

# Precise Insight™

## User Guide

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# Precise™ Insight™ User Guide

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# Interpreting the displayed data

This section includes the following topics:

- [About Tier entities and metrics](#)

## About Tier entities and metrics

With Insight, you can examine the performance of various business applications and their accompanying components and Tiers. For each Tier, the Tier area provides a slightly different performance perspective which reflects the differences between the Tiers. For each Tier, the graphs in the Tier area compare the performance of entities that are related to the Tier.

When you examine the response time, each graph breaks the response time down into the various Tier states to help identify the nature of the problem. This breakdown is also Tier-dependent.

## About entities for OS

OS displays information on the following entities:

- [Server identifiers](#)
- [Process identifiers](#)
- [Citrix identifiers](#)

## About server identifiers

For OS, the Tier area displays the following information for each server:

<b>Server</b>	The name of the server.
<b>Server Type</b>	The name of the operating system, number of CPUs, and number of bits (32 or 64).
<b>Server Load</b>	The average number of processes in the CPU queue during sampling.
<b>CPU</b>	The percentage of total used CPU time.
<b>CPU Times (Summed)</b>	The summed time of CPU usage in the following format: HH:MM:SS.
<b>CPU</b>	The percentage of time the server used the CPU in User mode.
<b>User CPU Summed</b>	The summed time the server used the CPU in User mode.
<b>System CPU</b>	The percentage of time the server used the CPU in Kernel mode. On some platforms, Kernel mode is also known as System or Protected mode.
<b>System CPU Summed</b>	The summed time the server used the CPU in Kernel mode. On some platforms, Kernel mode is also known as System or Protected mode.
<b>Wait I/O CPU</b>	The percentage of time the CPU was idle, but processes waited for I/O operations to complete.
<b>Wait I/O CPU Summed</b>	The summed time the CPU was idle, but processes waited for I/O operations to complete.
<b>Other CPU</b>	The percentage of time the CPU was in other miscellaneous states. <b>NOTE:</b> This counter may have non-zero values only on HP-UX, LINUX, and other CPU Summed platforms.
<b>Other CPU Summed</b>	The summed time the CPU was in other miscellaneous states. <b>NOTE:</b> This counter may have non-zero values only on HP-UX, LINUX, and other CPU Summed platforms.
<b>Page Faults</b>	Minor and major page faults.

<b>Page Faults/sec</b>	The rate of minor and major page faults per second.
<b>Physical Memory (Avg)</b>	The average physical memory in use.
<b>Physical Memory Utilization</b>	The percentage of server physical memory in use.
<b>Virtual Memory (Avg)</b>	The average virtual memory in use.
<b>Virtual Memory Utilization</b>	The percentage of server virtual memory in use.
<b>Processes Executed</b>	The number of new processes with the same identifiers.
<b>Concurrent Processes (Avg)</b>	The average number of processes on the server.
<b>Context Switches/sec</b>	The rate of switches for the server between user and kernel mode.
<b>I/O Bytes/sec</b>	The rate of I/O read and I/O write in bytes per second.
<b>I/O Bytes</b>	The I/O read and I/O write in bytes.

The Insight Savvy for OS has the capability to compare server's resource utilization by logical CPUs. Insight Savvy for OS enumerates in each time slice the list of logical CPUs that the server is working on and samples several key metrics per CPU.

The following table shows the available metrics.

<b>CPU name/ID</b>	This is the name or ID that the system assigns to the logical CPU.
<b>CPU Times (Summed)</b>	The summed time of CPU usage in the following format: HH:MM:SS.
<b>CPU</b>	The percentage of total used CPU time.
<b>System CPU</b>	The percentage of time the server used the CPU in Kernel mode. On some platforms, Kernel mode is also known as System or Protected mode.
<b>User CPU</b>	The percentage of time the server used the CPU in User mode.
<b>Wait I/O CPU</b>	The percentage of time the CPU was idle but processes waited for I/O operations to complete.

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**NOTE** The term logical CPU is platform specific and refers to the logical representation of a processor by the OS to the running processes. On some platforms it may relate to several physical processors, several processor cores, or part of one physical processor.

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## About process identifiers

For OS, the Tier area displays the following information for each process:

<b>Program</b>	The name of the process.
<b>Commands</b>	Full command and arguments of the executed program.
<b>Process IDs</b>	PID of the process.  <b>NOTE:</b> to enable collection of Process IDs, set the Include Process ID Details option in AdminPoint. Open the Warehouse Processes screen, and then open the Operating System Load Parameters dialog. The Process IDs are stored in the PMDB o a time slice aggregation level only.
<b>CPU</b>	The percentage of total used CPU time.
<b>CPU Times (Summed)</b>	The summed time of CPU usage in the following format: HH:MM:SS.
<b>User CPU</b>	The percentage of time the process used the CPU in User mode.
<b>User CPU Summed</b>	The summed time the process used the CPU in User mode.
<b>System CPU</b>	The percentage of time the process used the CPU in Kernel mode. On some platforms, Kernel mode is also known as System or Protected mode.
<b>System CPU Summed</b>	The summed time the process used the CPU in Kernel mode. On some platforms, Kernel mode is also known as System or Protected mode.
<b>Wait I/O CPU</b>	The percentage of time the CPU was idle, but the process waited for I/O operations to complete.
<b>Wait I/O CPU Summed</b>	The summed time the CPU was idle but the process waited for I/O operations to complete.

