

Precise 10.3

Installation Guide

Exported on 02/04/2021

I D E R A

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Organizations depend on the reliability and speed of databases to support mission-critical applications. Precise products provides database administrators with low-impact monitoring and intuitive drill-down on database and transaction performance for multiple platforms, including Microsoft SQL Server, Oracle Database, IBM Db2, and more.

- [Precise Release Notes](#)
- [Get Started with Precise](#)
- [Precise Business Tools](#)
- [Precise Application Tools](#)
- [Precise Database Tools](#)
- [Precise Insight](#)
- [Precise Report Manager](#)
- [10.3 - View all Precise 10.3 PDFs](#)
- [View all Precise 10.2 PDFs](#)
- [View all Precise 10.1 PDFs](#)
- [Installing Storage tier collectors](#)
- [WebSphere MQ tier collector installation](#)

Introduction

This section includes the following topics:

- [Introducing Precise](#)
- [Precise architecture](#)
- [Precise Framework](#)
- [Overview of all Precise components](#)
- [Where to get more information](#)

Introducing Precise

Precise is an integrated software solution suite that improves the performance and availability of enterprise applications. Precise components have extensive diagnostic capabilities in the Web, application, database and storage tiers, which facilitate the isolation and resolution of transaction performance issues.

Precise consists of a framework and of various agents. The Precise Framework must be installed for any type of performance monitoring to take place, and Precise agents need to be installed per technology to enable performance monitoring for that technology.

It is highly recommended to install the Precise Framework on a dedicated server.

Precise architecture

Precise monitors the performance of your system by correlating performance information from the products that are installed and running on the servers within your organization. To do so, it needs to have software components running on various machines in your application.

Precise supports a federated architecture. A single Precise deployment may contain multiple framework nodes (each using a dedicated PMDB); this allows a large-scale installation supporting thousands of monitored instances. AdminPoint (the administration console) provides a single point of installation, management, and maintenance of all attached framework nodes.

Global resources such as Users, Roles, and Permissions are shared by all framework nodes.

Global and local resources such as Locations, SLA definitions, and Groupings can be defined globally, or defined differently per framework node.

The Precise architecture consists of the Precise Framework and agents.

Precise Framework

The following Precise Framework components are automatically installed with the Framework Installer:

- **Precise FocalPoint.** The primary management component for all Precise agents.
- **PMDB FocalPoint.** The agent periodically loads and summarizes resource consumption and response time data from monitored instances, and saves the information in the PMDB (hosted by an Oracle or SQL Server database).
- **Alerts FocalPoint.** The agent responsible for alerting.
- **Report Manager FocalPoint.** The agent responsible for scheduling reports and defining custom reports.
- **Insight FocalPoint.** The agent that provides SmartLink correlation (transaction breakdown into application tiers).


It also manages all Collectors of the following technologies:

- Operating System (OS)
- Network

- Tuxedo
- WebSphere MQ
- Oracle Applications
- Citrix
- Add-ons

Overview of all Precise components

This section gives a short description of all Precise components.

 Not all application versions are supported. For more information, see the Precise Support Matrix at <https://idera.secure.force.com/precise/>.

About Alerts

Alerts is an alerting product that helps you proactively manage your system's performance. With Alerts, you can effectively detect availability and performance issues and react quickly to solve them.

Alerts samples data collected by other Precise products for the values of a set of metrics and compares these values with a predefined set of values called thresholds. When the value of a metric exceeds, or does not meet the metric's threshold value, Alerts notifies you through its user interface, an email, SNMP traps, and so on. It can even perform a defined corrective action.

The Alerts agents are called InformPoints. They retrieve performance data collected by other Precise products, analyze it, and generate alerts if the predefined thresholds are exceeded. For more information, contact [Precise Customer Support](#) or your SE.

About Report Manager

Report Manager is a reporting tool. It queries the PMDB and displays the results in reports that are generated according to schedule, or on demand.

The reports present historical information. They are designed to help you identify problematic conditions before they turn into performance issues; track long-term performance and trends; plan for future growth; compare performance of similar systems and time periods; correlate performance metrics of different products; and generate customized reports. For more information, contact [Precise Customer Support](#) or your SE.

About Insight

Insight is a monitoring product that measures the real end-user response time of a multi-tier application and, within an end-to-end view, breaks down the response time by the technology tiers, such as Web server, application server, database server or storage so IT staff know where to prioritize their efforts. Insight also provides application-specific performance metrics for SAP, Oracle, PeopleSoft, Siebel, Tuxedo, J2EE, and Citrix-based applications. For more information, contact [Precise Customer Support](#) or your SE.

About Precise for Web

Precise for Web helps you build performance metrics based on performance data gathered from the browser and/or the Web server. The metrics can be correlated with the site's business goals to verify that improvements are prioritized by their impact on the business. For example, the Web page takes a long time to render. This has an

impact on SLAs, etc., so we need to improve Javascript performance and minimize the number of Web components on the page.

For end-user metrics, Precise for Web uses an agent that collects the end-user response time. The data is then sent to the Precise for Web Collector. For Web server metrics, Web Tier Collectors gather data on Web server response times.

The Web Server Collectors collect response time data on the Web server. They sample the Web filters and correlate this data with the network time spent for each URL. This way, you can see the total response time for the Web server and get a first-level breakdown of the entities that share the response time on the Web server. For more information, contact [Precise Customer Support](#) or your SE.

About Precise for J2EE

Precise for J2EE is a performance monitoring and tuning product that can help you dramatically improve the performance and efficiency of your server-side Java 2 Enterprise Edition (J2EE) applications. Precise for J2EE allows you to quickly identify the root cause of performance issues in your Java Server Pages (JSP), Servlets, Enterprise JavaBeans (EJB), JDBC/SQL calls and other components conforming to well-known J2EE standards and your own custom application frameworks.

The following Application Servers are supported on a J2EE server:

- Oracle WebLogic
- IBM WebSphere
- JBoss
- Apache Tomcat
- Oracle Application Server
- Sun Glassfish
- SAP WAS J2EE
- other generic J2EE applications

For more information, contact [Precise Customer Support](#) or your SE.

About Precise for Microsoft .NET

Precise for Microsoft .NET is a performance monitoring and tuning product that can help you dramatically improve the performance and efficiency of your MS .NET-based applications. Precise for Microsoft .NET collects, measures, and correlates performance data about the ASP.NET (Web) and MS .NET instances you want to monitor. It provides detailed information on MS .NET applications.

Precise for Microsoft .NET offers a wide range of data presentations to enable quick and accurate monitoring and performance analysis. Operational data is summarized to enable easy identification of abnormal conditions.

Precise for Microsoft .NET also archives performance data and provides a fully detailed display of this historic data for use in performance, QA, and capacity planning analysis. For more information, contact [Precise Customer Support](#) or your SE.

About Precise for Oracle

Precise for Oracle is a performance monitoring and tuning product that can help you dramatically improve the performance and efficiency of your business applications running on Oracle databases (including SAP, Oracle e-business suite, PeopleSoft, Siebel, and custom apps). It provides a complete view of application performance by capturing, measuring, and correlating performance metrics from all critical system components.

With Precise for Oracle, you can perform long-term analysis of resource consumption by SQL statements, users, and programs; tune SQL statements and the access path of database objects; generate SQL statement alternatives;

simulate database changes for impact analysis; and recommend indexes. In addition, SmarTune discovers performance issues in your Oracle database and instructs you how to solve them.

Based on your application (e.g. an ERP application), you can also install special Collectors (Interpoints), that gather information on the activities and resource consumption of that application. And if your Oracle database is stored on external storage arrays supported by Precise for Oracle, you can install Precise for Storage for a specific storage array. By doing so, you can gain a true end-to-end view, from application user experience over database view into storage. For more information, contact [Precise Customer Support](#) or your SE.

About Precise for SQL Server

Precise for SQL Server is a performance monitoring and tuning product that can help you dramatically improve the performance and efficiency of your SQL Server-based applications. Precise for SQL Server collects, measures, and correlates performance data about the SQL Server instances you want to monitor. It provides detailed information on the application and the database running on the SQL Server.

Precise for SQL Server enables you to identify the specific cause of a performance issue, monitor SQL Server users, programs, and statements, and get suggestions on how to fix that issue. In addition, you can associate a logical database I/O with its physical device I/O for Windows file systems running on different storage devices, including EMC and HP. This ability enables you to analyze I/O bottlenecks, for example a contention issue caused by two heavy database index files that are accessed simultaneously and located on the same physical device.

With Precise for SQL Server, you can perform long-term analysis of resource consumption by SQL statements, users, and programs. In addition, SmarTune discovers performance issues in your SQL Server database and instructs you how to solve them.

Precise for SQL Server is integrated with Precise for Microsoft .NET, making it possible to analyze the relevant instance across platforms by launching Precise for SQL Server from within Precise for Microsoft .NET.

The SQL Server Collectors collect performance data on SQL Server instances.

Based on your application, you can also install special Collectors (Interpoints), that gather information on the activities and resource consumption of special application components. The Interpoints then correlate this information with SQL Server information so that you can see ERP users, transactions, reports, and so on.

You can install the following Interpoints:

- Interpoint for PeopleSoft
- Interpoint for SAP
- Interpoint for Siebel

For more information, contact [Precise Customer Support](#) or your SE.

About Precise for DB2

Precise for DB2 is a performance monitoring and tuning product. Precise for DB2 is complementary to IBM's management and analysis tools and together they can be used to minimize system issues and achieve maximum system up-time and performance. It also provides a complete view of application performance by capturing, measuring, and correlating performance metrics from all critical system components.

With Precise for DB2, you can perform long-term analysis of resource consumption by SQL statements, users, and programs; tune SQL statements and the access path of database objects; generate SQL statement alternatives; simulate database changes for impact analysis; and recommend indexes.

If your application is an SAP application with a DB2 database, you can also install a special Collector, an Interpoint for SAP that gathers information on the activities and resource consumption of SAP application components. The Interpoint for SAP then correlates this information with DB2 information so that you can see SAP users, transactions, reports, and so on.

If your DB2 files are stored on external EMC storage units, you can install Precise for Storage to map the DB2 files to their underlying devices of the storage unit and get additional statistics from the storage array. For more information, contact [Precise Customer Support](#) or your SE.

About Precise for Sybase

Precise for Sybase is a performance monitoring and tuning product that can help you dramatically improve the performance and efficiency by proactively monitoring, analyzing, and tuning Sybase instances. Precise for Sybase collects, measures, and correlates performance data about the Sybase instances you want to monitor.

Precise for Sybase enables you to identify the specific cause of a performance issue, monitor Sybase users, programs, and statements, and get suggestions on how to fix the issue.

Precise provides an initial tuning solution for the Sybase Replication Server integrated with Precise for Sybase. It can monitor Replication Server (RS) statistics information related directly to the ASE in the start/end point of the replication chain. Approximately 90% of all latency issues are caused by the ASEs themselves and not by the RS components. For more information, contact [Precise Customer Support](#) or your SE.

About Precise for SAP

Precise for SAP is a performance monitoring product that can help you dramatically improve the performance and efficiency of your SAP systems. Precise for SAP collects and measures performance and availability data, such as SAP ABAP application server utilization and workload. The slightest indication of response time degradation can be quickly isolated anywhere in the architecture and the appropriate action taken to minimize the impact on his business.

The SAP Collectors collect performance and availability data on the SAP systems you want to monitor. The SAP solution consists of Precise for SAP and an Interpoint for SAP.

Using SAP to launch Precise for database

Precise allows you to correlate SAP application performance data with database performance data, for selected databases (SQL server, DB2, Oracle). To do that, you must install the Precise for database FocalPoint and the Interpoint for SAP.

i For SAP systems with Oracle or DB2 database, use the PMDB with Oracle database and for SAP systems with SQL Server database, use the PMDB with SQL Server database.

For more information, contact [Precise Customer Support](#) or your SE.

i Not all SAP applications are supported. For more information, see the Precise Support Matrix at <https://idera.secure.force.com/precise/>.

