Description
ANG	Netherlands Antilles Guilder
AOA	Kwanza
AOK	Kwanza
AON	New Kwanza
AOR	Kwanza Reajustado
ARA	Austral
ARP	Peso Argentino
ARS	Argentine Peso
ARY	Peso
ATS	Schilling
AUD	Australian Dollar
AWG	Aruban Guilder
AZM	Azerbaijani Manat
BAD	Dinar
BAM	Convertible Marks
BBD	Barbados Dollar
BDT	Taka
BEC	Convertible Franc
BEF	Belgian Franc
BEL	Financial Belgian Franc
BGJ	Lev A/52
BGK	Lev A/62
BGL	Lev
BGN	Bulgarian LEV
BHD	Bahraini Dinar
BIF	Burundi Franc
BMD	Bermudian Dollar

ISO Currency Code	Description
BND	Brunei Dollar
BOB	Boliviano
BOP	Peso
BOV	Mvdol
BRB	Cruzeiro
BRC	Cruzado
BRE	Cruzeiro
BRL	Brazilian Real
BRN	New Cruzado
BRR	Brazilian Real Dollar
BSD	Bahamian Dollar
BTN	Ngultrum
BUK	N/A
BWP	Pula
BYB	Belarussian Ruble
BYR	Belarussian Ruble
BZD	Belize Dollar
CAD	Canadian Dollar
CDF	Franc Congolais
CHF	Swiss Franc
CLF	Unidades de fomento
CLP	Chilean Peso
CNX	Peoples Bank Dollar
CNY	Yuan Renminbi
COP	Colombian Peso
CRC	Costa Rican Colon
CSD	Serbia Dinar

ISO Currency Code	Description
CSJ	Krona A/53
CSK	Koruna
CUP	Cuban Peso
CVE	Cape Verde Escudo
CYP	Cyprus Pound
CZK	Czech Koruna
DEM	Deutsche Mark
DJF	Djibouti Franc
DKK	Danish Krone
DOP	Dominican Peso
DZD	Algerian Dinar
ECS	Sucre
ECV	Unidad de Valor
EEK	Kroon
EGP	Egyptian Pound
EQE	Ekwele
ERN	Nakfa
ESA	Spanish Peseta
ESB	Convertible Peseta
ESP	Spanish Peseta
ETB	Ethiopian Birr
EUR	euro
FIM	Markka
FJD	Fiji Dollar
FKP	Falklands Isl. Pound
FRF	French Franc
GBP	Pound Sterling

ISO Currency Code	Description
GEK	Georgian Coupon
GEL	Lari
GHC	Cedi
GIP	Gibraltar Pound
GMD	Dalasi
GNE	Syli
GNF	Guinea Franc
GNS	Syli
GQE	Ekwele
GRD	Drachma
GTQ	Quetzal
GWE	Guinea Escudo
GWP	Guinea-Bissau Peso
GYD	Guyana Dollar
HKD	Hong Kong Dollar
HNL	Lempira
HRD	Dinar
HRK	Kuna
HTG	Gourde
HUF	Forint
IDR	Rupiah
IEP	Irish Pound
ILP	Pound
ILR	Old Shekel
ILS	New Israeli Sheqel
INR	Indian Rupee
IQD	Iraqi Dinar

ISO Currency Code	Description
IRR	Iranian Rial
ISJ	Old Krona
ISK	Iceland Krona
ITL	Italian Lira
JMD	Jamaican Dollar
JOD	Jordanian Dinar
JPY	Yen
KES	Kenyan Shilling
KGS	Som
KHR	Riel
KMF	Comoro Franc
KPW	North Korean Won
KRW	Won
KWD	Kuwaiti Dinar
KYD	Cayman Islands dollar
KZT	Tenge
LAJ	Kip Pot Pol
LAK	Kip
LBP	Lebanese Pound
LKR	Sri Lanka Rupee
LRD	Liberian Dollar
LSL	Loti
LSM	Maloti
LTL	Lithuanian Litas
LTT	Talonas
LUC	Convertib Franc
LUF	Luxembourg Franc

ISO Currency Code	Description
LUL	Financial Franc
LVL	Latvian Lats
LVR	Latvian Ruble
LYD	Libyan Dinar
MAD	Moroccan Dirham
MAF	Mali Franc
MDL	Moldovan Leu
MGF	Malagasy Franc
MKD	Denar
MLF	Mali Franc
MMK	Kyat
MNT	Tugrik
MOP	Pataca
MRO	Ouguiya
MTL	Maltese Lira
MTP	Maltese Pound
MUR	Mauritius Rupee
MVQ	Maldive Rupee
MVR	Rufiyaa
MWK	Malawian Kwacha
MXN	Mexican Peso
MXP	Mexican Peso
MXV	Mexican UDI
MYR	Malaysian Ringgit
MZE	Mozambique Escudo
MZM	Metical
NAD	Namibia Dollar

ISO Currency Code	Description
NGN	Naira
NIC	Cordoba
NIO	Cordoba Oro
NLG	Netherlands Guilder
NOK	Norwegian Krone
NPR	Nepalese Rupee
NZD	New Zealand Dollar
OMR	Rial Omani
PAB	Balboa
PEI	Inti
PEN	Nuevo Sol
PES	Sol
PGK	Kina
PHP	Philippine Peso
PKR	Pakistan Rupee
PLN	Zloty
PLZ	Zloty
PTE	Portuguese Escudo
PYG	Guarani
QAR	Qatari Rial
ROK	Leu A/52
ROL	Leu
RUB	Russian Ruble
RUR	Russian Federation Rouble
RWF	Rwanda Franc
SAR	Saudi Riyal
SBD	Solomon Islands