<b>Other CPU</b>	The percentage of time the CPU was in other miscellaneous states. <b>NOTE:</b> This counter may have non-zero values only on HP-UX, Linux, and other CPU Summed platforms.
<b>Other CPU Summed</b>	The summed time the CPU was in other miscellaneous states. <b>NOTE:</b> This counter may have non-zero values only on HP-UX, Linux, and other CPU Summed platforms.
<b>Page Faults</b>	Minor and major page faults.
<b>Page Faults/sec</b>	The rate of minor and major page faults.
<b>Physical Memory (Avg)</b>	The average physical memory consumption used by the process.
<b>Virtual Memory (Avg)</b>	The average virtual memory used by the process.
<b>Processes Executed</b>	The number of new processes on the server with the same identifiers.
<b>Concurrent Processes (Avg)</b>	The average number of processes on the server with the same characteristics.
<b>Concurrent Threads (Avg)</b>	The average number of threads for this process.
<b>Context Switches/sec</b>	The rate of switches for the process between user and kernel mode.
<b>I/O Bytes/sec</b>	The rate of I/O read and I/O write in bytes per second.
<b>I/O Bytes</b>	The I/O read and I/O write in bytes.

## About Citrix identifiers

Citrix-related statistical counters are collected by the Insight Savvy for OS by using the public Citrix API. Insight uses this information to correlate Citrix metrics with the processes underlying each Citrix session.

The following information is displayed for each process that has been initiated by a Citrix session on the monitored server:

<b>Citrix Applications</b>	The name of the Citrix Published Applications that initiated the session, along with their corresponding resource usage. It is possible to drill down into all Published Applications processes.
<b>Citrix Users</b>	The user name used to logon in to the Citrix server.
<b>Citrix client IPs</b>	The remote client's IP address. This information can be manually correlated with the client IP address, as displayed by Insight Network savvy.
<b>Citrix Locations</b>	The Citrix locations. Citrix locations are not collected by the Insight Savvy for OS. They are automatically generated by Insight FocalPoint if the locations were defined.
<b>Citrix Clients</b>	The remote client's machine name.
<b>Citrix Client Latency (Avg)</b>	The average client latency (in seconds) for each Citrix agent. Baseline information for this counter is not available.

## About entities of the Tuxedo Tier

For the Tuxedo Tier, Insight measures the response time of the following entities:

- Tuxedo services
- Tuxedo server processes
- Tuxedo domains
- Tuxedo servers
- Tuxedo users
- Tuxedo client machines identified by the IP addresses

The response time is broken down into the following components:

<b>Tuxedo queue time</b>	The queue time of service requests before process. Queue time is measured only for server processes and is not reported per service.
<b>Tuxedo work time</b>	The processing time of the original service.
<b>Tuxedo execution time</b>	The processing time of services called by the original services. The execution time is not available for entities other than Tuxedo services and Tuxedo server processes. For all other entities, the execution time if included in the work time.

Network time is the round-trip network time between the client and the server. It is only available on the Overview tab and in the Tier area for the Network Tier. To measure network time, you must enable the network-monitoring option.

For additional information, see the *Precise Installation Guide*.

## About entities of the WebSphere MQ Tier

For the WebSphere MQ Tier, Insight measures the response time of the following entities:

<b>WebSphere MQ Queue Managers</b>	The name of the Queue Manager.
<b>WebSphere MQ Queue</b>	The name of the queue.
<b>WebSphere MQ Message Types</b>	The type of the MQ message, such as Request, Reply, Datagram, or Report.
<b>WebSphere MQ Messages</b>	The ID of the message.
<b>WebSphere MQ Header Fields</b>	The MQ header fields, containing Put and Get options.
<b>WebSphere MQ Message Bodies</b>	The message content.
<b>WebSphere MQ Reader Applications</b>	The get application name.
<b>WebSphere MQ Writer Applications</b>	The put application name.
<b>WebSphere MQ Servers</b>	The machine on which the Queue Manager is installed.
<b>WebSphere MQ Users</b>	The put user name.

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**NOTE** To collect detailed data (message ID) or extended data (message ID, header fields, and message body), edit the parameters of the MQ process in AdminPoint by setting the required collection mode.

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For additional information, see the *Precise Administration Guide*.

The response time is broken down into the following components:

<b>MQ queue time</b>	The time a message spent in a queue between the Put and Get calls.
<b>MQ work time</b>	The time the application spent processing a message from the Get to Put calls.

Network time is the round-trip network time between the client and the server. It is only available on the Overview tab and in the Tier area for the Network Tier. To measure network time, you must enable the network-monitoring option.

For additional information, see the *Precise Installation Guide*.

## About entities of the Oracle Applications Tier

For the Oracle Applications Tier, Insight measures the response time of the following entities:

- Oracle Applications forms
- Oracle Applications users
- Oracle Applications applications
- Oracle Applications servers
- Oracle Applications client machine, identified by the IP address
- Oracle Applications instances, identified by the Form server listener

The response time includes the processing time of Oracle Applications client requests, such as application logic and database access.

Network time is the round-trip network time between the client and the application server. Network time and packets are not available for Oracle Applications instances, which are configured to work in Forms Listener Servlet mode.



## About entities of the Other Tier

The entities displayed for the Other Tier depend on the Other Tier type (a standard regular Other Tier, or Citrix type) as defined in the Application dialog box in AdminPoint.

For the standard regular Other Tier, Insight measures the response time of the following entities:

- Client IPs
- Server IPs
- Server
- Locations
- Server (Grouped)

The response time includes the server work time, which is the processing time of the original service.

Network time is the round-trip network time between the client and the server. It is only available on the Overview tab and in the Tier area for the Network Tier.