About the Oracle Applications instance

The Oracle Applications Collectors collect performance data on Oracle Application entities. They include Interpoints for Oracle Applications.

The Interpoint for Oracle Applications correlates Oracle Applications entities with resource consumption data of Oracle entities that is gathered by Precise for Oracle. Since the Insight FocalPoint agent is installed automatically through the Framework Installer, you also get the Insight Savvy for Oracle Applications, which provides Forms

Server response time data for Oracle Applications entities, such as: Oracle Applications users, Forms, and Screens. For more information, contact [Precise Customer Support](#) or your SE.

About the Siebel instance

The Siebel Collectors collect performance data on Siebel entities. They include Interpoints for Siebel which correlates Microsoft SQL Server or Oracle entities with resource consumption data of Siebel entities that is gathered by Precise for SQL Server or Precise for Oracle, respectively. For more information, contact [Precise Customer Support](#) or your SE.

About the Tuxedo instance

The Tuxedo Collectors provide performance metrics for Tuxedo. The Insight Savvy for Tuxedo gathers response time directly from the Tuxedo shared memory to provide response time distribution data for Tuxedo entities. For more information, contact [Precise Customer Support](#) or your SE.

About the Other Tier

The Other Tier instance is installed for software products that communicate with their clients using standard TCP/IP and that are not specifically supported by the Precise product suite. The Other Tier instance collects network activity between servers. This information is collected and managed by the Insight FocalPoint agent. For more information, contact [Precise Customer Support](#) or your SE.

About the WebSphere MQ instance

The WebSphere MQ Collectors gather general performance data on IBM WebSphere MQ instances, such as about the applications and users that are part of a process, the message body and the message header. In addition, they collect queue time and work time data. They also calculate the message queue time (the time a message spends in the queue) and the message work time (the time that elapses from the moment a message is read from a queue until a response message is put on another queue). For more information, contact [Precise Customer Support](#) or your SE.

About the SDK Add-on Tiers

The SDK Add-on Tiers feature is fully described in the *SDK Add-on Tier User Guide*. For more information, contact [Precise Customer Support](#) or your SE.

About Precise Custom Portal

The Precise Custom Portal is a lightweight, configurable portal application that provides access to various types of data from different applications. The Precise Custom Portal features a Web-based view. It is highly customizable and extensible, allowing you to build a dashboard for each user or each function within your organization. For example, you can build a dashboard for all the information that a system administrator or director of IT operations would need to constantly follow up on. This component is automatically installed as part of the Precise framework installation.

Where to get more information

The latest information on Precise and additional information can be found at <https://idera.secure.force.com/precise/>.

Clean installation of the Precise framework

This section includes the following topics:

- [Preparing to install the Precise Framework](#)
- [Prerequisites for installing the Precise Framework](#)
- [Installation planning checklist](#)
- [Performing the installation](#)
- [Setting up the Precise Framework installation](#)

i This section describes the Precise installation process on a clean system. If you already have a Precise version installed on your system, this section is not relevant. Instead see [Upgrading Precise](#).

Preparing to install the Precise Framework

Before installing this version of Precise, it is important to understand the high-level Precise architecture and plan the installation accordingly.

The Precise Framework must have a database to store performance data. This database is referred to as the PMDB. The PMDB needs to be installed and configured before the Precise installation begins.

The PMDB can either be an Oracle database or a Microsoft SQL Server database. Critical guidelines for selecting and configuring the PMDB:

- It is highly recommended to dedicate a new database instance for exclusive use as the PMDB.
- The PMDB uses the Oracle/SQL Server Database Enterprise Edition instance. Using the Standard Edition is possible but not recommended. Standard Editions have severe limitations regarding the number of instances and the amount of the data that can be stored and are also not supported when upgrading Precise.

If you choose Oracle Enterprise Edition:

- The Oracle Partitioning option of Oracle Database Enterprise Edition is required and must be enabled in the database.
- An SQL Server PMDB is needed if you want Precise to monitor SQL Server and/or Sybase performance, or an ERP system that is based on SQL Server or Sybase (such as SAP).
- An Oracle PMDB is needed if you want Precise to monitor Oracle and/or DB2 performance, or an ERP system that is based on Oracle or DB2, such as SAP or Oracle E-Business Suite.
- You must install two PMDBs (one on Oracle and one on SQL Server) if you want to monitor mixed landscapes consisting of databases (SQL Server / Sybase, AND Oracle / IBM DB2).

i Every version of the Precise framework should have its own schema. It is highly recommended to dedicate a new Oracle/SQL Server instance for use as the PMDB.

The Precise agents typically reside on the monitored servers and need to be able to communicate with the Precise Framework. Verify that the network settings (such as firewall configurations etc.) will enable that. For more information, see [Communication Requirements](#).

Prerequisites for installing the Precise Framework

Before planning the installation process, verify that:

- All technologies and operating systems for Precise to be installed for monitoring are supported by Precise. Information regarding the supported operating systems and technologies can be found in the Precise Support Matrix at <https://precise.secure.force.com/>.
- All minimum requirements for installation are met, as per the [Precise Minimum Requirements for Installation Guide](#). These requirements include hardware, vendor updates, end-user client server requirements for using the Precise user interface, communication requirements, and privileged user accounts.
- You have access to login credentials for all privileged user accounts (needed to complete the installation).

Installation planning checklist

The following checklist can be used to verify that you are ready to start installation of Precise:

- The Precise website was reviewed for a newer version of this document. If there is a newer version, download it and use it instead of this one. Visit the Precise website at <https://idera.secure.force.com/precise/>.
- The Precise deployment architecture is well understood.
- Precise Support Matrix was reviewed regarding the framework server.
- A server for the Precise Framework is ready.
- Installation prerequisites have been met (See [Prerequisites for installing the Precise Framework](#)).
- A database for the Precise PMDB is ready according to all above requirements.
- Communication requirements for allowing communication between the Precise Framework and the Precise agents are met.
- The Precise website was reviewed for product updates. Visit the Precise website at <https://idera.secure.force.com/precise/>.
- Downtime has been coordinated for the monitored instances.

Performing the installation

- i** Before beginning the installation process, verify that you have planned the installation according to [Preparing to install the Precise Framework](#).

The Precise Framework can be installed via a Windows-based user interface. Verify that the Windows server from which you will be installing the Precise Framework meets the following preconditions:

- The user you will be logged in as when performing the Precise Framework installation has local administrator privileges on the server.
- The Microsoft .NET Framework version 2.0 SP1 is installed on the server.

To install the Precise Framework


1. Download the following:
Precise vx.x.x from <https://idera.secure.force.com/precise/>.
2. Unzip the downloaded files for Precise vx.x.x into an empty folder.

- i** It is recommended to keep the Precise vx.x.x download (or DVD) available for use after finishing the Precise installation.

3. On a Windows server, open the folder with the unzipped Precise vx.x.x files (or DVD), open the Precise x.x.x folder and double-click **setup.exe**. The Precise Framework installer will launch, and guide you through the Precise Framework installation.
For step-by-step instructions regarding each framework installer screen, see [Setting up the Precise](#)

Framework installation. Most of the screens require you to input details regarding your information systems. It is recommended to compile a list of all required user inputs before continuing.

4. Apply a valid license.
When the Precise Framework installation process is complete, the “Precise Framework Installer - Finished” screen appears.
5. Select **Launch AdminPoint** to apply Precise license.
6. Click **Finish**. This launches the Precise administrative interface (“AdminPoint”), used to apply Precise licenses.

 Depending on your browser security settings, you may now be prompted to install a Precise component in the browser. In order for the Precise user interface to function properly, this component must be installed.

7. A login screen appears. The default administrative user is “admin” and the initial password for this user is “admin”. Log in as this user.
8. On the screen that appears, click **Apply License** and select the license file that you received when you bought Precise, for your installation. Should you not have received the license file, contact [Precise Customer Support](#).
9. A pop-up window will appear, confirming that the license was successfully applied. Click **OK**.

Installing Precise with the Command Line Interface (CLI) utility

This version of Precise can also be installed with the CLI utility. Before installing using the CLI utility, verify that you have followed the planning and preparations mentioned above. For installing Precise with the CLI utility, see the [Precise CLI Utility Reference Guide](#).

Installing Precise agents to monitor your technologies

Your Precise Framework is now fully installed. To monitor the performance of a technology, a Precise agent must be installed on the servers to monitor. Each agent has unique preparations and prerequisites, according to the technology that it monitors.

To plan this stage of installation, review the specific installation process, preparations, prerequisites, and post-installation action items for the technology that you wish to monitor with the current release of Precise. In addition, the Precise agent installation procedure varies slightly according to the operating system of the monitored server. For more details, see the appropriate section in this guide.

The following checklist can be used to verify that you are ready to install Precise agents:

- Ensure readiness for agents installation checklist
- Enumerate the technologies of which you wish to monitor performance
- Per technology to be monitored, ensure that all installation requirements are met
- For all servers where the technologies to be monitored reside, ensure that the installation requirements are met
- Login access to privileged user accounts is readily available
- Communication requirements for allowing communication between the Precise Framework and the Precise agents are met

Installing instances

To install instances see the sections describing the relevant technologies in the Precise Installation Guide. When installing new instances of monitored technologies, a pop-up window requesting to locate files may appear on screen.

When the pop-up window titled "please locate the file <filename>" appears, you should supply the full path to the I3\distribution folder under the location where you unzipped the Precise download or on the DVD depending on which version you have installed.

Setting up the Precise Framework installation

The Precise Framework installer displays a series of screens. Most of the screens require you to input details regarding your information systems. Below is the Framework installation procedure, and a brief explanation of the requested input on each screen. It is recommended to compile a list of all required user inputs based on this section before continuing.

Welcome screen

The Welcome screen is the first screen in Framework installation. Click **Next** on the Welcome screen to begin the installation.

License agreement screen

Review the *Precise Software License Agreement* and mark **I accept the terms of the license agreement** to enable installation. Click **Next** to begin Precise Framework installation.

Selecting the Precise installation type

On the Installer Options screen, select **Install Precise version x.x**, and then click **Next**.


Selecting the server for Framework installation

To select the server for Framework installation

1. In the Server name or IP address text box, enter the server name or IP address.
2. In the Server type text box, select the available server type (Windows or UNIX) from the drop-down menu.
3. Click **Next**.

Framework installation on a Windows server

The Precise Framework can be installed through automatic or manual installation.

 You should only select Windows manual installation mode in the event that you have a Windows server that does not allow remote installation, or if you encountered issues during the automatic Windows server installation.

To install the Precise Framework on your server using automatic installation, you must access it using a local administrator account.

To install the Precise Framework on your server using automatic installation

1. Using the credentials of the user currently accessing the server
 - a. Select **Use Current Credentials**.
 - b. Select an installation folder by clicking on the browse (...) button. The installation folder specifies the location on the server where Precise Framework files will be installed.
 - c. Click **Next**.
2. Using a different account with administrator permissions

- a. Select **Change Credentials**.
- b. Enter the following in their respective text boxes: User name (The name of a user with administrator privileges), Password, and Domain or Server.
- c. Select an installation folder either by typing it in or by clicking on the browse (...) button. The installation folder specifies where the Precise Framework files will be installed.
- d. Click **Next**.

To install the Precise Framework on your server using manual installation

1. Select **Manual Installation**.
2. Click **Next**.

For more information see [Adding a Windows server using manual mode](#).

Framework installation on a UNIX server

i You should only select UNIX manual installation mode in the event that you have a UNIX server without Telnet/SSH/SCP connection or if you encountered issues during the UNIX server installation using automatic mode.

To perform an automatic installation of the Precise Framework on a UNIX server (common server) with Telnet/SSH/SCP connection from the client PC to the Precise FocalPoint

1. Select Automatic Installation.
2. Enter the User name.
3. Enter the Password.
4. Select an installation folder either by typing it in or by clicking on the browse (...) button. The installation folder specifies where the Precise Framework files will be installed.
5. Click **Next**.

To install the Precise Framework on your server using manual installation

1. Select **Manual Installation**.
2. Click **Next**.

For more information, see [Adding a UNIX server using manual mode](#).