ISO Currency Code	Description
SCR	Seychelles Rupee
SDD	Sudanese Dinar
SDP	Sudanese Pound
SEK	Swedish Krona
SGD	Singapore Dollar
SHP	St Helena Pound
SIT	Tolar
SKK	Slovak Koruna
SLL	Leone
SOS	Somali Shilling
SRG	Surinam Guilder
STD	Dobra
SUR	Rouble
SVC	El Salvador Colon
SYP	Syrian Pound
SZL	Lilangeni
THB	Baht
TJR	Tajik Ruble
TJS	Somoni
TMM	Manat
TND	Tunisian Dinar
TOP	Pa'anga
TPE	Timor Escudo
TRL	Turkish Lira
TTD	Trinidad Dollar
TWD	New Taiwan Dollar
TZS	Tanzanian Shilling

ISO Currency Code	Description
UAH	Hryvnia
UAK	Karbovanet
UGS	Uganda Shilling
UGW	Old Shilling
UGX	Uganda Shilling
USD	US Dollar
USN	US Dollar (Next day)
USS	US Dollar (Same day)
UYN	Old Uruguay Peso
UYP	Uruguayan Peso
UYU	Peso Uruguayo
UZS	Uzbekistan Sum
VEB	Bolivar
VNC	Old Dong
VND	Dong
VUV	Vatu
WST	Tala
XAF	CFA Franc BEAC
XAG	Silver
XAU	GOLD
XBA	European Composite Unit
XBB	European Monetary Unit
XBC	European Unit of Account 9
XBD	European Unit of Account 17
XCD	East Caribbean Dollar
XDR	SDR
XEU	EU Currency (E.C.U)

ISO Currency Code	Description
XFO	Gold-Franc
XFU	UIC-Franc
XOF	CFA Franc BCEAO
XPD	Palladium
XPF	CFP Franc
XPT	Platinum
XTS	For Testing Purposes
XXX	Non Currency Transaction
YDD	Yemeni Din
YER	Yemeni Rial
YUD	New Yugoslavian Dinar
YUM	New Dinar
YUN	Yugoslavian Dinar
ZAL	Financial Rand
ZAR	Rand
ZMK	Zambian Kwacha
ZRN	New Zaire
ZRZ	Zaire
ZWC	Rhodesian Dollar
ZWD	Zimbabwe Dollar

Glossary of PeopleSoft Terms

absence entitlement	This element defines rules for granting paid time off for valid absences, such as sick time, vacation, and maternity leave. An absence entitlement element defines the entitlement amount, frequency, and entitlement period.
absence take	This element defines the conditions that must be met before a payee is entitled to take paid time off.
accounting class	In PeopleSoft Enterprise Performance Management, the accounting class defines how a resource is treated for generally accepted accounting practices. The Inventory class indicates whether a resource becomes part of a balance sheet account, such as inventory or fixed assets, while the Non-inventory class indicates that the resource is treated as an expense of the period during which it occurs.
accounting date	The accounting date indicates when a transaction is recognized, as opposed to the date the transaction actually occurred. The accounting date and transaction date can be the same. The accounting date determines the period in the general ledger to which the transaction is to be posted. You can only select an accounting date that falls within an open period in the ledger to which you are posting. The accounting date for an item is normally the invoice date.
accounting split	The accounting split method indicates how expenses are allocated or divided among one or more sets of accounting ChartFields.
accumulator	You use an accumulator to store cumulative values of defined items as they are processed. You can accumulate a single value over time or multiple values over time. For example, an accumulator could consist of all voluntary deductions, or all company deductions, enabling you to accumulate amounts. It allows total flexibility for time periods and values accumulated.
action reason	The reason an employee's job or employment information is updated. The action reason is entered in two parts: a personnel action, such as a promotion, termination, or change from one pay group to another—and a reason for that action. Action reasons are used by PeopleSoft Human Resources, PeopleSoft Benefits Administration, PeopleSoft Stock Administration, and the COBRA Administration feature of the Base Benefits business process.
action template	In PeopleSoft Receivables, outlines a set of escalating actions that the system or user performs based on the period of time that a customer or item has been in an action plan for a specific condition.
activity	<p>In PeopleSoft Enterprise Learning Management, an instance of a catalog item (sometimes called a class) that is available for enrollment. The activity defines such things as the costs that are associated with the offering, enrollment limits and deadlines, and waitlisting capacities.</p> <p>In PeopleSoft Enterprise Performance Management, the work of an organization and the aggregation of actions that are used for activity-based costing.</p> <p>In PeopleSoft Project Costing, the unit of work that provides a further breakdown of projects—usually into specific tasks.</p> <p>In PeopleSoft Workflow, a specific transaction that you might need to perform in a business process. Because it consists of the steps that are used to perform a transaction, it is also known as a step map.</p>

agreement	In PeopleSoft eSettlements, provides a way to group and specify processing options, such as payment terms, pay from a bank, and notifications by a buyer and supplier location combination.
allocation rule	In PeopleSoft Enterprise Incentive Management, an expression within compensation plans that enables the system to assign transactions to nodes and participants. During transaction allocation, the allocation engine traverses the compensation structure from the current node to the root node, checking each node for plans that contain allocation rules.
alternate account	A feature in PeopleSoft General Ledger that enables you to create a statutory chart of accounts and enter statutory account transactions at the detail transaction level, as required for recording and reporting by some national governments.
AR specialist	Abbreviation for <i>receivables specialist</i> . In PeopleSoft Receivables, an individual in who tracks and resolves deductions and disputed items.
arbitration plan	In PeopleSoft Enterprise Pricer, defines how price rules are to be applied to the base price when the transaction is priced.
assessment rule	In PeopleSoft Receivables, a user-defined rule that the system uses to evaluate the condition of a customer's account or of individual items to determine whether to generate a follow-up action.
asset class	An asset group used for reporting purposes. It can be used in conjunction with the asset category to refine asset classification.
attribute/value pair	In PeopleSoft Directory Interface, relates the data that makes up an entry in the directory information tree.
authentication server	A server that is set up to verify users of the system.
base time period	In PeopleSoft Business Planning, the lowest level time period in a calendar.
benchmark job	In PeopleSoft Workforce Analytics, a benchmark job is a job code for which there is corresponding salary survey data from published, third-party sources.
book	In PeopleSoft Asset Management, used for storing financial and tax information, such as costs, depreciation attributes, and retirement information on assets.
branch	A tree node that rolls up to nodes above it in the hierarchy, as defined in PeopleSoft Tree Manager.
budgetary account only	An account used by the system only and not by users; this type of account does not accept transactions. You can only budget with this account. Formerly called "system-maintained account."
budget check	In commitment control, the processing of source transactions against control budget ledgers, to see if they pass, fail, or pass with a warning.
budget control	In commitment control, budget control ensures that commitments and expenditures don't exceed budgets. It enables you to track transactions against corresponding budgets and terminate a document's cycle if the defined budget conditions are not met. For example, you can prevent a purchase order from being dispatched to a vendor if there are insufficient funds in the related budget to support it.
budget period	The interval of time (such as 12 months or 4 quarters) into which a period is divided for budgetary and reporting purposes. The ChartField allows maximum flexibility to define operational accounting time periods without restriction to only one calendar.
business event	In PeopleSoft Receivables, defines the processing characteristics for the Receivable Update process for a draft activity.