The statistical counters Network Bytes in MegaBytes [M] and TCP Packets in Kilo packets [K] are available. For the Citrix type Other Tier, Insight measures the response time of the following entities:

- Client IPs
- Server
- Locations
- Server (Grouped)

For the Citrix type Other Tier, Insight also measures CPU utilization and average Citrix client latency for the following entities:

- Citrix Applications
- Citrix Users
- Citrix Clients
- Client IPs
- Server

## About entities of the Add-on Tier

A user or third-party vendor can collect performance data from any Tier. The Tier does not need to be supported natively by any of the Precise family of products. That means the user or third-party vendor can define an Tier: the Tier name, its entities and counters, and develop the Collector that collects this data. The Insight user interface functions the same as for all other Precise Tiers.

For an Add-on Tier, Insight can measure the following metrics for Add-on Tier activities:

- Response Time. Describes the working time of the application itself to complete an activity.
- Statistics. Displays various statistical metrics relating to the activity (such as: message size, number of users).
- Executions. Represents the number of times an activity occurred in one time slice (every 15 minutes).

The response time can be broken down into various components, such as:

<b>Work time</b>	The processing time for the application.
<b>Queue time</b>	The queue time of application requests for processing.
<b>Database time</b>	The processing time spent in the database.
<b>Client time</b>	The total time the client spent during the execution.

Insight displays the metrics for the Add-on Tier as Top *n* graphs grouped by the various entities (attributes). The Add-On Tier Collector reports the metrics for each activity. For example, if each Add-on Tier activity contains information about a Transaction name, User name and Server, then Insight will display Top Transactions, Top Users, and Top Server graphs.

For additional information, see the *Precise Insight SDK User's Guide*.

## About Network-related entities

When Network is selected, the Tier area shows summary information for all Tiers in your application that are installed and integrated with the Insight Savvy for Network.

The summary information includes the following data:

<b>Network identifiers</b>	Tiers Client IPs Instances Servers Server IPs Locations
<b>Statistical counters</b>	Network Time Network Bytes TCP Packets Executions

<b>abandonment rate</b>	In Web, a counter that keeps track of the percentage of users that abandon the loading of the Web page before it completes downloading.
<b>action</b>	An operation that Alerts FocalPoint automatically performs when detecting a warning or critical status for a specific metric. According to the defined action, Alerts FocalPoint opens a message box, sends an email or SNMP trap, or executes a program.
<b>action item (manual)</b>	Some installation steps cannot be executed automatically by Precise Installer. The administrator is required to execute them manually. Action Items are presented (when necessary) at end of installation or product update.
<b>AdminPoint</b>	The central administration console of Precise that facilitates the maintenance, configuration, and management of all installed Precise components, such as monitoring the status of all Precise agents and PMDB processes, getting license information, starting and stopping the agents, getting log data on agents and events, changing PMDB settings, and installing patches. See also <a href="#">PMDB</a> . See also <a href="#">agent</a> .
<b>advice</b>	In Oracle, an algorithm that is designed to recommend on gathering statistics, creating new indexes, change existing indexes, and add or delete hints to make Oracle's Optimizer choose a better access path and make the statement perform better. Can be activated from any DML (Data Manipulation Language) statement.
<b>agent</b>	A program that runs on a server machine to collect, process, or communicate performance information. The Precise installation consists of multiple agents.
<b>alert</b>	The state of an Alerts metric that has reached a near-critical or critical status. An alert is issued by Alerts, triggering an action and informing of a problem that has occurred or is likely to occur within the area sampled by the specific metric. See also <a href="#">action</a> .
<b>Alerts</b>	These product provide alerts to problematic conditions before they turn into performance problems, based on predefined metrics and thresholds. Alerts can automatically perform an action, such as displaying a pop-up message, sending an email message or SNMP trap, or running a program.
<b>Alerts FocalPoint</b>	An agent that receives data from the InformPoint agents, stores it, and performs any action that has been user-defined for that specific alert, such as displaying a pop-up message, sending an email message or SNMP trap, or running a program. See also <a href="#">InformPoint</a> .
<b>alert type</b>	In Alerts, the status of all metrics belonging to a metric group or a monitored instance, indicating the current performance level through colors. See also <a href="#">alert</a> . See also <a href="#">metric</a> .
<b>application server metric</b>	In J2EE, a metrics that is provided by the application server or by customer code. This can include metrics published by the Java Management Extension (JMX) APIs or vendor-specific APIs, such as IBM's Performance Management Interface (PMI).
<b>AppTier</b>	The abbreviation for an application tier in a Precise environment. An AppTier contains one or more instances of the same technology and purpose. Application tiers do not necessarily correspond to distinct physical servers: in many cases, the tiers are logical, with one server running multiple AppTiers or one AppTier spans a cluster of servers. A Precise environment may contain multiple AppTiers on the same technology. For example, you may group J2EE instances (JVMs) into a J2EE Presentation AppTier and a J2EE Business Logic AppTier. Segmenting application service time into the contribution of individual application tiers is helpful in identifying the source of performance problems. Analyzing the performance and behavior of each tier separately is crucial for isolating the root causes of performance problems.
<b>cabinet</b>	In Oracle, SQL Server, DB2, and Sybase, the highest logical level in the SQL workspace hierarchy. A cabinet contains folders and, within folders, statements.