Selecting the PMDB

To select the database to be used by the PMDB

1. Select one of the following enabled options
 - a. Oracle
 - b. Microsoft SQL Server (Using OS authentication)


i The "Microsoft SQL Server (Using OS authentication)" option is only enabled when all the Framework servers are Windows servers, and the servers' service authentications are either all configured to run with a user or are all set to the local system. If they are set to the local system, the service authentication is the user provided in the next step.

- c. Microsoft SQL Server (Using SQL authentication)
2. Click **Next**.


Entering Microsoft SQL Server PMDB login information

To enter Microsoft SQL Server PMDB login information (using SQL authentication)

1. In the SQL Server instance field, click the drop-down menu and select the SQL Server instance from the list, or type in a different instance.

 The selected Microsoft SQL Server instance will be used as the PMDB.

2. Enter the login name.

 The login name will be used both for the PMDB installation, as well as for connecting to the SQL server when using the PMDB.


3. Enter the password for the login name specified.
4. Enter the name of the database you want the PMDB to use. If a database with that name exists, it will be used. If not, a new database will be created. For a new database, fill the "data path" and "log path" fields.
5. By default the PMDB schema is automatically installed. To install the schema manually, see [Manually installing the SQL Server PMDB schema](#).
6. Click **Next**.

To enter Microsoft SQL Server PMDB login information (using OS authentication)

1. In the **SQL Server instance** field, click the drop-down menu and select the SQL Server instance from the list, or type in a different instance.

 The selected Microsoft SQL Server instance will be used as the PMDB.

2. Enter the user name.

 The User name will be used both for the PMDB installation, as well as for connecting to the SQL server when using the PMDB.

3. Enter the password for the login name specified.
4. Enter the **Domain or Server name**.
5. Enter the name of the database you want the PMDB to use. If a database with that name exists, it will be used. If not, a new database will be created. For a new database, fill the "data path" and "log path" fields.
6. By default, the PMDB schema is automatically installed. To install the schema manually, see [Manually installing the SQL Server PMDB schema](#).
7. Click **Next**.

Filling new database properties

To change the new database properties

1. In the PMDB Instance Parameters screen, click **Advanced**.
2. In the New Database Properties tab, fill in the following fields:
 - **Collation**. Choose a case sensitive collation
 - **Data Size**. Enter the initial size in MB
 - **Data Growth**. Enter the auto growth in MB
 - **Log Size**. Enter the initial size in MB
 - **Log Growth**. Enter the auto growth in percent
3. Click **OK**.

Manually installing the SQL Server PMDB schema


To manually install the PMDB schema

1. On the PMDB Instance Parameters screen, click **Advanced**.
2. In the Schema tab, mark the **Disable automatic schema installation** check box.
3. If the database contains partitioning, mark the **Database contains partitioning** check box.
4. Click the **Database version** drop-down menu and select the database version.
5. Click **OK**.
6. Perform the action items as provided.


Entering Oracle Server PMDB login information

To enter Oracle Server PMDB login information

1. In the **Oracle database server** field, click the drop-down menu, and then select the Oracle server from the list or type in a different server.
2. In the **Oracle SID** field, click the drop-down menu, and then select the Oracle SID or type it in.
3. Enter the **Oracle Listener port number**.
4. If you want to use RAC, select the **Use Oracle RAC service name** box.
5. If the PMDB database is to be installed in an Oracle Container database, then the PMDB needs to be installed in one of the PDBs and not the main Container. Select the **Use Oracle RAC service name** box.
6. By default, the PMDB schema is automatically installed. To install the schema manually, see [Manually installing the SQL Server PMDB schema](#).
7. Enter the user name of the Oracle DBA user.

 This user name will be used only in the Framework installation, and will not be used again. This field is not required and will be grayed out if the schema installation mode is set to manual.

8. Enter the password for the Oracle DBA user.

 This field is not required and will be grayed out if the schema installation mode is set to manual.

9. Click **Next**.

Login Credentials

This section contains information regarding the Login Credentials screen.

Manually installing the Oracle PMDB schema

To manually install the PMDB schema

1. On the PMDB Instance Parameters screen, click **Advanced**.
2. Mark the **Disable automatic schema installation** check box.
3. If the database contains partitioning, mark the **Instance partitioning option is enabled** check box.
4. Click the Database version drop-down menu and select the database version.
5. Click **OK**.
6. Perform the action items as provided.

Entering Oracle server PMDB schema information

You now need to enter schema information for the Oracle server PMDB schema.

Storage parameters for the PMDB schema


Enter storage parameters for the PMDB schema.


For PMDB schema storage parameters, enter the following information:

- **Datafiles storage folder location.** The Datafiles storage folder location is where all datafiles are created (storage parameters). The folder must exist in the file system.
- **Update the tablespaces definitions (optional).** See [Updating the tablespaces definitions](#).

To enter Oracle Server PMDB schema information

1. In the **User name** field, type a new Precise user name, or click the drop-down menu to select an existing Oracle schema user name.

 When using an Oracle 12c containerized databases as PMDB, it is recommended that the PMDB is set up on a PDB and not on the root container. This can be done by using the service name checkbox in the database details screen of the framework installer.

 This is the name of the Precise user to be created in the Oracle instance to hold the PMDB schema. You can create a new Precise user, or select an existing user from the list.

2. Enter a new password to be assigned to the new user, or an existing password if you have chosen an existing user.
3. Confirm password.
4. Next to the **Store datafiles in this location** field, click the browse button and select the folder for storing datafiles.

 For Oracle ASM, specify the ASM disk group. (For example: +DISKGRP1/ora11asm/).

5. Click **Next**.

Updating the tablespaces definitions

The PMDB schema defines eight tablespaces. Five tablespaces are used for tables and three are used for indexes. The tables and indexes have three different sized tablespaces: small, medium, and large. The tables also have additional sts and infra tablespaces.


Each tablespace has a corresponding datafile. Based on this, eight datafiles will be created. The filenames have the following format: `<table_space_name>.DBF`.

The Temporary tablespace is used for temporary calculations (storage parameters). This can be an existing temporary tablespace.

The Temporary tablespace storage location is the datafile associated with the temporary tablespace (storage parameters).

To update the tablespace definitions

1. Open the Advanced dialog box. The Advanced dialog box displays the following values currently defined for each tablespace: Tablespace name, initial size, uniform size, and extent size.
2. In the tablespaces definition table, click on a value to update it.
3. In the **Temporary tablespace name** field, click the drop-down menu and select a temporary tablespace.
4. In the **Stored in datafile** field, enter the datafile in which the temporary tablespace will be storied.
5. Click **OK**.

 By default, the tablespaces are created as bigfiles. To create the tablespaces as regular tablespaces, clear the **Create tablespaces as bigfiles** check-box.

Installation preview screen


The preview screen signifies that the Precise Framework Installer has gathered enough information to begin the installation phase.

The preview screen displays the following details:

- Server name
- Installation folder (location)

On this screen, you can still change any of the displayed settings.

- To change any of the displayed settings, click **Back**.
- To continue the installation, click **Next**.

 Remember the Precise installation folder that you select during this stage. This folder is known as the *<precise_root>*, and is referred to and needed during the upcoming procedures.

Framework installation progress screen

This screen appears when the Precise Framework Installer is actually performing installation. Installation may take several minutes. The progress screen visually displays the progress of actual installation.

Framework Apply License screen

Using this screen, apply a Precise license.

Framework Installer finished screen

This screen appears when Precise Framework Installer has completed the Framework installation. If the manual schema option was chosen, you will be asked to run the schema creation script and the required action item to finish the installation.

Advanced Precise framework installation

This section includes the following topics:

- [Configuring the Precise FocalPoint Listener to a different port](#)
- [Configuring the GUI Web server to listen to a different port](#)
- [Configuring the Precise services to use a specific user for authentication](#)
- [Configuring multiple Precise FocalPoint agents on the same server](#)
- [Enabling Alerts in large installations](#)
- [Setting Alerts MOM connectivity](#)

Configuring the Precise FocalPoint Listener to a different port

To configure the Listener agent to a different port

1. Click **Advanced** on the Framework Installation screen (for Windows or UNIX server).
2. Select “Precise Listener agent port” and enter the Port number.
3. Click **OK**.

Configuring the GUI Web server to listen to a different port

To configure the GUI Web server to listen to a different port

1. Click **Advanced** on the Framework Installation screen (for Windows or UNIX server).
2. Select “Precise GUI port”, enter the Port number, and enter the shutdown port number.
3. Click **OK**.

Configuring the Precise services to use a specific user for authentication

To configure the Precise agents to use a specific user for authentication

1. Click **Advanced** on the Framework Installation screen (for Windows server only).
2. Mark the “Use different Windows Service credentials than the default LocalSystem account” box, and enter the following: User name, Password, and Domain or machine name.
3. Click **OK**.

i Normally, the Precise Framework Installer uses the default Local system account number for authentication. To configure a different user, check mark “Precise agents authentication”, enter the User name, Password, and the Domain or machine name.

Configuring multiple Precise FocalPoint agents on the same server

i To configure multiple Listeners, you must also configure the Listener to listen to a different port. For more information, see [Configuring the Precise FocalPoint Listener to a different port](#). If you want to install additional Listeners on the same server (for example in cluster applications), verify that each new Listener is given a different port number, and a different Unique ID.

To configure multiple listeners on the same server

1. Click **Advanced** on the Framework Installation screen (for Windows server only).
2. Select “Multiple Listeners”.

3. Enter a Unique ID.
The unique name is added as a suffix to the names of all Precise services, so that you can install several Precise Listeners.
4. Click **OK**.

Enabling Alerts in large installations

The server on which Alerts is installed, is configured to use a maximum of 128 MB RAM by default. This amount of memory will not always be able to accommodate the number of instances that you have in your system. As a result memory issues will be shown in the `alerts.focalpoint.out` and `alerts.informpoint.out` files. The solution to this is to change the memory configuration of the Alerts FocalPoint and Alerts InformPoint.

The following table displays rule-of-thumb memory values.

Table 3-1 Memory values

Amount of Instances	Memory Values (for FocalPoint and InformPoint)
Up to 100	128
101-400	256
401+	512 and higher*

* The memory values for the amount of instances that is higher than 400 should be increased to a value based on the system's needs. Although 512 MB is a rule-of-thumb for 400+ instances, you may need more.

It is still possible that memory issues show up in the `alerts.focalpoint.out` and `alerts.informpoint.out` files after you have updated the memory values according to the table. In that case increase the memory.

To change the memory size of Alerts Focalpoint

1. Go to the `<precise_root>\products\pulse\bin\` folder.
2. Open the `pspf_focal_init.xml` file.
3. Go to the Options tag that contains:
-Xmx128m
4. Change the number in that tag to a higher number as described in the table.
5. Save the file.
6. Stop and then restart the InformPoint.

To change the memory value in the `alerts.informpoint.out` file

1. Go to the `<precise_root>\products\pulse\bin\` folder.
2. Open the `pspu_point_init.xml` file.
3. Go to the Options tag that contains:
-Xmx128m
4. Change the number in that tag to a higher number as described in the table.
5. Save the file.
6. Stop and then restart the InformPoint.

Setting Alerts MOM connectivity

Microsoft Operations Manager (MOM) is a comprehensive server-monitoring solution that improves the availability, performance, and security of Windows-based networks and applications. It provides central monitoring and automatic issue resolution for networks that may scale to thousands of computers.

The Precise Management Pack provides integration with Precise's Application Performance Management (APM) Precise solution. It receives real-time alerts from the Precise alerting product, Alerts, which gathers performance and availability information from all instances monitored by Precise. Viewing Precise alerts in Microsoft Operation Manager (MOM) reduces the need to continuously monitor the Precise product consoles for new issues.

Microsoft Operation Manager integration action items

If you want to integrate Alerts with the MOM server, you need to verify that the Web service, Microsoft Operation Manager 2005 Connector Framework that is installed on your default server supports Basic authentication.