	In PeopleSoft Sales Incentive Management, an original business transaction or activity that may justify the creation of a PeopleSoft Enterprise Incentive Management event (a sale, for example).
business unit	A corporation or a subset of a corporation that is independent with regard to one or more operational or accounting functions.
buyer	In PeopleSoft eSettlements, an organization (or business unit, as opposed to an individual) that transacts with suppliers (vendors) within the system. A buyer creates payments for purchases that are made in the system.
catalog item	In PeopleSoft Enterprise Learning Management, a specific topic that a learner can study and have tracked. For example, "Introduction to Microsoft Word." A catalog item contains general information about the topic and includes a course code, description, categorization, keywords, and delivery methods. A catalog item can have one or more learning activities.
catalog map	In PeopleSoft Catalog Management, translates values from the catalog source data to the format of the company's catalog.
catalog partner	In PeopleSoft Catalog Management, shares responsibility with the enterprise catalog manager for maintaining catalog content.
categorization	Associates partner offerings with catalog offerings and groups them into enterprise catalog categories.
channel	In PeopleSoft MultiChannel Framework, email, chat, voice (computer telephone integration [CTI]), or a generic event.
ChartField	A field that stores a chart of accounts, resources, and so on, depending on the PeopleSoft application. ChartField values represent individual account numbers, department codes, and so forth.
ChartField balancing	You can require specific ChartFields to match up (balance) on the debit and the credit side of a transaction.
ChartField combination edit	The process of editing journal lines for valid ChartField combinations based on user-defined rules.
ChartKey	One or more fields that uniquely identify each row in a table. Some tables contain only one field as the key, while others require a combination.
checkbook	In PeopleSoft Promotions Management, enables you to view financial data (such as planned, incurred, and actual amounts) that is related to funds and trade promotions.
Class ChartField	A ChartField value that identifies a unique appropriation budget key when you combine it with a fund, department ID, and program code, as well as a budget period. Formerly called <i>sub-classification</i> .
clone	In PeopleCode, to make a unique copy. In contrast, to <i>copy</i> may mean making a new reference to an object, so if the underlying object is changed, both the copy and the original change.
collection	To make a set of documents available for searching in Verity, you must first create at least one collection. A collection is set of directories and files that allow search application users to use the Verity search engine to quickly find and display source documents that match search criteria. A collection is a set of statistics and pointers to the source documents, stored in a proprietary format on a file server. Because a collection can only store information for a single location, PeopleSoft maintains a set of collections (one per language code) for each search index object.

collection rule	In PeopleSoft Receivables, a user-defined rule that defines actions to take for a customer based on both the amount and the number of days past due for outstanding balances.
compensation object	In PeopleSoft Enterprise Incentive Management, a node within a compensation structure. Compensation objects are the building blocks that make up a compensation structure's hierarchical representation.
compensation structure	In PeopleSoft Enterprise Incentive Management, a hierarchical relationship of compensation objects that represents the compensation-related relationship between the objects.
condition	In PeopleSoft Receivables, occurs when there is a change of status for a customer's account, such as reaching a credit limit or exceeding a user-defined balance due.
configuration parameter catalog	Used to configure an external system with PeopleSoft. For example, a configuration parameter catalog might set up configuration and communication parameters for an external server.
configuration plan	In PeopleSoft Enterprise Incentive Management, configuration plans hold allocation information for common variables (not incentive rules) and are attached to a node without a participant. Configuration plans are not processed by transactions.
content reference	Content references are pointers to content registered in the portal registry. These are typically either URLs or iScripts. Content references fall into three categories: target content, templates, and template pagelets.
context	In PeopleCode, determines which buffer fields can be contextually referenced and which is the current row of data on each scroll level when a PeopleCode program is running. In PeopleSoft Enterprise Incentive Management, a mechanism that is used to determine the scope of a processing run. PeopleSoft Enterprise Incentive Management uses three types of context: plan, period, and run-level.
control table	Stores information that controls the processing of an application. This type of processing might be consistent throughout an organization, or it might be used only by portions of the organization for more limited sharing of data.
cost profile	A combination of a receipt cost method, a cost flow, and a deplete cost method. A profile is associated with a cost book and determines how items in that book are valued, as well as how the material movement of the item is valued for the book.
cost row	A cost transaction and amount for a set of ChartFields.
current learning	In PeopleSoft Enterprise Learning Management, a self-service repository for all of a learner's in-progress learning activities and programs.
data acquisition	In PeopleSoft Enterprise Incentive Management, the process during which raw business transactions are acquired from external source systems and fed into the operational data store (ODS).
data elements	Data elements, at their simplest level, define a subset of data and the rules by which to group them. For Workforce Analytics, data elements are rules that tell the system what measures to retrieve about your workforce groups.
dataset	A data grouping that enables role-based filtering and distribution of data. You can limit the range and quantity of data that is displayed for a user by associating dataset rules with user roles. The result of dataset rules is a set of data that is appropriate for the user's roles.