<b>call path</b>	A subset of a stack trace including only those methods that have been instrumented.
<b>client cache</b>	In Web, a counter that keeps track of the percentage of requests taken from the client cache (http status 304).
<b>client-side collection</b>	See <a href="#">Web client browser-side</a> .
<b>cluster</b>	A group of servers or instances that are configured to be treated as a single entity. In Oracle, all Oracle instances of the same Oracle database (RAC configuration) are treated as a cluster and presented in the Precise for Oracle UI as a Database. In J2EE, a group of JVMs that serve the same application can be defined as Cluster (even if they are not defined as a cluster in the application server configuration). All JVMs of the same cluster share the same configuration.
<b>collapsed access plan</b>	In SQL Server and Sybase, the access plan of a unique group of statements or batches that belong to the same collapsed statement or batch but have different access plans. This can differ due to the constants in the text of the original (not collapsed) statements. See also <a href="#">explained statement</a> . See also <a href="#">collapsed statement</a> .
<b>collapsed statement</b>	In Oracle, SQL Server, Sybase, and DB2, a statement whose constants are replaced with parameters. Each collapsed statement can have several access plans, according to the occurrences of its statements. See also <a href="#">collapsed access plan</a> .
<b>Collector</b>	The program that runs on the monitored server to collect performance information. Some technologies allow a single Collector (agent) to serve multiple instances running on the same server. Other technologies require a dedicated Collector per monitored instance. In most cases, it must be installed on the monitored server. Collectors for SAP, SQL Server, and Sybase may reside on a remote server. See also <a href="#">agent</a> .
<b>collector slice size</b>	In J2EE, the smallest unit of data presentation and storage. It can be configured as 30 seconds or five minutes. If SmartLink is configured, relevant Web and Microsoft .NET Collectors will report to SmartLink using the same collector slice size. Regardless of the defined collector slice size, the most granular slice size presented on both the Precise for Web UI and the Precise for Microsoft .NET UI will be 15 minute intervals.
<b>completion rate</b>	In Web, a counter that keeps track of the percentage of users that completed the loading of a Web page.
<b>count</b>	The number of occurrences observed during a measurement interval.
<b>CPU time</b>	The average amount of time consumed by the operating system actively processing instructions on behalf of a running activity.
<b>critical status</b>	In Alerts, the status represented by a red bullet indicating that the value of the sampled metric has exceeded the near-critical and critical threshold values. See also <a href="#">metric</a> .
<b>Cross-AppTiers</b>	In Insight, Report Manager, and Alerts, a perspective that provides high-level information about the performance of all AppTiers in an environment, including operating system data. It provides a holistic view of the entire environment and helps understand how the AppTiers interact. See also <a href="#">AppTier</a> .
<b>current data</b>	In SmartLink, the end-to-end activity, detected by Precise over the last five minutes, including activities that are still in progress. In all databases products, a workspace that presents Current Sessions and the SQL statements that were executed including statements that are still in progress.
<b>custom</b>	Represents invocations of a type not specifically defined. See also <a href="#">work time</a> .
<b>customized metric</b>	In Alerts, a user-defined metric that measures site-specific parameters.
<b>drilldown</b>	Within Precise products and Insight SmartLink, the filtering of analyzed data by clicking a specific entity. Then, additional information about the selected entity is presented, plus a breakdown of its activity by another entity. For example, drill down on a transaction and get an overtime graph of the selected transaction, plus a list of top users that executed the selected transaction.
<b>entry point</b>	Usually a top-level HTTP or EJB request. An entry point can originate when a user clicks in a browser or an E-commerce server invokes a remote EJB. J2EE makes a distinction between service request invocations and other invocations. The first HTTP or EJB invocation within a call path is designated as an entry point.

<b>environment</b>	<p>The highest Precise logical group. It may contain multiple AppTiers of various technologies that serve an application together. For example, a Payroll Production environment may contain all Web servers, application servers, transaction managers, databases, and servers that serve this application. Alternatively, it may contain any set of instances that form together an administrative group. Since Precise version 8.5, an instance can belong to more than one environment. Let's say a single Oracle database serves two different applications plus the DBA wants to associate this database with a group of other databases under his responsibility regardless of served applications. In this case the Oracle database will be associated to three different Precise environments.</p> <p>See also <a href="#">AppTier</a>.</p> <p>See also <a href="#">instance</a>.</p>
<b>ERP Extension</b>	<p>In Oracle, DB2, and SQL Server, an extension to the Collector that provides detailed information on the activities and resource consumption of packaged application components. It correlates the database information, and the packaged application information and lets you see users, transactions, reports, and other elements of ERP applications, such as Oracle Applications, SAP, PeopleSoft, and Siebel.</p>
<b>event</b>	<p>In Alerts, the occurrence of a sampling or progress. A sampling occurrence occurs every time a metric samples. A progress occurrence occurs when a metric's progress status is changed or when the investigated status reaches the end of the given investigation time. In AdminPoint, all occurrences reported by Precise agents, including informational events, warnings, and errors related to one of the agents. All events are shown in the Events view.</p> <p>See also <a href="#">metric</a>.</p> <p>See also <a href="#">progress</a>.</p>
<b>executions</b>	<p>In Oracle, SQL Server, DB2, and Sybase, the number of times a SQL statement was executed during the selected time frame. In SmartLink and SAP, the number of times a transaction was executed during the selected time frame.</p>
<b>explained statement</b>	<p>In Oracle, SQL Server, DB2, and Sybase, a statement whose access path (chosen by the RDBMS Optimizer) is clarified and translated into a visual display. Explained results include information on the objects referenced by the statement and the operations performed on these objects.</p>
<b>extended collection</b>	<p>In Oracle, a function that proactively specifies a future period during which Oracle activity data is collected and organized for subsequent analysis. Extended collections are an easy means to view collected information, assess application resource consumption, and identify bottlenecks that are inhibiting application performance and end-user productivity.</p>
<b>Federated Precise</b>	<p>Federated Precise is a version of Precise (starting with version 8.5) that can manage multiple Precise installations within unified StartPoint and AdminPoint screens, displaying and managing all environments, instances, and installations.</p>
<b>findings</b>	<p>A ranked list of top performance problems in the selected context. They are presented in Oracle, SQL Server, .NET, and J2EE. Each finding provides: a short explanation of the problem, detailed background information, and most important: one or more links to further investigate the problem and possibly get more granular findings on the selected context.</p>
<b>first byte time</b>	<p>In Web, a counter that keeps track of the time that it takes from the moment a new Web page is called until the first byte arrives back from the Web server.</p>
<b>FocalPoint</b>	<p>An agent that communicates with the Listeners installed on the monitored servers, receives data from the Collectors, periodically processes and stores this data in the PMDB, and serves UI requests.</p>
<b>folder</b>	<p>In SQL Server, Oracle, DB2, and Sybase, the intermediate logical level in the SQL workspace hierarchy. Folders are grouped into cabinets and contain SQL statements.</p> <p>See also <a href="#">cabinet</a>.</p>
<b>Framework Installer</b>	<p>The application that facilitates the installation of Precise framework components. It can be invoked from the installation DVD to install a new Precise deployment. It can also be invoked from an existing Precise deployment to install an additional framework node and attach it to the originating Precise deployment.</p> <p>See also <a href="#">Framework node</a>.</p>
<b>Framework node</b>	<p>A set of FocalPoint agents that are installed together and manages a set of monitored instances. The performance data of these instances will be loaded into a dedicated PMDB. A single Precise deployment may contain multiple framework nodes (using a separate PMDB for each node). An environment cannot span over multiple framework nodes.</p>