To verify Basic authentication support on MS IIS

1. Open the MS IIS Manager.
2. Right-click the Web service name and click **Properties**.
3. In the Directory Security tab, click **Edit**.
4. In the Authentication Methods dialog box, select Basic authentication (password is sent in clear text).
5. Click **OK**.
6. Click **Apply**.
7. Click **OK** and close the MS IIS Manager.

Precise APM Management Pack installation guidance

This section describes how to install the Precise APM Management Pack. For this you need the Precise Alerts MP.akm file and its location (by default this file is located in the Utilities\Alerts\MON MP folder in the Precise v9.6 download or on the DVD).

To install the Precise APM Management Pack

1. Open the MOM 2005 Administrator Console and right-click **Management Packs**.
2. Select the Import/Export Management Pack wizard and click **Next**.
3. In the Management Pack Import/Export Wizard dialog box, select Import Management Packs and/or reports and click **Next**.
4. Enter the path and filename of the AKM file.
5. In the Type of Import section, verify that Import Management Packs only is selected and click **Next**.
6. Select Precise Alerts MP.akm (this is the name of the supplied file).
7. In the Import Options section, select the pack that has to be imported.
8. Click **Next**.
9. Click **Finish**.
10. Verify the operation was completed successfully and click **Close**.

Installing a Precise application

This section includes the following topics:

- [What is the Application Installer wizard?](#)
- [Understanding the Application Installer wizard interface](#)
- [Working with the Application Installer wizard](#)
- [Configuring application types](#)

What is the Application Installer wizard?

After the Precise Framework is installed, you need to install a Precise application. A Precise application is a group of Precise agents installed according to the technologies you wish to monitor. In a Precise application, each technology is represented as a separate tier, and each Tier monitors the instances and clusters (as applicable) installed on it. In previous Precise versions, the applications (known as “environments”), were configured via the Display Instances and Clusters screen in AdminPoint, where agents were installed and configured separately for each technology, without an overview of the application to which they belonged.

Precise v9.6 introduces the Application Installer wizard. This wizard presents the different application options, and overviews of both the necessary technologies needed for each application option and the instances already installed for each technology. Using the Application Installer wizard, you maintain this overview of the application while launching technology-specific instance (or cluster) installer wizards, to ensure that all necessary Tiers are installed.

In addition, based on previously installed instances, the Application Installer wizard provides you with recommendations regarding the instances to install to optimize monitoring. The Application Installer also saves entered information and automatically fills out fields, ensuring a faster installation process.

Understanding the Application Installer wizard interface

The Application Installer wizard interface has two main components - the left menu and the main area. The left menu lists the steps that must be performed to successfully install an application. The main area displays (and asks for) the specific information needed to complete the step (or substep) selected in the left menu. Throughout the wizard, icons are used to direct the user between steps (and substeps) and draw attention to incomplete steps.

The following table describes the steps (and substeps) in the Application Installer wizard’s left menu, and the corresponding information displayed (and asked for) in the main area:





Table 4-1 Left menu options

Menu Option	Main Area
Define Application > Choose Application	Displays fields that define the application name, type, and database vendor.
Define Application > Add Tiers	Displays the current application structure. For more information, see Configuring application types .
Install Tiers > <Tier Name> (According to the application type, the included Tier technologies appear as sub-options)	Displays the information necessary to install instances or clusters on the selected Tier, as well as information regarding previously installed instances and, when relevant, recommended instances.

Menu Option	Main Area
Install Infrastructure > <Tier Name>	Displays the information necessary to install instances or clusters on the selected Tier, as well as information regarding previously installed instances and, when relevant, recommended instances.
Execute Action Items > Action Items	Displays all pending action items for the instances and clusters installed in the application.
Customize Application > SLA (According to the application type, the settings that can be defined per instance in the application appear as sub-options)	Displays the instances that the SLA setting can be defined and modified for.
Customize Application > Locations	Displays the instances that the Locations setting can be defined and modified for.

The following table describes the icons used in the Precise Application Installer wizard.

Table 4-2 Icons used in the Precise Application Installer wizard

Icon	Description
	Installed
	No instances installed
	Installation recommendation for this tier
	Pending Action Item

Working with the Application Installer wizard

The Application Installer wizard contains the various steps included in the application setup process. Navigate through the wizard using the **Back** and **Next** buttons in the main area, or select the desired step or substep in the left menu. It is recommended to follow the steps as they are presented, using the **Back** and **Next** buttons.

 Some steps or substeps are only enabled once previous steps have been completed.

Launching the Application Installer wizard

To launch the Application Installer wizard

1. Log in to Precise.

i To install or edit an application, you must have ADMINISTRATE.INSTALL permission on this application.

2. Go to AdminPoint>Setup>Applications.
3. Click **Add**. The Application Installer wizard launches.

Defining a new application

The Applications Installer wizard opens on the Applications Selection screen. On this screen you define the application name, type and database. To define a new Precise application

1. In the Application Name field, enter the name of the new application.
2. From the Application Type drop-down menu, select the desired application type. The application map appears on the screen.

i Tiers can be added to the application types included in this menu. To add Tiers, mark the “Add Tiers to this application” check box. For more information, see [Configuring application types](#).

3. From the Database Vendor drop-down menu, select the desired database for the application. The Database Tier in the application map changes to reflect your selection.
4. Click **Next**. The Install Tier Instances screen appears.

i If the “Add Tiers to this application” check box is marked, the Add Tiers screen appears. For more information, see [Configuring application types](#).

Installing instances and clusters on the application’s Tiers

After defining the application type, instances and clusters must be installed on the Tiers. The Application Installer wizard automatically asks to define instances or clusters for the Tiers in the order that they appear in the left menu bar.

To install instances or clusters for a specific Tier

1. Select the Tier from the left menu bar.
2. Select the desired option. The relevant instance installer appears:
 - **Add a new instance.** If the instance you want to install has not yet been installed in the Precise Framework, click **Add** to launch the technology-specific Add New Instance dialog box.

i Some technologies ask if you want to install an instance or a cluster. For more information on these terms, and a full description of the installation process for all available technologies, see the section for the specific technology in the [Precise Installation Guide](#).

- **Add an existing instance.** If the instance you want to install is already installed in the Precise Framework, select **Add Existing** from the drop-down “Add” menu. A list of the existing instances installed on the Precise Framework appears. Select the desired instance and click **Install**.
- **Install a recommended instance.** Once an instance is installed in a Precise application, all instances installed in the Precise Framework are scanned, and (when applicable), to optimize the application’s monitoring abilities, Precise recommends instances from different technologies be installed in the application.

Executing action items

After installing instances and clusters, the Action Items screen appears, listing any pending action items. To execute pending action items

1. Select the action item in the table. The action item becomes highlighted.
2. Click **Execute** to automatically perform the action item, or **Mark as Done** to continue without performing the action item. Alternatively click **Next** to complete these action items at a later stage.

Customizing instance settings

The Application Installer wizard's SLA and Locations screens enable you to define instance-specific settings. The definitions set on this screen apply to that instance in all its occurrences in all applications in the Precise Framework. To define instance-specific settings

1. Select the setting you wish to define from the left menu bar, or click **Back** and **Next** until that screen appears.
2. From the instance table, select the instance you wish to define the setting for.
3. Click **Edit**. The setting-specific dialog box appears.

For more information regarding the specific setting, see the Configuring AdminPoint settings section in the *Precise Administration Guide*.

Configuring application types

The Precise Application Installer offers a number of predefined application types. These application types appear in the Application Type drop-down menu on the Application Selection screen. All application types that appear in the drop-down menu can have Tiers and data flow connections added to them, according to your application's specific needs.

i Modifications to the predefined application types can only add to, and not remove from, the existing Tiers and data flow connections. To create an application type with less than the predefined Tiers and data flow connections, select the "User Defined" option from the Application Type drop-down menu and click Next to launch the Add Tiers screen.

Using the Add Tiers screen, you can add Tiers to the application, add data flow connections between Tiers, rename the added Tiers, and save the modified application for future use as an application type offered in the Application Selection screen. The configuration procedure below describes the complete flow of all these steps. If you are only performing some of the modifications, follow the relevant steps only, as described.

To modify an existing application type

1. On the Applications Selection screen, mark the "Add Tiers to this application".
2. Click **Next**. The Add Tiers screen appears, featuring a current map of the application.
3. To add a Tier, click the **New Tier** button and select the desired Tier type from the drop-down menu. A Tier of that type appears in the top left corner of the application map.
4. To give the Tier a user-defined name, click on the Tier technology name. A box appears around the technology name and it is highlighted in blue.
5. Enter the name you wish to call the Tier.
6. Press **Enter** or click outside of the Tier name box.
7. Click on the Tier and drag it to the appropriate point on the application map.
8. To define data flow between Tiers, click on the Connect button, and then click on the Tier that the data should flow from. A dynamic arrow appears, showing the connection between the selected Tier and the other Tier, according to the location of the mouse.

9. Click on the Tier that the data should flow to. The arrow sets, showing the connection between the two selected Tiers and the data flow direction.
10. To save the modified application for future use as an application type option, click the **Save** button. A dialog box appears.
11. In the Type Name field, enter a name for the modified application.
12. Click **OK**. The application option is now included in the Application Type drop-down menu on the Applications Selection screen.
13. Click **Next** to continue to the Install Tiers Instances screen.

Configuring application types

The Precise Application Installer offers a number of predefined application types. These application types appear in the Application Type drop-down menu on the Application Selection screen. All application types that appear in the drop-down menu can have Tiers and data flow connections added to them, according to your application's specific needs.

i Modifications to the predefined application types can only add to, and not remove from, the existing Tiers and data flow connections. To create an application type with less than the predefined Tiers and data flow connections, select the "User Defined" option from the Application Type drop-down menu and click Next to launch the Add Tiers screen.

Using the Add Tiers screen, you can add Tiers to the application, add data flow connections between Tiers, rename the added Tiers, and save the modified application for future use as an application type offered in the Application Selection screen. The configuration procedure below describes the complete flow of all these steps. If you are only performing some of the modifications, follow the relevant steps only, as described.

To modify an existing application type

1. On the Applications Selection screen, mark the "Add Tiers to this application".
2. Click **Next**. The Add Tiers screen appears, featuring a current map of the application.
3. To add a Tier, click the **New Tier** button and select the desired Tier type from the drop-down menu. A Tier of that type appears in the top left corner of the application map.
4. To give the Tier a user-defined name, click on the Tier technology name. A box appears around the technology name and it is highlighted in blue.
5. Enter the name you wish to call the Tier.
6. Press **Enter** or click outside of the Tier name box.
7. Click on the Tier and drag it to the appropriate point on the application map.
8. To define data flow between Tiers, click on the Connect button, and then click on the Tier that the data should flow from. A dynamic arrow appears, showing the connection between the selected Tier and the other Tier, according to the location of the mouse.
9. Click on the Tier that the data should flow to. The arrow sets, showing the connection between the two selected Tiers and the data flow direction.
10. To save the modified application for future use as an application type option, click the **Save** button. A dialog box appears.
11. In the Type Name field, enter a name for the modified application.
12. Click **OK**. The application option is now included in the Application Type drop-down menu on the Applications Selection screen.
13. Click **Next** to continue to the Install Tiers Instances screen.

Adding servers

This section includes the following topics:

- [Pre-installation tasks](#)
- [Adding a new server](#)
- [Post-installation action items](#)

Pre-installation tasks

Precise installer displays a series of screens. Most of the screens require you to input details regarding your information systems. Before defining server installation options, compile a list of all required user inputs based on the information below.

Before you define servers and install the Listener agents, verify that you have completed the following:

- Install Precise framework
- Check that the servers fulfill the Precise requirements as described in the Minimum Requirements document.
- Create a Precise user for each UNIX server.
- Close the Services window in the Control Panel if you are installing on a Windows server.

Common pre-installation tasks on Windows

You must perform the following pre-installation tasks regardless of the Precise components you intend to install. To perform common pre-installation tasks on Windows:

- Verify that the port of the NetBios is opened, if you want to monitor an instance remotely and you have a firewall between the local and remote servers.
- Create a user that has at least the privileges described in the privileges table, if you work with MS SQL Server and you are not using the local system user when installing Precise.