delivery method	<p>In PeopleSoft Enterprise Learning Management, identifies the primary type of delivery method in which a particular learning activity is offered. Also provides default values for the learning activity, such as cost and language. This is primarily used to help learners search the catalog for the type of delivery from which they learn best. Because PeopleSoft Enterprise Learning Management is a blended learning system, it does not enforce the delivery method.</p> <p>In PeopleSoft Supply Chain Management, identifies the method by which goods are shipped to their destinations (such as truck, air, rail, and so on). The delivery method is specified when creating shipment schedules.</p>
delivery method type	In PeopleSoft Enterprise Learning Management, identifies how learning activities can be delivered—for example, through online learning, classroom instruction, seminars, books, and so forth—in an organization. The type determines whether the delivery method includes scheduled components.
directory information tree	In PeopleSoft Directory Interface, the representation of a directory's hierarchical structure.
document sequencing	A flexible method that sequentially numbers the financial transactions (for example, bills, purchase orders, invoices, and payments) in the system for statutory reporting and for tracking commercial transaction activity.
dynamic detail tree	A tree that takes its detail values—dynamic details—directly from a table in the database, rather than from a range of values that are entered by the user.
edit table	A table in the database that has its own record definition, such as the Department table. As fields are entered into a PeopleSoft application, they can be validated against an edit table to ensure data integrity throughout the system.
effective date	A method of dating information in PeopleSoft applications. You can predate information to add historical data to your system, or postdate information in order to enter it before it actually goes into effect. By using effective dates, you don't delete values; you enter a new value with a current effective date.
EIM ledger	Abbreviation for <i>Enterprise Incentive Management ledger</i> . In PeopleSoft Enterprise Incentive Management, an object to handle incremental result gathering within the scope of a participant. The ledger captures a result set with all of the appropriate traces to the data origin and to the processing steps of which it is a result.
elimination set	In PeopleSoft General Ledger, a related group of intercompany accounts that is processed during consolidations.
entry event	In PeopleSoft General Ledger, Receivables, Payables, Purchasing, and Billing, a business process that generates multiple debits and credits resulting from single transactions to produce standard, supplemental accounting entries.
equitization	In PeopleSoft General Ledger, a business process that enables parent companies to calculate the net income of subsidiaries on a monthly basis and adjust that amount to increase the investment amount and equity income amount before performing consolidations.
event	<p>A predefined point either in the Component Processor flow or in the program flow. As each point is encountered, the event activates each component, triggering any PeopleCode program that is associated with that component and that event. Examples of events are FieldChange, SavePreChange, and RowDelete.</p> <p>In PeopleSoft Human Resources, also refers to an incident that affects benefits eligibility.</p>
event propagation process	In PeopleSoft Sales Incentive Management, a process that determines, through logic, the propagation of an original PeopleSoft Enterprise Incentive Management event and creates a derivative (duplicate) of the original event to be processed by other objects.

	Sales Incentive Management uses this mechanism to implement splits, roll-ups, and so on. Event propagation determines who receives the credit.
exception	In PeopleSoft Receivables, an item that either is a deduction or is in dispute.
exclusive pricing	In PeopleSoft Order Management, a type of arbitration plan that is associated with a price rule. Exclusive pricing is used to price sales order transactions.
fact	In PeopleSoft applications, facts are numeric data values from fields from a source database as well as an analytic application. A fact can be anything you want to measure your business by, for example, revenue, actual, budget data, or sales numbers. A fact is stored on a fact table.
forecast item	A logical entity with a unique set of descriptive demand and forecast data that is used as the basis to forecast demand. You create forecast items for a wide range of uses, but they ultimately represent things that you buy, sell, or use in your organization and for which you require a predictable usage.
fund	In PeopleSoft Promotions Management, a budget that can be used to fund promotional activity. There are four funding methods: top down, fixed accrual, rolling accrual, and zero-based accrual.
generic process type	In PeopleSoft Process Scheduler, process types are identified by a generic process type. For example, the generic process type SQR includes all SQR process types, such as SQR process and SQR report.
group	In PeopleSoft Billing and Receivables, a posting entity that comprises one or more transactions (items, deposits, payments, transfers, matches, or write-offs). In PeopleSoft Human Resources Management and Supply Chain Management, any set of records that are associated under a single name or variable to run calculations in PeopleSoft business processes. In PeopleSoft Time and Labor, for example, employees are placed in groups for time reporting purposes.
incentive object	In PeopleSoft Enterprise Incentive Management, the incentive-related objects that define and support the PeopleSoft Enterprise Incentive Management calculation process and results, such as plan templates, plans, results data, user interaction objects, and so on.
incentive rule	In PeopleSoft Sales Incentive Management, the commands that act on transactions and turn them into compensation. A rule is one part in the process of turning a transaction into compensation.
incur	In PeopleSoft Promotions Management, to become liable for a promotional payment. In other words, you owe that amount to a customer for promotional activities.
item	In PeopleSoft Inventory, a tangible commodity that is stored in a business unit (shipped from a warehouse). In PeopleSoft Demand Planning, Inventory Policy Planning, and Supply Planning, a noninventory item that is designated as being used for planning purposes only. It can represent a family or group of inventory items. It can have a planning bill of material (BOM) or planning routing, and it can exist as a component on a planning BOM. A planning item cannot be specified on a production or engineering BOM or routing, and it cannot be used as a component in a production. The quantity on hand will never be maintained.
	In PeopleSoft Receivables, an individual receivable. An item can be an invoice, a credit memo, a debit memo, a write-off, or an adjustment.
KPI	An abbreviation for <i>key performance indicator</i> . A high-level measurement of how well an organization is doing in achieving critical success factors. This defines the data value or calculation upon which an assessment is determined.