<b>garbage collection</b>	An automatic process in the Java runtime environment that periodically reclaims memory used by objects that are no longer referenced. The process can impact an application's performance while memory is being reclaimed. Java programmers may initiate garbage collection explicitly.
<b>group</b>	In Web, the identifier that is used to group other identifiers, such as sites or URLs.
<b>hint</b>	In Oracle, an instruction directed at the Oracle Optimizer that includes considerations for an execution plan. The Oracle Optimizer will build an execution plan based on the hint, ignoring its own set of considerations.
<b>hour group</b>	A unit that reflects the type and level of activity within the system at different times. By defining the times of the day that are peak and off-peak, or day and night, the performance analysis can be focused on those particular times of the day. If, for example, most performance problems occur within nighttime and weekend batches, it can be useful to focus only on them.
<b>InformPoint</b>	In Alerts, an agent that retrieves performance data from all installed Precise products, analyzes it, and sends an alert to the Alerts FocalPoint when the predefined thresholds are exceeded. See also <a href="#">agent</a> .
<b>Insight</b>	The Precise product family that facilitates the process of monitoring and correlating system performance. It consists of Insight. See also <a href="#">Report Manager</a> . See also <a href="#">FocalPoint</a> .
<b>Insight FocalPoint</b>	An agent that receives performance information from Insight Savvies, which monitor the environment. Insight FocalPoint then correlates, processes, and stores this information in a centralized location. The Insight performance history is stored in the PMDB. See also <a href="#">Savvy</a> . See also <a href="#">PMDB</a> .
<b>instance</b>	A monitored object of a specific technology. The following list specifies what constitutes an instance for the various supported technologies: J2EE - a Java Virtual Machine (JVM - a logical name set by the user), Microsoft .NET - a Common Language Runtime (CLR - a logical name set by the user), Oracle Applications - an Oracle Applications Form server, Oracle - an Oracle instance, SAP - a SAP system, SQL Server - an SQL instance, Sybase - a Sybase instance, Tuxedo - a Tuxedo domain, Web - a Web server, WebSphere MQ - an IBM WebSphere Queue Manager, DB2 - a DB2 non-partitioned database or a DB2 database partition. During installation, the instance is associated with one AppTier and environment. An Instance can be moved to a different environment or associated with multiple environments without re-installation nor losing historical data. See also <a href="#">environment</a> .
<b>instance statistics</b>	See <a href="#">performance counter</a> .
<b>instance/database changes</b>	In SQL Server and Oracle, the part of the Collect Schema Changes process that captures instance definition changes and database option changes and saves them in the PMDB.
<b>instrumentation</b>	The process of inserting fault-tolerant recording hooks in Java byte code, .NET MSIL, HTML pages, or other monitored components, resulting in the capture of performance metrics. In J2EE, a mechanism that enables collecting performance information when an application is executed. The process involves inserting special fault-tolerant recording hooks into application class objects. In WEB, the insertion of recording hooks into HTML pages can either be in memory (Dynamic Instrumentation) or file-based (Static Instrumentation).
<b>instrumentation context</b>	See <a href="#">invocation context</a> .
<b>internal invocation</b>	The process of invoking a request from an HTTP request (Servlet or JSP) or an EJB. J2EE displays an internal invocation like any other invocation.
<b>invocation</b>	An execution of a J2EE entity (a Servlet, EJB, SQL Statement, method, and so on). When mentioned in plural (Invocations), means the amount of times that the entity was executed.
<b>invocation context</b>	The context within which a method is invoked. For example, if Method A is invoked both from Method B and from Method C, there will be two different invocation contexts for the performance metrics collected for Method A, one for when it is invoked from Method B and one for when it is invoked from Method C. See also <a href="#">call path</a> and <a href="#">instrumentation context</a> .
<b>JRE (Java Runtime Environment)</b>	As the runtime part of the Java software, the combination of the components that enable the execution of a Java program: a Java virtual machine, the core class libraries, and the files that form the Java platform.