Table 6-1 Privileges

Goal	Privilege
Local policies	Act as part of the operating system Bypass traverse checking Deny login locally Increase quotas Lock pages in memory Log in as a batch job Log in as a service Profile single process Profile system performance Replace process level token
File system	Full control over <precise_root> folder Read access to the following files: <ul style="list-style-type: none"> • windir\system32\PERFCxxx.DAT • windir\system32\PERFHxxx.DAT Full access to the following local folder: C:\Program Files\Microsoft SQL Server\MSSQL\

Goal	Privilege
Windows registry	<p>Full access to the following entry:</p> <ul style="list-style-type: none"> • HKEY_LOCAL_MACHINE\Software\PreciseSoftware Solutions • HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\SecurePipeServers\winreg • HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services <p>Read access to the following entry:</p> <p>HKEY_LOCAL_MACHINE\Software\Microsoft\Windows NT\CurrentVersion\Perflib</p>
Services privileges	Using <code>sc.exe</code> from the Windows resource kit, grant the same permissions of PU for the Precise user on the services.
MS SQL	System Administrator


Common pre-installation tasks on UNIX

You must perform the following pre-installation tasks regardless of the Precise components you intend to install.

To perform common pre-installation tasks on UNIX:

1. Create a software owner account with the following characteristics:
 - Password, other than NULL
 - Authorization to use the cron facility (only required if you intend to install an Oracle Tier Collector on the respective server)
 - On Linux, read and write permissions to the `/dev/null` special file
 - On Linux, install ksh. Unless you have purchased the AT&T version of ksh, you must download `pdkskh`, a korn shell clone in the public domain. If you have Red Hat, you can download the Intel version of `pdkskh` from the Red Hat Web site. For other Linux distributions and platforms, search for “`pdkskh`” at: <http://rpmfind.net/linux/rpm2html/search.php?query=pdkskh>
 - The Precise user must have a `.` (dot) in his Path variable
2. Check and perform, if applicable, the following:
 - If you use an HP-UX server, verify that the operating system updates that are required for Java Runtime Environment 1.6 are installed on it. For information on available updates, go to: <http://docs.hp.com/en/HPUXJAVAPATCHES/index.html>.
 - Verify that the user limits are as specified in the list or higher (the user limit can be changed and configured using the `ulimit` command):
 - time (seconds) unlimited
 - file (blocks) unlimited
 - data (kbytes) unlimited
3. If you use Linux 64 bits OS, install the Linux OS update to add support for running 32-bits applications. This update is referred to as the `x86-compat-libs` patch. You can install this update or any superseding update.

Adding a new server

 To install a Precise Listener on a Windows server, you must access it using a local administrator account.


To add a new server:

1. When installing a Tier instance, next to the Server with the Tier instance textbox, click **Add**.
2. Enter the server name or IP address for the server where you want to install the Precise Listener.
3. Enter the server type (Windows or UNIX) where you want to install the Precise Listener. This information determines the installation tasks to be performed.
4. Click **Next**.

Windows

If you selected Windows as the server type, follow these steps:


1. Select “Automatic Installation”.
2. Select either:
 - “Use current credentials”
 - “Change credentials”
3. If you selected “Change credentials”, follow these steps:
 - a. Enter user name with administrator privileges.
 - b. Enter the password for the Windows user.
 - c. Enter the domain or machine name in or on which the user account was created.
 - d. Enter the installation folder for the Precise Listener. This folder is also used for any other Precise component that you install on that server. To browse for an installation folder, click the **browse (...)** button. The name of the installation folder cannot contain foreign language characters. It should use English characters only.
4. Click **Next**.

 If you experience difficulty adding a server with automatic mode, you might need to use the manual mode. For more information, see [Adding a Windows server using manual mode](#).

UNIX

If you selected UNIX as the server type, follow these steps

1. Select “Automatic Installation”.
2. Enter the UNIX Precise-user name (which you created before).
3. Enter the password for the UNIX user.
4. Enter the installation folder for the Precise Listener. This folder is also used for any other Precise component that you install on that server. To browse for an installation folder, click the **browse (...)** button. The name of the installation folder cannot contain foreign language characters. It should be in English only.
5. Click **Next**.

 If you experience difficulty adding a server with automatic mode, you might need to use the manual mode. For more information, see [Adding a UNIX server using manual mode](#).

Preview screen

This screen displays a summary of all information.

Installation Progress

This screen displays the installation progress.

Post-installation action items

Perform any action items that are indicated on the action items screen. If you are using a UNIX server, you have the option to add Precise startup to your machine startup.

Successful installation

The installation was completed successfully.

Advanced adding servers


This section includes the following topics:

- [Configuring a Listener to listen to a different port](#)
- [Configuring a Precise Listener to use communication relay](#)
- [Configuring a Precise agent to use a specific user account \(Windows\)](#)
- [Configuring multiple Listeners on the same server \(Windows\)](#)
- [Securing communication key transfer to a new server](#)
- [Binding a Precise Listener to a specific server address](#)
- [Adding a Windows server using manual mode](#)
- [Adding a UNIX server using manual mode](#)
- [Enabling auto deployment](#)

Configuring a Listener to listen to a different port

To configure a Listener agent to listen to a different port

1. Click **Advanced**. The “Add Server Advanced” dialog box opens.
2. Enter a different port number in the Port number field (Default Port Number: 20702).
3. Click **OK**.


 You can specify a Listener port only during the server installation. To change a port of an already installed Listener, see the [Precise CLI Utilities Reference Guide](#).

Configuring a Precise Listener to use communication relay

By default Precise initiates communications from the Precise FocalPoint to the server, and from the server to the Precise FocalPoint. In case you need to restrict communication to use only "Precise FocalPoint to the server" direction, you can configure the listener to use communication relay.

To configure the Precise listener to use communication relay

1. Click **Advanced**. The “Add Server Advanced” dialog box opens.
2. Check the box for “This server should use communication relay”.
3. Click **OK**.

 You can specify relay settings only during the server installation. To change a relay setting of a previously installed listener, see the CLI documentation.

Configuring a Precise agent to use a specific user account (Windows)

On a Windows server, by default the Precise agents are using the local system user account. You can configure a Precise agent to use a specific user account. This can be set only when installing the server. For more information, see [About secured Precise systems](#).

To configure a Precise agent to use a specific user account

1. Click **Advanced**. The “Add Server Advanced” dialog box opens.
2. Mark the “Use different Windows Service credentials than the default LocalSystem account” box.
3. Enter a user name with administrator privileges. If you work with the MS SQL Server, the Windows user should have a defined set of privileges.
4. Enter the user password.

5. Enter the domain or machine name in or on which the user account was created.
6. Click **OK**.

Configuring multiple Listeners on the same server (Windows)

i To configure multiple Listeners, you must also configure the Listener to listen to a different port. For more information, see [Configuring a Listener to listen to a different port](#). If you want to install additional Listeners on the same server (for example in cluster applications), verify that each new Listener is given a different port number, and different Unique ID.

To configure multiple listeners on the same server

1. Click **Advanced**. The “Add Server Advanced” dialog box opens.
2. Check the box for “Multiple Listeners”.
3. Enter a Unique ID. The unique name is added as a suffix to the names of all Precise services, so that you can install several Precise Listeners.
4. Click **OK**.

Securing communication key transfer to a new server

i Secure Server installation ensures that the Precise communication key is not transferred as clear text over the communication. When using secure server, you will be required to use secure network protocols such as SSH and SCP for UNIX servers and Manual mode for adding Windows servers.

To secure communication key transfer to a new server

1. Click **Advanced**. The “Add Server Advanced” dialog box opens.
2. Check the box for “Secured server installation”.
3. Click **OK**, and proceed with the server installation.

Binding a Precise Listener to a specific server address

By default, the Precise Listener is bound to all addresses for the specified port. To bind a specific server address, specify this address in the server name field and configure the Precise Listener to bind to this address.

To bind the Precise Listener to a specific address

1. Click **Advanced**. The "Add Server Advanced" dialog box opens.
2. Mark the "Bind the Precise Listener to the specified server address" check box.
3. Click **OK**.

Adding a Windows server using manual mode

i Perform a manual installation only if your Windows server does not allow a remote installation, or if you need secured communication key transfer, or if there are communication issues using automatic installation mode.

To add a Windows server using manual mode

1. Select “Manual Installation” and click **Next**.

2. In the Add Server dialog box, perform the following steps (as they appear in the dialog box):
 - a. Specify a password to encrypt your configuration (you will have to use this password on the installed server).

i This step only appears if the “Secured server installation” check box in the ‘Advanced’ screen in marked. For more information, see [Securing communication key transfer to a new server](#).

- b. Specify a local directory to temporarily save the installation and configuration files, and click **Save Files**.
- c. Log in to the Windows server as the user who will own the Precise installation.
- d. Copy the Precise Listener agent installation and configuration files – `psin_ba_WIN.exe` and `setup.xml` – to the Precise installation directory and verify that it has execution privileges.
- e. Double-click the `psin_ba_WIN.exe` file to run the Precise Listener installation file on the Windows server.
- f. Run the following command from the `<Precise_root>` directory on the Windows server:
`infra\bin\psin_infra.exe -manual-extricate-crypt <password>`

i Replace `<password>` with the password specified in step a.

3. Click **Next**.

Adding a UNIX server using manual mode

i Perform a manual installation only if your UNIX server does not have Telnet/SSH/SCP communication or if there are communication issues using automatic installation mode.

To add a UNIX server using manual mode

1. Select “Manual Installation” and click **Next**.
2. Specify the UNIX server type (referred to as the UNIX flavor). Precise Framework Installer has a different Precise Listener agent installation file for each supported UNIX server type. To copy the appropriate file, you must first select the UNIX flavor type.
3. In the New Server (UNIX without Telnet) dialog box, specify an installation folder on the local PC. This folder is required only to copy the installation file from the Precise download or the DVD to the local machine.
4. In the New Server (UNIX without Telnet) dialog box, click Save File to copy the Precise Listener agent installation file and listener ports file to the local folder that you specified in Step 3.
5. Copy the Precise Listener agent installation file to the server where you want to install the Precise Listener agent. Verify that you have previously defined a Precise UNIX user to be the owner of the Precise installation folder. It is recommended to create a special folder for Precise use and transfer the file to that folder. The folder to which you copy the installation file in this step is the folder that Precise will use for all product installations on this server.
6. Click **Next**.
7. On the server, verify that the `psin_ba_UNIX-FLAVOR` has executable permissions and run the `psin_ba_unix-flavor` installation file. Once the installation file script is executed, the Precise Listener agent on the server is started.
8. If secured server installation is checked, run the following command from the Precise `<precise_root>` folder:
`./infra/bin/psin_infra -manual-extricate-crypt <password>`
 The `<password>` should be replaced with the key you supplied in the Advanced Settings dialog box parameters.
9. On the installer GUI, click Listener agent running. Precise Installer is now trying to communicate with the Precise Listener agent on the target server.
10. Click **Next**.

Enabling auto deployment

To enable auto deployment for Virtual Machines, see the Auto Deployment section the the [Precise CLI Utility Reference Guide](#).


Installing instances and clusters

This topic includes the following sub-topics:

- [Adding a new instance](#)
- [Installing a cluster](#)

Adding a new instance

On the Display Instances and Clusters screen in AdminPoint, you can add a new instance.

 Before adding an instance, create a list of all required inputs based on the screen information below.

To add an instance

1. From StartPoint, click the AdminPoint tab.
2. Click the Setup tab.
3. From the drop-down menu, select **Instances & Clusters**.
4. Click the All instances tree item.
5. At the bottom of the Display Instances & Clusters screen, click **Add Instance**. An Add New Instance dialog box appears.
6. Select the required technology from the list.
7. Select the application from the list. If the desired application is not on the list, follow the procedures in the topic, Working with the Application Installer wizard.
8. Select a Tier from the list.
9. Click **OK** to view the next screen.