LDIF file	Abbreviation for <i>Lightweight Directory Access Protocol (LDAP) Data Interchange Format file</i> . Contains discrepancies between PeopleSoft data and directory data.
learner group	In PeopleSoft Enterprise Learning Management, a group of learners who are linked to the same learning environment. Members of the learner group can share the same attributes, such as the same department or job code. Learner groups are used to control access to and enrollment in learning activities and programs. They are also used to perform group enrollments and mass enrollments in the back office.
learning components	In PeopleSoft Enterprise Learning Management, the foundational building blocks of learning activities. PeopleSoft Enterprise Learning Management supports six basic types of learning components: web-based, session, webcast, test, survey, and assignment. One or more of these learning component types compose a single learning activity.
learning environment	In PeopleSoft Enterprise Learning Management, identifies a set of categories and catalog items that can be made available to learner groups. Also defines the default values that are assigned to the learning activities and programs that are created within a particular learning environment. Learning environments provide a way to partition the catalog so that learners see only those items that are relevant to them.
learning history	In PeopleSoft Enterprise Learning Management, a self-service repository for all of a learner's completed learning activities and programs.
ledger mapping	You use ledger mapping to relate expense data from general ledger accounts to resource objects. Multiple ledger line items can be mapped to one or more resource IDs. You can also use ledger mapping to map dollar amounts (referred to as <i>rates</i>) to business units. You can map the amounts in two different ways: an actual amount that represents actual costs of the accounting period, or a budgeted amount that can be used to calculate the capacity rates as well as budgeted model results. In PeopleSoft Enterprise Warehouse, you can map general ledger accounts to the EW Ledger table.
library section	In PeopleSoft Enterprise Incentive Management, a section that is defined in a plan (or template) and that is available for other plans to share. Changes to a library section are reflected in all plans that use it.
linked section	In PeopleSoft Enterprise Incentive Management, a section that is defined in a plan template but appears in a plan. Changes to linked sections propagate to plans using that section.
linked variable	In PeopleSoft Enterprise Incentive Management, a variable that is defined and maintained in a plan template and that also appears in a plan. Changes to linked variables propagate to plans using that variable.
load	In PeopleSoft Inventory, identifies a group of goods that are shipped together. Load management is a feature of PeopleSoft Inventory that is used to track the weight, the volume, and the destination of a shipment.
local functionality	In PeopleSoft HRMS, the set of information that is available for a specific country. You can access this information when you click the appropriate country flag in the global window, or when you access it by a local country menu.
location	Locations enable you to indicate the different types of addresses—for a company, for example, one address to receive bills, another for shipping, a third for postal deliveries, and a separate street address. Each address has a different location number. The primary location—indicated by a <i>1</i> —is the address you use most often and may be different from the main address.
logistical task	In PeopleSoft Services Procurement, an administrative task that is related to hiring a service provider. Logistical tasks are linked to the service type on the work order so that different types of services can have different logistical tasks. Logistical tasks include both preapproval tasks (such as assigning a new badge or ordering a new

laptop) and postapproval tasks (such as scheduling orientation or setting up the service provider email). The logistical tasks can be mandatory or optional. Mandatory preapproval tasks must be completed before the work order is approved. Mandatory postapproval tasks, on the other hand, must be completed before a work order is released to a service provider.

market template	In PeopleSoft Enterprise Incentive Management, additional functionality that is specific to a given market or industry and is built on top of a product category.
match group	In PeopleSoft Receivables, a group of receivables items and matching offset items. The system creates match groups by using user-defined matching criteria for selected field values.
MCF server	Abbreviation for <i>PeopleSoft MultiChannel Framework server</i> . Comprises the universal queue server and the MCF log server. Both processes are started when <i>MCF Servers</i> is selected in an application server domain configuration.
merchandising activity	In PeopleSoft Promotions Management, a specific discount type that is associated with a trade promotion (such as off-invoice, billback or rebate, or lump-sum payment) that defines the performance that is required to receive the discount. In the industry, you may know this as an offer, a discount, a merchandising event, an event, or a tactic.
meta-SQL	Meta-SQL constructs expand into platform-specific Structured Query Language (SQL) substrings. They are used in functions that pass SQL strings, such as in SQL objects, the SQLExec function, and PeopleSoft Application Engine programs.
metastring	Metastrings are special expressions included in SQL string literals. The metastrings, prefixed with a percent (%) symbol, are included directly in the string literals. They expand at run time into an appropriate substring for the current database platform.
multibook	In PeopleSoft General Ledger, multiple ledgers having multiple-base currencies that are defined for a business unit, with the option to post a single transaction to all base currencies (all ledgers) or to only one of those base currencies (ledgers).
multicurrency	The ability to process transactions in a currency other than the business unit's base currency.
national allowance	In PeopleSoft Promotions Management, a promotion at the corporate level that is funded by nondiscretionary dollars. In the industry, you may know this as a national promotion, a corporate promotion, or a corporate discount.
node-oriented tree	A tree that is based on a detail structure, but the detail values are not used.
pagelet	Each block of content on the home page is called a pagelet. These pagelets display summary information within a small rectangular area on the page. The pagelet provide users with a snapshot of their most relevant PeopleSoft and non-PeopleSoft content.
participant	In PeopleSoft Enterprise Incentive Management, participants are recipients of the incentive compensation calculation process.
participant object	Each participant object may be related to one or more compensation objects. See also <i>compensation object</i> .
partner	A company that supplies products or services that are resold or purchased by the enterprise.
pay cycle	In PeopleSoft Payables, a set of rules that define the criteria by which it should select scheduled payments for payment creation.
pending item	In PeopleSoft Receivables, an individual receivable (such as an invoice, a credit memo, or a write-off) that has been entered in or created by the system, but hasn't been posted.