<b>JSP (Java Server Page)</b>	An HTML page with special tags for Java scripting. An application server processes the tags and generates a Servlet.
<b>JVM (Java Virtual Machine)</b>	An instance of a JRE that executes Java programs. A server-side Java application server is itself a Java program that runs inside a JVM. Servlets, JSPs and EJBs are Java programs (applications) that run within the application server's JVM. J2EE monitors the JVM running the application server and the server-side Java applications within the application server.
<b>JVM Heap Memory key metric</b>	The amount of real computer memory that is allocated to the JVM for executing Java programs.  In Alerts, a parameter that monitors a very important performance aspect. The status of the Oracle instance (up/down), for example, is crucial for system performance. If the instance is down, this is the first problem that needs to be solved. Marking a metric as key metric ensures that a critical alert raised for this metric receives top priority by the person that is responsible to handle alerts at any time. It can also help determine which alert to handle first in case of multiple alerts. In Alerts, key metrics are always displayed at the top of a metric table when it is sorted by alerts so that they get immediate attention.
<b>Listener</b>	The agent that facilitates the communication between the various Precise agents across different servers must be installed on every server where Collectors or FocalPoint agents are installed. The Listener allows communication with all other agents installed on the monitored server, while only the Precise Listener port is known by other servers.
<b>login name</b>	In SQL Server and Sybase, the session identifier that represents the credential used to connect to the database. When an ERP extension is installed, the user name of the packaged application's client overrides the login name. For example, when SAP extension is installed, the SAP user name overrides the login name.
<b>machine</b>	A session identifier. A machine as sampled, for example, by the SQL Server Collector is the identification of the machine where the client process executes. Machine is also sampled by Oracle, DB2 and Sybase. In Insight terminology Machine is called Client machine.
<b>Main framework node</b>	A main framework node is the single point for login and also serves as the Precise FocalPoint for the entire deployment.
<b>major collection count</b>	Number of estimated major garbage collection events that occurred during the last J2EE collector slice. A major garbage collection can stop the application while JVM heap memory is being reclaimed. See also <a href="#">garbage collection</a> .
<b>major garbage collection time</b>	Percentage of time spent by the JVM executing major garbage collection events during the displayed interval. See also <a href="#">garbage collection</a> .
<b>MBean</b>	A Java object that represents a manageable resource. In J2EE, MBeans, or Managed Beans, are used for application server metrics.
<b>memory logger interval</b>	The interval at which the J2EE Collector gathers JVM heap memory data. All snapshots of the memory logger's data collected according to the memory logger interval are summarized with counters in the current aggregation interval. The memory logger interval's time span is typically a small fraction of the aggregation interval.
<b>metric</b>	In Alerts, a query that helps measure performance in the environment. Three types of metrics are available: System metrics relate to the internal resources, operations, and objects of the monitored infrastructure; application metrics reflect the way the applications perform; user-defined metrics can be customized to specifically relate to a site. When a metric's value exceeds one of the defined thresholds, its status changes to near-critical (yellow bullet) or critical (red bullet). See also <a href="#">key metric</a> .
<b>metric set</b>	In Alerts, a unit that groups metrics that measure related performance aspects. The following metric sets exist:  Status: includes metrics that alert to functional problems related to the instance. Performance: includes metrics that alert to performance problems related to the instance. Load: includes metrics that alert to instance-related load problems that may later cause errors or crashes. Service: includes metrics that alert to instance-related SLA breaches. The metrics in this set are sampled by Insight. Performance Trending: includes metrics that alert to potential future performance problems. The metrics in this set are sampled by Report Manager.

	<p>Load Trending: includes metrics that alert to potential future load problems. The metrics in this set are sampled by Report Manager.</p> <p>Customized: includes user-defined metrics.</p> <p>Precise Status: includes metrics that alert to the near-critical or critical status of the installed Precise environment.</p>
<b>module</b>	A session identifier. In Oracle it contains the value of MODULE column in V\$SESSION table. In DB2 it contains the command name of non-SQL statements or the package name for SQL statements.
<b>near-critical status</b>	In Alerts, a status indicating that the value of the sampled metric has exceeded the defined near-critical threshold. A near-critical status is indicated by a yellow bullet.
<b>network time</b>	In Web, a counter that keeps track of the time spent on network activity from the server side perspective. This includes the time to read the request from the network and the network time to send the response back to the client.
<b>node</b>	<p>See <a href="#">Framework node</a>.</p> <p>Note: when creating a new installation from DVD, it would be called "Framework." In the UI screens (columns in tables, choosing a system for a new environment etc), we would call them "Nodes." For example: choose a node for the new environment.</p> <p>When adding a new system within AdminPoint, it would be called a "Framework node".</p>
<b>packaged application</b>	<p>An application that is created and/or maintained by a third party and is not custom-built to one's specific needs. The following packaged applications have special treatment by Precise: SAP, Oracle Applications, PeopleSoft, and Siebel. They are harder to modify because the application code is either not available or hard to understand.</p> <p>See also <a href="#">ERP Extension</a>.</p>
<b>page size</b>	In Web, a counter that keeps track of the amount of data loaded from the server to display the page.
<b>page views</b>	In Web, a counter that keeps track of the number of Web pages viewed at a specific Web site during a selected time period.
<b>parent metric</b>	<p>In Alerts, a joining of several child metrics. Each time a parent metric samples, it gathers data from a set of child metrics and presents it as a single metric query. The individual child metric values are displayed on the Thresholds tab of the Properties dialog box in Alerts.</p> <p>See also <a href="#">submetric</a>.</p>
<b>performance counter</b>	In SQL Server, a Windows performance counter as reported by the operating system. In Oracle, an instance level statistic as gathered from some Oracle V\$ views. In Sybase, a sysmonitors counter collected by Sybase. In Web, an operating system or a Web server performance counter.
<b>PMDB</b>	The Precise data warehouse of performance and availability data. It can be hosted on an Oracle or SQL Server database.
<b>portal server</b>	An application server for Web-based applications that commonly provide personalization, single sign-on, and content aggregation from different sources and that host the presentation layer of Information Systems. Aggregation is the action of integrating content from different sources within a Web page. A portal may have sophisticated personalization features to provide customized content to users. Portal pages may have a different set of portlets creating content for different users.
<b>portlet</b>	A Java-based Web component, managed by a portlet container, that processes requests and generates dynamic content. Portlets are used by portals as pluggable user interface components that provide a presentation layer to Information Systems.
<b>Precise deployment</b>	An independent Precise system. It contains and manages various agent types and provides centralized monitoring and administration. A Precise deployment may contain multiple framework nodes. One of them is defined as the main framework node and it manages all other nodes of the Precise deployment.
<b>Precise FocalPoint</b>	See <a href="#">Precise FocalPoint agent</a> .
<b>Precise FocalPoint agent</b>	An agent that manages all agents in a single Precise deployment. Additional product FocalPoint agents manage specific technologies and resources.
<b>Precise Proxy agent</b>	When multiple Framework Nodes are managed by a single Precise deployment, the Precise FocalPoint agent manages all of the agents of the main Framework node, while every other framework node has a Precise Proxy agent to manage all its agents.
<b>Precise_root</b>	This is the term used in a path for the Precise installation directory. The terms <i>&lt;i3_root&gt;</i> or <i>i3 root</i> can appear in text too.