 Always refresh AdminPoint after adding an instance.

Installing a cluster

Configuring a cluster is supported for Oracle RAC (Real Application Clusters), J2EE (all supported technologies), and Web (for WebSphere and WebLogic).

Adding a new cluster

You can add a cluster via the Cluster Settings dialog box.

To add a cluster

1. From StartPoint, click the AdminPoint tab.
2. Click the Setup tab.
3. From the drop-down menu, select **Instances & Clusters**.
4. Click the All clusters tree item.
5. At the bottom of the Display Instances and Clusters screen, click **Add Cluster**. An Add New Cluster dialog box appears.
6. Select the required technology from the list.
7. Select the application from the list. If the desired application is not on the list, follow the procedures in the topic, Working with the Application Installer wizard.
8. Select a Tier from the list.
9. Click **OK** to view the next screen.

 Always refresh AdminPoint after adding a cluster.

For more information about how to install a cluster, see [Installing an Oracle cluster](#), [Installing a J2EE cluster](#), and [Installing a Web cluster](#).

Installing Web tier collectors

This section includes the following topics:

- [Installation types](#)
- [Application architecture and Precise for Web configuration](#)
- [Pre-installation tasks](#)
- [Installing a Web Tier instance](#)
- [Installing a Web cluster](#)
- [Post-installation action items](#)

i If you intend to use an SAP scenario in which you monitor access via Web, then you need to perform the installation of the Precise for Web Tier too! However for some of the most common SAP scenarios, including SAP GUI Windows client access to SAP ERP and Precise for BW ETL process chain scenarios, the installation of the Precise for Web Tier is not needed.

Installation types

Before beginning the installation process, review the instances you want to install and choose the most applicable type of installation per your needs.

Web instances can be installed in either of the following ways:

- **Standalone Installation.** Standalone installation enables you to install a single instance and define the instance name and configuration. This instance is not connected to or affected by any other instance configuration. After completing the pre-installation tasks, see [Installing a Web Tier instance](#).
- **Cluster Installation (for WebLogic and WebSphere only).** Cluster installation defines the configuration parameters for a group of instances in a central location. When installing a Web cluster, an action item is generated to include a filter within the application. All Web servers that will deploy the application will be installed automatically as instances in the cluster.

Each instance in the cluster is given a name that includes both the user defined cluster name and an automatically generated unique identifier.

It is recommended to install a cluster when the following conditions apply:

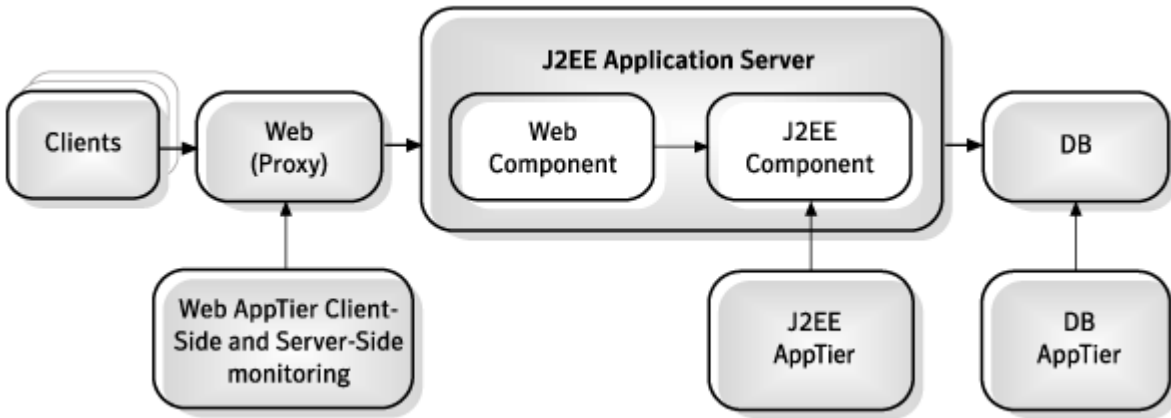
- The application is deployed on more than one JVM, using the same source.
- The source application WAR file can be configured to use Web agents before it is redeployed to all JVMs.
- There is no need for specific, user-defined instance names.

After completing the pre-installation tasks, see [Installing a Web cluster](#).

Application architecture and Precise for Web configuration

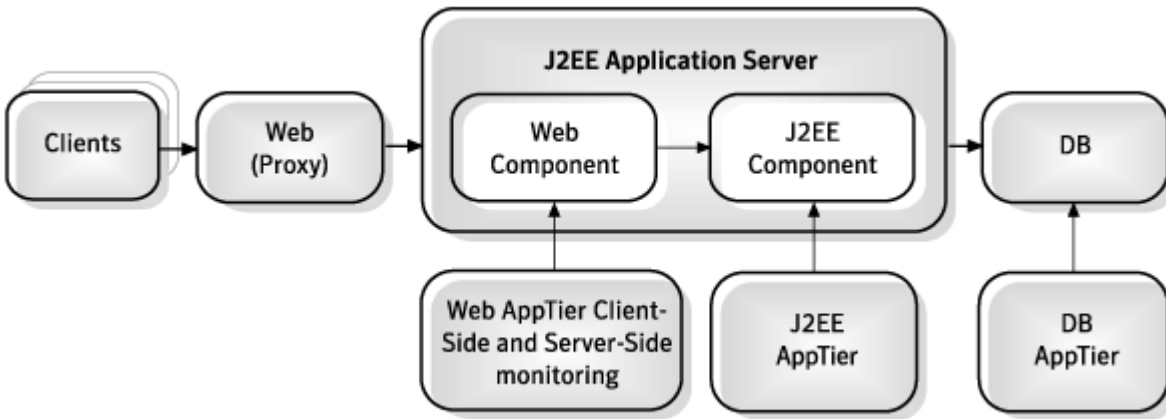
When using Apache 2.0 and higher, or IIS, as a proxy to J2EE application servers, it is recommended to install client-side and server-side on the proxy tier and not on the J2EE application server. If you need to install Precise for Web on the J2EE application server, only install the server-side and not client-side collection on the J2EE tier.

Figure 1 Web client-side and server-side monitoring when using Apache 2.0 and higher, or IIS, as a proxy



When using Apache 1.3 or iPlanet as a proxy to J2EE application servers, it is recommended to install both server-side and client-side collection on J2EE application servers.

Figure 2 Web client-side and server-side monitoring when using Apache 1.3 or iPlanet as a proxy



Pre-installation tasks

Most of the screens for this installation require you to input details regarding your information systems. Before performing this installation, compile a list of all required user inputs based on the procedures below.

Pre-installation tasks for the Web Tier

Before you install a Web Tier, you need to grant special file and folder permissions (including all subdirectories) to the UNIX or Windows user that you intend to use during the installation.

The permissions in the general collection table on UNIX are not needed for the ongoing operation, only for installation. Auto-detected values will be shown. If this user does not have these permissions during installation you do not see these auto-detected values and you will have to supply them manually.

The Operating System user that runs the Web Server or Web Application should have full control privileges for the < *precise_root* > folder (for example: user ASPNET for IIS5 or user NETWORK SERVICE for IIS6).

The following table lists the permissions that are required for general collection on UNIX.

Table 1 Permissions for the general collection on UNIX

Web Server	File or Folder	Required Permission
iPlanet	<i>site name/config</i>	RX (X for all subdirectories)
iPlanet	<i>site name/config/ server.xml</i>	R
Apache	configuration directories (typically: apache root/config) and subdirectories	RX (X for all subdirectories)
Apache	configuration files (typically: httpd.conf)	RX
WebLogic	Server installation folder (<i>WL root</i>)	RX (X for all subdirectories)
WebLogic	<i>WL root/site name</i>	RX (X for all subdirectories)
WebLogic	<i>WL root/site name/ config.xml</i>	R
WebSphere	<i>WL root/properties/ version/platform.websphere</i> and <i>WS root/properties/ version/WAS.product</i>	R
WebSphere	Node folder and all subdirectories such as, <i>.../cells/cell1/nodes/node1</i>	RX
WebSphere	Node serverindex.xml and server.xml files such as <i>.../cells/cell1/ nodes/node1/serverindex.xml</i> and <i>.../cells/cell1/nodes/ node1/servers/server1/ server.xml</i>	R
Oracle Applications Server	<i>OC root/inventory/ ContentsXML/configtools.xml</i>	R

Web Server	File or Folder	Required Permission
Tomcat	Configuration folder (typically: <i>tomcat root/config</i>) and all subdirectories	RX
Tomcat	<i>server.xml</i> file (typically: <i>tomcat root/conf</i>)	R
Sun ONE	Configuration folder (typically: <i>sunone root/domains/domain1/config</i>) and all its subdirectories	RX
Sun ONE	<i>domain.xml</i> file (typically: <i>sunone root/domains/domain1/config</i>)	R
Oracle Applications Server OPMN	Configuration folder (typically: <i>oracle as root/opmn/conf</i>) and all subdirectories	RX
Oracle Applications Server Apache	Configuration folder (typically: <i>oracle as root/Apache/conf</i>) and all subdirectories	RX
Oracle Applications Server OPMN	Configuration files (typically: <i>oracle as root/opmn/conf/opmn.xml</i>) and all subdirectories	R
Oracle Applications Server Apache	Configuration files (typically: <i>oracle as root/Apache/conf/*.conf</i>) and all subdirectories	R

The following table lists the permissions that are required for the general collection on Windows.

Table 2 Permissions for the general collection on Windows

Web Server	File or Folder	Required Permissions
iPlanet	<i>site name/config</i>	Read + List Folder Contents
iPlanet	<i>site name/config/server.xml</i>	Read
Apache	Configuration directories (typically: <i>apache root\conf</i>)	List Folder Contents

Web Server	File or Folder	Required Permissions
Apache	Configuration files (typically: httpd.conf)	Read
WebLogic	Server installation folder	List Folder Contents
WebLogic	<i>WL root\site name</i>	List Folder Contents
WebLogic	<i>WL root\site name\config.xml</i>	Read
WebSphere	Node folder and all subdirectories such as, ... \cells\cell1\nodes\node1	List Folder Contents
WebSphere	Node server index.xml and server.xml files such as ... \cells\cell1\nodes\node1\serverindex.xml and ... \cells\cell1\nodes\node1\servers\server1\server.xml	Read
Tomcat	Configuration folder (typically: <i>tomcat root\conf</i>) and all subdirectories	List Folder Contents
Tomcat	server.xml file (typically: <i>tomcat root\conf</i>)	Read
Sun ONE	Configuration folder (typically: <i>sunone root\domains\domain1\config</i>) and all subdirectories	List Folder Contents
Sun ONE	domain.xml file (typically: <i>sunone root\domains\domain1\config</i>) and all subdirectories	Read
Oracle Applications Server OPMN	Configuration folder (typically: <i>oracle as root\opmn\conf</i>) and all subdirectories	List Folder Contents
Oracle Applications Server Apache	Configuration folder (typically: <i>oracle as root\Apache\conf</i>) and all subdirectories	List Folder Contents

Web Server	File or Folder	Required Permissions
Oracle Applications Server OPMN	Configuration files (typically: <i>oracle as root\opmn\conf\opmn.xml</i>) and all subdirectories	Read
Oracle Applications Server Apache	Configuration files (typically: <i>oracle as root\Apache\conf*.conf</i>) and all subdirectories	Read

Pre-installation tasks for IIS

To install a Web instance on IIS7.x, the “IIS6 Metabase Compatibility” service and “ISAPI filters” must be installed.

To enable IIS6 Metabase Compatibility and ISAPI filters on Windows 2008

1. Go to Start>Control Panel>Programs>Programs and Features.
2. On the left Side Bar select **Turn Windows features on or off**.
3. Go to Roles'Web Server(IIS), click **Add Role Services** and select the following:
 - a. IIS6 Metabase Compatibility under IIS 6 Management Compatibility.
 - b. ISAPI filters under Application Development.
 - c. ISAPI Extension, if you want to collect post-parameters
4. Click **Next** and follow instructions on screen.