PeopleCode	PeopleCode is a proprietary language, executed by the PeopleSoft application processor. PeopleCode generates results based upon existing data or user actions. By using business interlink objects, external services are available to all PeopleSoft applications wherever PeopleCode can be executed.
PeopleCode event	An action that a user takes upon an object, usually a record field, that is referenced within a PeopleSoft page.
PeopleSoft Internet Architecture	The fundamental architecture on which PeopleSoft 8 applications are constructed, consisting of a relational database management system (RDBMS), an application server, a web server, and a browser.
performance measurement	In PeopleSoft Enterprise Incentive Management, a variable used to store data (similar to an aggregator, but without a predefined formula) within the scope of an incentive plan. Performance measures are associated with a plan calendar, territory, and participant. Performance measurements are used for quota calculation and reporting.
period context	In PeopleSoft Enterprise Incentive Management, because a participant typically uses the same compensation plan for multiple periods, the period context associates a plan context with a specific calendar period and fiscal year. The period context references the associated plan context, thus forming a chain. Each plan context has a corresponding set of period contexts.
plan	In PeopleSoft Sales Incentive Management, a collection of allocation rules, variables, steps, sections, and incentive rules that instruct the PeopleSoft Enterprise Incentive Management engine in how to process transactions.
plan context	In PeopleSoft Enterprise Incentive Management, correlates a participant with the compensation plan and node to which the participant is assigned, enabling the PeopleSoft Enterprise Incentive Management system to find anything that is associated with the node and that is required to perform compensation processing. Each participant, node, and plan combination represents a unique plan context—if three participants are on a compensation structure, each has a different plan context. Configuration plans are identified by plan contexts and are associated with the participants that refer to them.
plan template	In PeopleSoft Enterprise Incentive Management, the base from which a plan is created. A plan template contains common sections and variables that are inherited by all plans that are created from the template. A template may contain steps and sections that are not visible in the plan definition.
planned learning	In PeopleSoft Enterprise Learning Management, a self-service repository for all of a learner's planned learning activities and programs.
planning instance	In PeopleSoft Supply Planning, a set of data (business units, items, supplies, and demands) constituting the inputs and outputs of a supply plan.
portal registry	In PeopleSoft applications, the portal registry is a tree-like structure in which content references are organized, classified, and registered. It is a central repository that defines both the structure and content of a portal through a hierarchical, tree-like structure of folders useful for organizing and securing content references.
price list	In PeopleSoft Enterprise Pricer, enables you to select products and conditions for which the price list applies to a transaction. During a transaction, the system either determines the product price based on the predefined search hierarchy for the transaction or uses the product's lowest price on any associated, active price lists. This price is used as the basis for any further discounts and surcharges.
price rule	In PeopleSoft Enterprise Pricer, defines the conditions that must be met for adjustments to be applied to the base price. Multiple rules can apply when conditions of each rule are met.

price rule condition	In PeopleSoft Enterprise Pricer, selects the price-by fields, the values for the price-by fields, and the operator that determines how the price-by fields are related to the transaction.
price rule key	In PeopleSoft Enterprise Pricer, defines the fields that are available to define price rule conditions (which are used to match a transaction) on the price rule.
process category	In PeopleSoft Process Scheduler, processes that are grouped for server load balancing and prioritization.
process group	In PeopleSoft Financials, a group of application processes (performed in a defined order) that users can initiate in real time, directly from a transaction entry page.
process definition	Process definitions define each run request.
process instance	A unique number that identifies each process request. This value is automatically incremented and assigned to each requested process when the process is submitted to run.
process job	You can link process definitions into a job request and process each request serially or in parallel. You can also initiate subsequent processes based on the return code from each prior request.
process request	A single run request, such as a Structured Query Report (SQR), a COBOL or Application Engine program, or a Crystal report that you run through PeopleSoft Process Scheduler.
process run control	A PeopleTools variable used to retain PeopleSoft Process Scheduler values needed at runtime for all requests that reference a run control ID. Do not confuse these with application run controls, which may be defined with the same run control ID, but only contain information specific to a given application process request.
product category	In PeopleSoft Enterprise Incentive Management, indicates an application in the Enterprise Incentive Management suite of products. Each transaction in the PeopleSoft Enterprise Incentive Management system is associated with a product category.
programs	In PeopleSoft Enterprise Learning Management, a high-level grouping that guides the learner along a specific learning path through sections of catalog items. PeopleSoft Enterprise Learning Systems provides two types of programs—curricula and certifications.
progress log	In PeopleSoft Services Procurement, tracks deliverable-based projects. This is similar to the time sheet in function and process. The service provider contact uses the progress log to record and submit progress on deliverables. The progress can be logged by the activity that is performed, by the percentage of work that is completed, or by the completion of milestone activities that are defined for the project.
project transaction	In PeopleSoft Project Costing, an individual transaction line that represents a cost, time, budget, or other transaction row.
promotion	In PeopleSoft Promotions Management, a trade promotion, which is typically funded from trade dollars and used by consumer products manufacturers to increase sales volume.
publishing	In PeopleSoft Enterprise Incentive Management, a stage in processing that makes incentive-related results available to participants.
record group	A set of logically and functionally related control tables and views. Record groups help enable TableSet sharing, which eliminates redundant data entry. Record groups ensure that TableSet sharing is applied consistently across all related tables and views.
record input VAT flag	Abbreviation for <i>record input value-added tax flag</i> . Within PeopleSoft Purchasing, Payables, and General Ledger, this flag indicates that you are recording input VAT

on the transaction. This flag, in conjunction with the record output VAT flag, is used to determine the accounting entries created for a transaction and to determine how a transaction is reported on the VAT return. For all cases within Purchasing and Payables where VAT information is tracked on a transaction, this flag is set to Yes. This flag is not used in PeopleSoft Order Management, Billing, or Receivables, where it is assumed that you are always recording only output VAT, or in PeopleSoft Expenses, where it is assumed that you are always recording only input VAT.