<b>program</b>	<p>A session identifier in Oracle, DB2, SQL Server, Sybase, Insight, and Alerts. A program as sampled, for example, by the SQL Server Collector, is the name of the executable that connects to the database. Applications that do not set the application name have N/A as program. When a SAP extension is installed, the SAP transaction overrides the program, and it may change during the application's lifetime. When a Siebel extension is installed, the Siebel views override the program, and it may change during the application's lifetime. In Insight, program is the name of an executable as recognized by the operating system. If an executable is invoked from a script (a batch or a shell), the script is displayed as the command entity. In Alerts, program is part of the customized metrics definition and is the name of the executable or stored procedure executed in the database that runs when the metric is sampled. In action definitions, program is the name of the executable that will run if the metric exceeds its threshold.</p>
<b>progress</b>	<p>In Alerts, the management state of a metric for which an alert has been raised. The following statuses exist:</p> <p>Open: An alert is raised.</p> <p>Investigated: The alert is taken care of.</p> <p>Closed: The problem has been solved.</p>
<b>Proxy FocalPoint</b>	See <a href="#">Precise Proxy agent</a>
<b>recommended index</b>	<p>In SQL Server, a function that uses the Microsoft Index Tuning Wizard to recommend on adding indexes or statistics for a selected statement, batch, or table. Based on the results of this function, the Optimizer will choose a better access plan and make the respective statement or batch perform better. For statements and batches, recommendations are based on the content of the statement or batch. For tables, recommendations are based on all the statements that are stored in the PMDB, are executed during the selected time period, and have an average duration time greater than the value defined in the registry (where 0 is the default).</p> <p>See also <a href="#">advice</a>.</p>
<b>related SQL</b>	<p>In Oracle, a generated statement that uses alternative syntax to access the database in different ways and returns the same output as the original statement.</p>
<b>relative frequency</b>	<p>Number of contributor invocations per entry point. For example, if a service request calls three methods each time it is invoked, the Relative Frequency for the method is three invocations per service request execution. Similarly, if a service request calls one method every other time it is invoked (half of the time), the Relative Frequency for the method is 0.5 invocations per service request execution.</p>
<b>rendering time</b>	<p>In Web, a counter that keeps track of the time that it takes for a Web page to be loaded from the moment the first byte arrives until the Web page is fully loaded or the user interrupts or abandons the loading process.</p>
<b>report</b>	<p>A collection of queries, programming code, and layout settings that Report Manager executes to generate graphical results like tables and charts.</p>
<b>Report Manager</b>	<p>Uses historical information to identify problematic conditions, track long-term performance, volume trends and patterns, view availability problems over long periods of time and on different levels, compare the performance of similar systems, correlate between performance metrics of different products, assist in capacity planning, and generate demand-driven, user-defined reports.</p>
<b>Report Manager FocalPoint</b>	<p>An agent that examines the PMDB tables to produce scheduled performance reports.</p> <p>See also <a href="#">PMDB</a>.</p>
<b>report parameter</b>	<p>In Report Manager, a keyword used in a report. Its value is set during the report execution. A parameter's value can be updated either permanently or for the current execution only.</p>
<b>report property</b>	<p>In Report Manager, the attributes that define a specific report, consisting of report parameters and scheduling information.</p> <p>See also <a href="#">report parameter</a>.</p>
<b>request</b>	<p>In Web, a counter that keeps track of the number of HTTP requests sent for a viewed entity.</p>
<b>request error</b>	<p>In Web, a counter that keeps track of the percentage of requests completed with an HTTP error.</p>
<b>sampling</b>	<p>In Alerts, the process during which a metric queries a Precise product for a specific instance, retrieves values, and calculates the metric's alert level.</p>
<b>sampling base</b>	<p>In Alerts, the start time of a scheduled sampling process (by default Sunday, 00:00 AM).</p>
<b>sampling period</b>	<p>In specific Alerts metrics, the time frame during which statistical data is returned from other Precise products. Such a metric is for example Oracle's General Behavior metric, which returns database behavior for a certain period of time.</p>