To enable IIS6 Metabase Compatibility on Windows Vista or Windows 7

1. Go to Start>Control Panel>Programs>Programs and Features.
2. On the left Side Bar select **Turn Windows features on or off**.
3. Wait for the Windows Features dialog box to open and fill, then expand "Internet Information Services".
4. Select the IIS 6 Metabase Compatibility service under IIS 6 Management Compatibility.
5. Click **OK**.

Pre-installation tasks for WebLogic, WebSphere, Tomcat, and Sun One (J2EE stack)

At the end of the installation you will need to provide the path to the application file you wish to monitor (.EAR, .WAR, or web.xml file of the application).

For more information, consult with your Web Administrator.

Installing a Web Tier instance

This section describes the procedures needed to install a Web Tier instance. Before installing the instance verify that the type of installation best suits your needs. You have the option of adding a new instance, as well as adding a new application. For information on editing or removing an existing instance, see [Editing or removing tier instances or clusters](#).

Adding a Web Tier instance

On the AdminPoint Instances screen, you can add a new Tier instance.

i Before adding a Tier instance, create a list of all required inputs based on the screen information below.

To add a Tier instance

1. From StartPoint, click the AdminPoint tab.
2. Click the Setup tab.
3. From the drop-down menu, select **Instances & Clusters**.
4. Click the **All instances** tree item.
5. At the bottom of the Display Instances & Clusters screen, click **Add Instance**. An Add New Instance dialog box appears.
6. Select the required technology from the list.
7. Select the application from the list. If the desired application is not on the list, use the following steps:
 - a. Click **Add**.
 - b. In the Application Name field, type in the new application name.
 - c. In the Application System field, select the system application from the list.
 - d. Click **OK**.

i To install an instance in an application, you must have ADMINISTRATE.INSTALL permission for the application in which you want to install the instance. If you only have permission for a specific technology, you will only be able to install in an application that is either empty, or is comprised of only the same technology.

8. Select a Tier from the list.
9. Click **OK** to view the next screen.

i Always refresh AdminPoint after adding an instance.

Defining Web property settings

To define the Web Tier property settings, you must first select which Web server type you want to monitor, as well as its location.

To select the Web server type and its location

1. Select one of the following Web server types, from the drop-down menu:
 - IIS (Microsoft)
 - Apache
 - iPlanet (Sun)
 - WebLogic (Oracle)
 - WebSphere (IBM)
 - Tomcat (Apache)
 - Sun One
 - Oracle AS
 - SAP WAS J2EE
 - Other J2EE

i The options Apache, SAP WAS J2EE, Sun iPlanet, Oracle 10g Application Server, Sun ONE, and other J2EE Web servers are supported, but currently without Web server statistics. Client-side instrumentation is not supported by Sun iPlanet and Apache 1.3.

2. Select the server where the Web server instance is located, from the drop-down menu. Click Add to enter the name of a server not on the list. For more information, see [Adding a new server](#).

i This is the name or IP address of the server where you want to install the Web Tier Collector with a specific operating system. The server name or IP address appears in the list only if you previously defined it as a Precise server. If using Microsoft IIS, you cannot install on a UNIX platform.

3. Click **Next**.

The next installation screen will be dependent upon which Web server type has been selected. Click the relevant link below to view the installation procedure for the selected Web server:

- [Defining a Microsoft IIS Tier instance](#)
- [Defining one of the following instances: Apache, iPlanet, Sun ONE, SAP WAS J2EE, Other J2EE, or Tomcat](#)
- [Defining an Oracle 10g Application Server instance](#)

Defining a Microsoft IIS Tier instance

To define a Microsoft IIS Tier instance

1. Select one of the following Microsoft IIS versions from the drop-down menu:
 - 6.x
 - 7.x

i If the IIS version or Web site name (next step) is not auto-detected, enter it manually.

2. Select the Detected Web site name from the drop-down menu.
3. Select the Application type (Web or Siebel) from the drop-down menu.
4. Select the Application version (Siebel version 7.5- 7.8) from the drop-down menu. This textbox is grayed-out when Web is chosen.
5. Enter the Instance name. Use a free-text identifier to distinguish between multiple, monitored Web sites.
6. *OPTIONAL*: Mark the box “Allow internet information service restart”.

i If you don't mark the box, post-installation actions will be required.


7. Click **Next**.

Defining one of the following instances: Apache, iPlanet, Sun ONE, SAP WAS J2EE, Other J2EE, or Tomcat

i A Web site configuration file is mandatory for Sun iPlanet and Apache servers, but is optional for other servers. During installation, the Web site configuration file is editable. If it's not inserted, you will have to enter Web server listening ports manually on the next screen (Domain Information).

To define one of the above instances

1. Select the Web site from the drop-down menu.
The fields for a WebLogic, WebSphere, and Apache Web server will be auto-detected and populated when you select one of the auto-discovered Web sites in the Detected Web sites list.
The following information is shown:
 - **Apache**. The full path of the configuration file.


 The auto-detection mechanism is limited in different ways, depending on whether Apache is on a Windows or UNIX server. On Windows, the detection is based on the services list. Therefore, Apache will not be detected if it is not defined as a service. On UNIX, the detection is based on running processes. The Web server version is not detected if the Precise user does not have execute permission on the Apache executable (HTTPD).

2. Enter the Web site configuration file. To browse for the appropriate folder and file, click the **browse (...)** button.

This input is required for Apache and Sun iPlanet. For all other web servers, it is recommended to manually enter the value to optimize the installation process. If however, the value is unavailable, the field can be left blank.

The following values are auto-detected:

- **Apache.** The full path and name of the main configuration file (for example:
C:\WebServers\Apache\Apache13\conf\httpd.conf
For Apache that serves Oracle applications:
/rac_shared/env/app1/apps/tech_st/10.1.3/Apache/Apache/conf/httpd.conf
or
/rac_shared/env/inst/apps/VIS_pool-linux-rac-1/ora/10.1.3/Apache/Apache/conf/httpd.conf)
- **Sun One or Sun iPlanet.** The full path to the server.xml file of a specific server on a specific node in a specific cell (for example: c:\WebServers\Sun\WebServer6.1\https-admserv\config\server.xml).
- **Tomcat.** The full path to the server.xml file (for example: c:\WebServers\Tomcat\conf\server.xml).

 If the auto-detected value is incorrect, you can change it manually.

3. Select the Web server version from the drop-down menu.
Normally the Tier installer will auto-detect and display the Web server version in this field. If the Web server version is not auto-detected, or incorrect, enter the inputs manually.
Select one of the following Web server version options from the list:
 - Apache: 1.3.x, 2.0.x, or 2.2.x
 - Sun One: 6.1
 - Apache Tomcat 5.x, 6.x
 - Sun iPlanet 6.0
4. Select the appropriate Web Server bits from the drop-down menu.
This input is required only when using Apache or Sun iPlanet. For other Web servers, this input field is grayed-out. Normally the Tier installer will auto-detect and display the Web server bits in this field.
If the Web server bit number is not auto-detected, or incorrect, enter the bit number manually. Select one of the following Web server bit numbers from the list:
 - 32
 - 64
5. Select the application type from the drop-down menu.
This is the application served by this Web server site. This information enables better configuration of the Web Tier Collectors. The following options are available:
 - Web (default)
 - Siebel
 - PeopleSoft
 - Oracle Applications
6. Select the application version from the drop-down menu.
This is the version of the application server chosen in the previous field. Select an application server version:

- Siebel 7.7-8.1.1
 - PeopleSoft 8.44-8.50
7. Enter the instance name. Use a free-text identifier to distinguish between multiple, monitored Web sites.
 8. Click **Next**.

Defining one of the following instances: WebSphere or WebLogic

i A Web site configuration file is optional for WebSphere and WebLogic. During installation, the Web site configuration file is editable. If it's not inserted, you will have to enter Web server listening ports manually on the next screen (Domain Information).

To define one of the above instances

1. Select the Web site from the drop-down menu.
The fields for a WebLogic and WebSphere will be auto-detected and populated when you select one of the auto-discovered Web sites in the Detected Web sites list.
The following information is shown:
 - **WebLogic**. The server name (if it exists) or full path of the configuration file.
 - **WebSphere**. The server name attribute from the server.xml file, or the full path of the configuration file.

i However, instances that are installed as Windows services will not be detected whether they are running or not. On UNIX, in most configurations of HP, Linux, Sun, and AIX prior to version 5.3 patch 5, the Web servers may be partially detected or not detected at all.

2. Enter the Web site configuration file. To browse for the appropriate folder and file, click the **browse (...)** button.

For non-cluster installations, it is recommended to manually enter the value to optimize the installation process. If however, the value is unavailable, the field can be left blank. For cluster installations, this is ignored.

The following values are auto-detected:

- **WebLogic**. The full path and name of the config.xml file (for example:
c:\WebServers\bea\weblogic81\samples\domains\medrec\config.xml).
- **WebSphere**. The full path to the server.xml file of a specific server on a specific node in a specific cell (for example: c:\WebServers\IBM\WebSphere\AppServer\profiles\AppSrv01\config\cells\I4W-VM-SRV3Node01Cell\nodes\I4W-VM-SRV3Node01\servers\server1\server.xml).

i If the auto-detected value is incorrect, you can change it manually.


3. Select the Web server version from the drop-down menu.
Normally the Tier installer will auto-detect and display the Web server version in this field. If the Web server version is not auto-detected, or incorrect, enter the inputs manually. Select one of the following Web server version options from the list:
 - **WebLogic**. 8.x, 9.x, 10.x
 - **WebSphere**. 6.0, 6.1-6.x, 7.0
4. Select the application type from the drop-down menu.
This is the application served by this Web server site. This information enables better configuration of the Web Tier Collectors. The following options are available:
 - Web (default)
 - PeopleSoft
5. Enter the instance name. Use a free-text identifier to distinguish between multiple, monitored Web sites.


6. Click **Next**.

Defining an Oracle 10g Application Server instance


To define an Oracle 10g Application server instance

1. Select the application server from the drop-down menu.
The textboxes for the Oracle 10g Application Server will be auto-detected and populated when you select one of the auto-discovered Web sites in the Detected Web sites list. You can manually change the auto-detected values. The auto-detection mechanism has the following limitations:
 - The Web server version is not returned if you don't have read permissions on the inventory/ContentsXML/configtools.xml file in the Application server folder.
 - On Solaris and AIX prior to version 5.3 patch 5, the Oracle 10g Application Server may be partially or not detected.
 - Instances that are currently not running are not detected. On Windows, instances that are installed as services are not detected, whether they are running or not.
2. Select the Oracle Application server configuration file. To browse for the appropriate folder and file, click the **browse (...)** button.

 The configuration file should be named opmn.xml. Example for a configuration file path:
/i4t/i3/websun1_webservers/OracleAS/10.1.3/opmn/opmn.xml.

 Normally the Tier installer will auto-detect and display the Oracle Application server configuration file and the Apache Web server configuration file (step 3) in their fields. If the server configuration files are not auto-detected, or incorrect, enter the inputs manually.

3. If there is an Integrated Apache web server running before the Oracle AS, select its configuration file. To browse for the appropriate folder and file, click the **browse (...)** button.
For example, the configuration file of apache in an Oracle Applications 12 installation:
/rac_shared/env/appl/apps/tech_st/10.1.3/Apache/Apache/conf/httpd.conf
or
/rac_shared/env/inst/apps/VIS_pool-linux-rac-1/ora/10.1.3/Apache/Apache/conf/httpd.conf
4. Select the Oracle Application server version, from the drop-down menu.

 Normally the Oracle Application server version will be auto-detected. If it's not auto-detected, manually enter the server version.

5. Select the application type from the drop-down menu.
6. Select the application version from the drop-down menu. The following options are available:
 - Web (default)
 - PeopleSoft
 - Oracle Applications
7. Enter the instance name. Use a free-text identifier to distinguish between multiple, monitored web sites.
8. Click **Next**.