record output VAT flag	Abbreviation for <i>record output value-added tax flag</i> . See <i>record input VAT flag</i> .
reference data	In PeopleSoft Sales Incentive Management, system objects that represent the sales organization, such as territories, participants, products, customers, channels, and so on.
reference object	In PeopleSoft Enterprise Incentive Management, this dimension-type object further defines the business. Reference objects can have their own hierarchy (for example, product tree, customer tree, industry tree, and geography tree).
reference transaction	In commitment control, a reference transaction is a source transaction that is referenced by a higher-level (and usually later) source transaction, in order to automatically reverse all or part of the referenced transaction's budget-checked amount. This avoids duplicate postings during the sequential entry of the transaction at different commitment levels. For example, the amount of an encumbrance transaction (such as a purchase order) will, when checked and recorded against a budget, cause the system to concurrently reference and relieve all or part of the amount of a corresponding pre-encumbrance transaction, such as a purchase requisition.
regional sourcing	In PeopleSoft Purchasing, provides the infrastructure to maintain, display, and select an appropriate vendor and vendor pricing structure that is based on a regional sourcing model where the multiple ship to locations are grouped. Sourcing may occur at a level higher than the ship to location.
relationship object	In PeopleSoft Enterprise Incentive Management, these objects further define a compensation structure to resolve transactions by establishing associations between compensation objects and business objects.
remote data source data	Data that is extracted from a separate database and migrated into the local database.
REN server	Abbreviation for <i>real-time event notification server</i> in PeopleSoft MultiChannel Framework.
requester	In PeopleSoft eSettlements, an individual who requests goods or services and whose ID appears on the various procurement pages that reference purchase orders.
role	Describes how people fit into PeopleSoft Workflow. A role is a class of users who perform the same type of work, such as clerks or managers. Your business rules typically specify what user role needs to do an activity.
role user	A PeopleSoft Workflow user. A person's role user ID serves much the same purpose as a user ID does in other parts of the system. PeopleSoft Workflow uses role user IDs to determine how to route worklist items to users (through an email address, for example) and to track the roles that users play in the workflow. Role users do not need PeopleSoft user IDs.
roll up	In a tree, to roll up is to total sums based on the information hierarchy.
run control	A run control is a type of online page that is used to begin a process, such as the batch processing of a payroll run. Run control pages generally start a program that manipulates data.
run control ID	A unique ID to associate each user with his or her own run control table entries.

run-level context	In PeopleSoft Enterprise Incentive Management, associates a particular run (and batch ID) with a period context and plan context. Every plan context that participates in a run has a separate run-level context. Because a run cannot span periods, only one run-level context is associated with each plan context.
search query	You use this set of objects to pass a query string and operators to the search engine. The search index returns a set of matching results with keys to the source documents.
section	In PeopleSoft Enterprise Incentive Management, a collection of incentive rules that operate on transactions of a specific type. Sections enable plans to be segmented to process logical events in different sections.
security event	In commitment control, security events trigger security authorization checking, such as budget entries, transfers, and adjustments; exception overrides and notifications; and inquiries.
serial genealogy	In PeopleSoft Manufacturing, the ability to track the composition of a specific, serial-controlled item.
serial in production	In PeopleSoft Manufacturing, enables the tracing of serial information for manufactured items. This is maintained in the Item Master record.
session	In PeopleSoft Enterprise Learning Management, a single meeting day of an activity (that is, the period of time between start and finish times within a day). The session stores the specific date, location, meeting time, and instructor. Sessions are used for scheduled training.
session template	In PeopleSoft Enterprise Learning Management, enables you to set up common activity characteristics that may be reused while scheduling a PeopleSoft Enterprise Learning Management activity—characteristics such as days of the week, start and end times, facility and room assignments, instructors, and equipment. A session pattern template can be attached to an activity that is being scheduled. Attaching a template to an activity causes all of the default template information to populate the activity session pattern.
setup relationship	In PeopleSoft Enterprise Incentive Management, a relationship object type that associates a configuration plan with any structure node.
share driver expression	In PeopleSoft Business Planning, a named planning method similar to a driver expression, but which you can set up globally for shared use within a single planning application or to be shared between multiple planning applications through PeopleSoft Enterprise Warehouse.
single signon	With single signon, users can, after being authenticated by a PeopleSoft application server, access a second PeopleSoft application server without entering a user ID or password.
source transaction	In commitment control, any transaction generated in a PeopleSoft or third-party application that is integrated with commitment control and which can be checked against commitment control budgets. For example, a pre-encumbrance, encumbrance, expenditure, recognized revenue, or collected revenue transaction.
SpeedChart	A user-defined shorthand key that designates several ChartKeys to be used for voucher entry. Percentages can optionally be related to each ChartKey in a SpeedChart definition.
SpeedType	A code representing a combination of ChartField values. SpeedTypes simplify the entry of ChartFields commonly used together.
staging	A method of consolidating selected partner offerings with the offerings from the enterprise's other partners.