<b>sampling rate</b>	In Alerts, the frequency of a metric's regular sampling schedule. The sampling rate is measured in minutes.
<b>Savvy</b>	An Insight agent that collects AppTier-specific performance data.
<b>scalability</b>	A system's ability to withstand load. For example, positive scalability means that the system continues to function properly even when it is called upon to service a larger number of users.
<b>schema changes</b>	In Oracle and SQL Server, a process that captures schema changes and saves them in the PMDB. In SQL Server, instance configuration parameters and database option changes are also captured.
<b>Script Installer</b>	A component of Precise Agent Installer that enables adding a small JavaScript script, also known as a Web browser-side agent, to the Web pages of your Web site.
<b>server</b>	Also called a host machine or server machine. The combination of a computer and associated operating system software that is accessed by multiple clients to perform requested functions and typically returns results to the clients.
<b>server-side collection</b>	In Web, the collecting of performance data from the Web server instance through the Web server agent.
<b>service + network time</b>	In Web, a counter that keeps track of the service and network time, including the total amount of time the request took to reach the server.
<b>Service Level Agreement</b>	See <a href="#">SLA (Service Level Agreement)</a> .
<b>service time</b>	In Web and SmartLink, the time elapsed from when a request is received by the server to the time a response is sent back to the computer that made that request. The service time is measured on the server side. In J2EE, the time it takes an invocation to complete execution. In other words, service time is the average length of time between the start time and end time of a Java method execution. For example, the SQL service time is the time it takes the JDBC method executing the SQL statement to be completed. The service time includes CPU and wait time. The service times are reported in the interval in which they complete execution. Though a contributor's average service time may be very small, the contributor may be called many times. As a result, a contributor's overall contribution to performance may be large even though its average service time is low.
<b>servlet</b>	A class that is loaded only once and for which the application server uses multithreading to process requests. The servlet generates an HTML page that is sent back to the Web browser.
<b>size</b>	In Web, a counter that keeps track of the bytes sent and received.
<b>SLA (Service Level Agreement)</b>	A formal definition of an information system's performance goals. Within Precise, an SLA consists of clauses corresponding to various system activities. Once a system's SLA is defined, its SLA compliance can be analyzed, and breaches can be isolated to identify their causes.
<b>SmartLink</b>	In Insight, a component that provides transactive, correlated information across AppTiers from the user's perspective. Insight SmartLink functions in PeopleSoft and Web applications environments.
<b>SmarTune</b>	In Oracle, SQL Server, and .NET, an algorithm that analyzes performance metrics, identifies and ranks potential problem areas, and provides advice for correcting the problems.
<b>socket</b>	An I/O abstraction layer that enables processes to communicate with each other, regardless of whether they are on the same server. Sockets are bi-directional FIFO pipes that look like regular file I/O to the developer with the abstraction layer handling all of the low-level communication details.
<b>StartPoint</b>	The opening page of Precise. It provides a quick overview of the environment status and links to launch any of the Precise products.
<b>Statistics workspace</b>	In Oracle, DB2, SQL Server, Sybase, J2EE, and Web this workspace presents instance level statistics such as hit ratios, utilization, JMX metrics, logging, and more.
<b>submetric</b>	Also called child metric. In Alerts, the subquery of a parent metric. A child metric gathers its own data and combines it with the data gathered by other child metrics to form the result of the parent metric. Each child metric has its own thresholds and may be enabled or disabled individually. See also <a href="#">parent metric</a> .
<b>summary table</b>	A container that stores the information collected by the Precise agents and loads it into the PMDB. Summary tables store the same data at different levels of granularity: time slice, hourly, daily, weekly, and monthly. By storing data in multiple summary tables, Precise can present a detailed view and progressively higher-level views of the same data. Summary tables are particularly useful for data aging. A data purging policy can be implemented for each summary table so that detailed data is retained for short-term historical analyses while more summarized data is used for long-term analyses and trending.

<b>technology</b>	A technology identifies the monitored object. For example, Oracle, SQL Server, Sybase, and DB2 are different technologies, while all Web servers (such as: Apache, IIS, and WebSphere) are defined as a single Web technology. A single monitored object can be monitored by two different technology's Collectors. For example, WebLogic server can be monitored by both a Web Collector and a J2EE Collector.
<b>throughput</b>	The number of average completions per second that are observed during an interval.
<b>time slice</b>	<p>A unit used to break up long sessions into smaller time periods. The length of a time slice is preset and cannot be changed. It represents the maximum time that passes before the data collected can be displayed. For example, if the length of a time slice is 15 minutes, the collection is only updated at 15-minute intervals.</p> <p>The length of a time slice is different for each technology: In Oracle, SQL Server, Sybase, DB2, Web, .NET, MQ, Tuxedo, Network, and OS, a time slice is 15 minutes. In J2EE and SmartLink, a time slice is either 30 seconds or 5 minutes. In Precise for SAP, a time slice is 5 minutes.</p> <p>See also <a href="#">collector slice size</a>.</p>
<b>URI (Uniform Resource Identifier)</b>	The relative path to a resource after the location (network node) is found.
<b>URL mapping</b>	In Web, a function that defines rules that map URLs (Uniform Resource Locators) with dynamic parameters originating from a specific domain to a format that identifies the Web pages and prevents them from having different URLs.
<b>Web client browser-side</b>	In Web, the gathering of performance data from the browser running on the desktop of the Web application's user, through the static or dynamic instrumentation of Web pages.
<b>Web server</b>	A program that receives client requests for Web pages, retrieves the static pages and/or issues a request for dynamic page creation to an application server, and sends the pages to the client. In Web, a computer that delivers (serves up) Web pages. Every Web server has an IP address and possibly a domain name.
<b>work time</b>	The time spent in the specific entity excluding time spent by called (other) entities. In J2EE, work time of a method is calculated as the service time of that method minus the service time of the methods it invoked.
<b>work type</b>	In Web, a counter that keeps track of the type of the Web instance, such as Web, PeopleSoft, SAP, or Siebel.
<b>workspace</b>	A display unit in Precise products. All workspaces display data from different perspectives. For example, in Oracle, SQL Server, and Sybase, the Current workspace shows information on the sessions currently active in an application, and the Objects workspace displays information on Oracle or SQL Server database objects that can be used to understand relationships and associations between database schema objects.