statutory account	Account required by a regulatory authority for recording and reporting financial results. In PeopleSoft, this is equivalent to the Alternate Account (ALTACCT) ChartField.
step	In PeopleSoft Sales Incentive Management, a collection of sections in a plan. Each step corresponds to a step in the job run.
storage level	In PeopleSoft Inventory, identifies the level of a material storage location. Material storage locations are made up of a business unit, a storage area, and a storage level. You can set up to four storage levels.
subcustomer qualifier	A value that groups customers into a division for which you can generate detailed history, aging, events, and profiles.
Summary ChartField	You use summary ChartFields to create summary ledgers that roll up detail amounts based on specific detail values or on selected tree nodes. When detail values are summarized using tree nodes, summary ChartFields must be used in the summary ledger data record to accommodate the maximum length of a node name (20 characters).
summary ledger	An accounting feature used primarily in allocations, inquiries, and PS/nVision reporting to store combined account balances from detail ledgers. Summary ledgers increase speed and efficiency of reporting by eliminating the need to summarize detail ledger balances each time a report is requested. Instead, detail balances are summarized in a background process according to user-specified criteria and stored on summary ledgers. The summary ledgers are then accessed directly for reporting.
summary time period	In PeopleSoft Business Planning, any time period (other than a base time period) that is an aggregate of other time periods, including other summary time periods and base time periods, such as quarter and year total.
summary tree	A tree used to roll up accounts for each type of report in summary ledgers. Summary trees enable you to define trees on trees. In a summary tree, the detail values are really nodes on a detail tree or another summary tree (known as the <i>basis</i> tree). A summary tree structure specifies the details on which the summary trees are to be built.
syndicate	To distribute a production version of the enterprise catalog to partners.
system function	In PeopleSoft Receivables, an activity that defines how the system generates accounting entries for the general ledger.
TableSet	A means of sharing similar sets of values in control tables, where the actual data values are different but the structure of the tables is the same.
TableSet sharing	Shared data that is stored in many tables that are based on the same TableSets. Tables that use TableSet sharing contain the SETID field as an additional key or unique identifier.
target currency	The value of the entry currency or currencies converted to a single currency for budget viewing and inquiry purposes.
template	A template is HTML code associated with a web page. It defines the layout of the page and also where to get HTML for each part of the page. In PeopleSoft, you use templates to build a page by combining HTML from a number of sources. For a PeopleSoft portal, all templates must be registered in the portal registry, and each content reference must be assigned a template.
territory	In PeopleSoft Sales Incentive Management, hierarchical relationships of business objects, including regions, products, customers, industries, and participants.
TimeSpan	A relative period, such as year-to-date or current period, that can be used in various PeopleSoft General Ledger functions and reports when a rolling time frame, rather

	than a specific date, is required. TimeSpans can also be used with flexible formulas in PeopleSoft Projects.
trace usage	In PeopleSoft Manufacturing, enables the control of which components will be traced during the manufacturing process. Serial- and lot-controlled components can be traced. This is maintained in the Item Master record.
transaction allocation	In PeopleSoft Enterprise Incentive Management, the process of identifying the owner of a transaction. When a raw transaction from a batch is allocated to a plan context, the transaction is duplicated in the PeopleSoft Enterprise Incentive Management transaction tables.
transaction state	In PeopleSoft Enterprise Incentive Management, a value assigned by an incentive rule to a transaction. Transaction states enable sections to process only transactions that are at a specific stage in system processing. After being successfully processed, transactions may be promoted to the next transaction state and “picked up” by a different section for further processing.
Translate table	A system edit table that stores codes and translate values for the miscellaneous fields in the database that do not warrant individual edit tables of their own.
tree	The graphical hierarchy in PeopleSoft systems that displays the relationship between all accounting units (for example, corporate divisions, projects, reporting groups, account numbers) and determines roll-up hierarchies.
unclaimed transaction	In PeopleSoft Enterprise Incentive Management, a transaction that is not claimed by a node or participant after the allocation process has completed, usually due to missing or incomplete data. Unclaimed transactions may be manually assigned to the appropriate node or participant by a compensation administrator.
universal navigation header	Every PeopleSoft portal includes the universal navigation header, intended to appear at the top of every page as long as the user is signed on to the portal. In addition to providing access to the standard navigation buttons (like Home, Favorites, and signoff) the universal navigation header can also display a welcome message for each user.
user interaction object	In PeopleSoft Sales Incentive Management, used to define the reporting components and reports that a participant can access in his or her context. All Sales Incentive Management user interface objects and reports are registered as user interaction objects. User interaction objects can be linked to a compensation structure node through a compensation relationship object (individually or as groups).
variable	In PeopleSoft Sales Incentive Management, the intermediate results of calculations. Variables hold the calculation results and are then inputs to other calculations. Variables can be plan variables that persist beyond the run of an engine or local variables that exist only during the processing of a section.
VAT exception	Abbreviation for <i>value-added tax exception</i> . A temporary or permanent exemption from paying VAT that is granted to an organization. This terms refers to both VAT exoneration and VAT suspension.
VAT exempt	Abbreviation for <i>value-added tax exempt</i> . Describes goods and services that are not subject to VAT. Organizations that supply exempt goods or services are unable to recover the related input VAT. This is also referred to as exempt without recovery.
VAT exoneration	Abbreviation for <i>value-added tax exoneration</i> . An organization that has been granted a permanent exemption from paying VAT due to the nature of that organization.
VAT suspension	Abbreviation for <i>value-added tax suspension</i> . An organization that has been granted a temporary exemption from paying VAT.
warehouse	A PeopleSoft data warehouse that consists of predefined ETL maps, data warehouse tools, and DataMart definitions.

work order	In PeopleSoft Services Procurement, enables an enterprise to create resource-based and deliverable-based transactions that specify the basic terms and conditions for hiring a specific service provider. When a service provider is hired, the service provider logs time or progress against the work order.
worksheet	A way of presenting data through a PeopleSoft Business Analysis Modeler interface that enables users to do in-depth analysis using pivoting tables, charts, notes, and history information.
worklist	The automated to-do list that PeopleSoft Workflow creates. From the worklist, you can directly access the pages you need to perform the next action, and then return to the worklist for another item.
XML schema	An XML definition that standardizes the representation of application messages, component interfaces, or business interlinks.
yield by operation	In PeopleSoft Manufacturing, the ability to plan the loss of a manufactured item on an operation-by-operation basis.
zero-rated VAT	Abbreviation for <i>zero-rated value-added tax</i> . A VAT transaction with a VAT code that has a tax percent of zero. Used to track taxable VAT activity where no actual VAT amount is charged. Organizations that supply zero-rated goods and services can still recover the related input VAT. This is also referred to as exempt with recovery.

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