Entering Domain information

Precise for Web monitors Web instance performance and availability. The domains screen displays a list of all detected Web domains. If the domains are not detected automatically, manually enter them.

- ❗ Only in Apache, the SSL ports are detected as regular ports, so you should pay attention and set the SSL check box accordingly.

The detected Web domains can be added manually. If you need to manually obtain the Listener agent ports for a server, do the following:

- Run the netstat command to see a list of all open connections on the server machine.
- On a UNIX server use the lsof utility located in the <precise_root>/products/insight/host/bin folder on the monitored server.

To use the utility to obtain a list of all TCP/IP ports used by a service, run the following command:

```
lsof -P|grep LISTEN|grep listener process name
```

To access a list of lsof utility options, run the following command:

```
lsof -h
```

- ❗ The lsof utility is only available if the Insight Savvy for Network is installed. If you want to run this utility before completing the Savvy installation, log in as the root user and locate the bin/lsof.<operation-system-version> file in the Insight installation folder.

- ❗ If there is more than one ip:port combination shown, only real IP addresses should be fully specified.

To enter a Web Tier domain

1. Mark one of the listed domains.
2. Mark the SSL box if the domain is secured (HTTPS).
If the desired domain is not on the list, or requires editing, follow steps a-f:
 - a. Click **Add** or **Edit**.
 - b. Choose either “All IPs” or “Specific IP”.

- ❗ If every IP address that the server listens on, is a real IP address, then they should all be specified. If the different names are actually virtual hosts, then only one should be specified. If the only difference is in the ports (same IP address with several ports), then only one of them should be specified.

- c. If a Specific IP is selected, enter the Specific IP name.
- d. Enter the port number for this domain.
- e. Enter the Host Header name for this domain (If it exists).
- f. Mark the SSL box if the domain is secured (HTTPS).
- g. Click **Add**.
- h. Click **Next**.

About the AdminPoint Tier installation preview screen

The preview screen signifies that the AdminPoint Tier installer has gathered enough information to begin the installation phase.

The preview screen displays the following details before installation begins:

- Server name or IP address
- The name of the monitored server

- What actions will be performed in their respective order
- Installation folder (location)
- Required disk space
- Currently available disk space

At this screen, you can still change any of the settings displayed. Click **Back** to change any of the displayed settings. Click **Next** to continue installation. Click **Cancel** to stop the installation process.

About the AdminPoint Tier installation progress screen

This screen appears when the AdminPoint Tier installer is actually performing installation. Installation may take several minutes.

The progress screen visually displays the progress of actual installation on selected servers.

About adding servers

The Add Servers screen enables you to add servers to a cluster. This can be done by moving servers to the table on the right. The new cluster server may get an indication that action items are pending and after the executing them, a list of cluster instances related to this cluster will be shown instead. Click **Next** to continue installation.

About the AdminPoint Tier installation complete screen

This screen appears when the AdminPoint Tier Installer has completed installation of all Tier instances.

If there are no action items, click **Finish** (it will be the only option available) to complete the instance installation. If there are action items, click **Next** (it will be the only option available).

About the AdminPoint Tier Action Items screen

After a Tier instance is installed, you must perform post-installation tasks as may be required. Only after completing any post-installation tasks required can you start using the Tier instances you have just installed.


Perform any tasks displayed on this screen. Click **Execute** for Precise to perform the action items. Click **Mark as done** if you have performed the action items yourself. See Post-installation action items for more information.


Installing a Web cluster

This section describes the procedures that are needed to install a Web cluster. A Web cluster is defined as a set of WebLogic or WebSphere JVMs that share the same configuration and are started from a shared location. Installing a Web cluster has two parts. The first one, described below, consists of creating a repository for the cluster configuration based on the definition of any of the cluster's JVM and performing the action items on the shared location. Once the action items are performed and JVMs are restarted, the second part of the installation takes place and each JVM instance is installed automatically and Precise starts to monitor it.

For information on editing or removing an existing instance, see [Editing or removing tier instances or clusters](#).


Adding a Web cluster

 Before adding a cluster, create a list of all required inputs based on the screen information below.

 Installing a cluster is only supported for WebSphere and WebLogic web servers.

To add a cluster

1. From StartPoint, click the AdminPoint tab.
2. Click the Setup tab.
3. From the drop-down menu, select **Instances & Clusters**.
4. Click the **All clusters** tree item.
5. At the bottom of the Display Instances & Clusters screen, click **Add Cluster**. The Add New Cluster dialog box appears.
6. Select the Web technology from the list.
7. Select the application from the list.
If the desired application is not on the list, use the following steps:
 - a. Click **Add**.
 - b. In the Application Name field, type in the new application name.
 - c. On the Application System field, select the system application from the list.
 - d. Click **OK**.

 To install a cluster in an application, you must have explicit ADMINISTRATE.INSTALL permissions for the application in which you want to install the cluster. If you only have permission for a specific technology, you will only be able to install in an application that is either empty, or is comprised of only the same technology.

8. Select a Tier from the list.
9. Click **OK** to view the next screen.


 Always refresh AdminPoint after adding an instance.

Defining Web property settings


To define the Web cluster property settings, you must provide the cluster name, select which Web server type you want to monitor, as well as its location.

To define the Web cluster

1. Enter a cluster name. Use a free-text identifier to provide a unique name to be shared by all instances in the cluster. In addition, a unique identifier will automatically be added to each instance.

 The unique name will be the application server name.

2. Select one of the following Web server types, from the drop-down menu:
 - WebLogic
 - WebSphere
3. Select the server where any of the web instances running the cluster application is located, from the drop-down menu. Click **Add** to enter the name of a server not on the list. For more information, see [Adding a new server](#).

 This is the name or IP address of the server where you want to install the Web Tier Collector with a specific operating system. The server name or IP address appears in the list only if you previously defined it as a Precise server.

The Web site field will be auto-detected and populated. Once you have selected one of the auto-discovered Web sites in the Detected Web sites list, the required fields will be automatically filled. If the fields are incorrect, they can be modified manually.

i The auto-detection mechanism is limited in different ways, depending on whether WebLogic or WebSphere is on a Windows or UNIX server. On Windows, the detection is based on running processes. Therefore, the Web server will not be detected if it is not running. However, Web servers that are installed as Windows services will not be detected whether they are running or not. On UNIX, in most configurations of HP, Linux, Sun, and AIX prior to version 5.3 patch 5, the Web servers may be partially detected or not detected at all.

4. Select the Web server version from the drop-down menu.
Normally the installer will auto-detect and display the Web server version in this field. If the Web server version is not auto-detected, or incorrect, enter the inputs manually. Select one of the following Web server version options from the list:
 - **WebLogic.** 8.x, 9.x, 10.x
 - **WebSphere.** 6.0, 6.1-6.x, 7.0
5. Select the application type from the drop-down menu.
This is the application served by this Web server site. This information enables better configuration of the Web Tier Collectors. The following options are available:
 - Web (default)
 - PeopleSoft
6. If PeopleSoft was selected in the previous field, enter the relevant Application version between version 8.44-8.498.5x.
7. Click **Next**.

About the AdminPoint cluster installation preview screen

The preview screen signifies that the AdminPoint cluster installer has gathered enough information to begin the installation phase.

The preview screen displays the following details before installation begins:

- Server name or IP address
- The name of the monitored server
- What actions will be performed in their respective order
- Installation folder (location)
- Required disk space
- Currently available disk space

At this screen, you can still change any of the settings displayed. Click Back to change any of the displayed settings. Click **Next** to continue installation. Click **Cancel** to stop the installation process.

i At this point, the cluster definitions are saved and an agent is only installed on the specified server. For servers that will be added after this point, the agent will be installed only once the instance is started.

About the AdminPoint cluster installation progress screen

This screen appears when the AdminPoint cluster installer is actually performing installation. Installation may take several minutes.

The progress screen visually displays the progress of actual installation on selected servers.

About the AdminPoint Tier Action Items screen

Perform all tasks displayed on this screen. Once all the post-installation action items have been applied on the application and the application has been deployed to the cluster Web servers, these servers will automatically be installed in the Precise application. Click **Execute** for Precise to perform the action items. Click **Mark as done** if you have performed the action items yourself. See Post-installation action items for more information.

About the AdminPoint cluster installation complete screen


This screen appears when the AdminPoint cluster installer has completed installation of the cluster. Click **Finish** (it will be the only option available) to complete the cluster installation.

Post-installation action items

When the Web Tier Collectors have been installed, post-installation action items may be required. There might be additional action items not listed below, that are required in each installation. Upon finishing your installation, verify that all action items have been completed by checking the list generated on the Action Items screen.

Post-installation tasks for WebLogic, WebSphere, Tomcat, and Sun One (J2EE stack)

To monitor the application(s), you need to register the Precise for Web agent(s) as Web application filters. This section describes how to add Precise for Web technology to the Web application(s) Web descriptor files.

 If you have installed a cluster, this is the only documented post-installation action item. Verify that no additional action items are needed by checking the list Action Items screen.


- To automatically modify the web.xml file(s) of the monitored application(s), you are required to login as the user that has permissions to change the application files and run a script that adds the Precise for Web agents to your application.

As an input to that script you need to provide the location of the .EAR, .WAR, or web.xml file(s) of the application(s).

Note that if you change a locally deployed application, then any application redeployment may override this action item, so you will need to do it again. If you do not want to do this after every redeployment, you have 2 options:

- (Best practice) To add this script to you application redeployment script, so it will be done automatically.
- Change the central application file (if the application is clustered and there is a central location as opposed to a local location). This way the Precise filters will stay in the application in each redeployment.

 If you do so, you will need to redeploy the application instead of performing a mere JVM restart.

 If you are installing Precise for Web on a cluster (WebLogic or WebSphere) the option to change the central application file is the only option.

- Examples of application locations:
 - The WebLogic 10.3 console shows the .EAR file location under “deployments”. Then click on your application name to see the path.
 - The WebSphere 6.1 console displays the names of .EAR files, but not their location. The typical location of and .EAR file is:


```
<install-dir>\profiles\[profile-name]\config\cells\[cell-name]
\applications\PlantsByWebSphere.ear\PlantsByWebSphere.ear
```
 - For Tomcat 5.x & 6.x: <tomcat-dir>\webapps\<app-name>\web-inf\web.xml
 - For Sun One 6.x: <sunone-dir>\WebServer6.1\<domain-name>\webappsWeb.xml appears inside each application.

Modifying the Web descriptor file on a Web application with multiple instances

When installing a Web application with multiple instances, running the `psww_web_desc_modify` command will create multiple EAR files, with each EAR file containing a different `instanceId` and `i3root` value, corresponding to the instances in the Web application.

To avoid creating multiple EAR files


1. Run the web desc modifier without the `-instanceId` and `-i3root` parameters.
2. Add the following parameters to the JVM command line:
 - `-DPssInstanceID=<instance_ID>`
 - `-DPssI3Root=<precise_root>`

Adding Precise for Web filter(s) to the Web server classpath

To monitor the application, the Precise for Web agent(s) jar(s) must be loaded. Consult with your Web Administrator on where the right location is to do so. Examples:

- **WebLogic 9.2.** `<bea-root>\weblogic91\samples\domains\medrec\startWebLogic.cmd` WebSphere 6.1 changes the `server.xml` file located for example in F:


```
\webservers_linux\poollin3\ibm\websphere61\profiles\AppSrv01\config\cells\poollin3Node01Cell\nodes\p
oollin3Node01\servers\server1\server.xml
```
- **Tomcat 5.x & 6.x.** `<tomcat-dir> \bin\setclasspath.bat(sh)` or click the Tomcat executable, and in the Apache Tomcat Properties dialog box go to the Java tab. There you can see the Java classpath.

 You will also need to add the `javax.servlet-api.jar` file manually to the classpath. It can be found at: e.g. `<tomcat-dir>\common\lib\servlet-api.jar`.

- Sun One 6.x uses the management console to change the classpath or you can edit the `<sun-one-install-dir>\<server-name>\config\server.xml` file and follow the instruction in the action item.

Enabling statistics collection on WebSphere 6.1 - 6.x and 7.x

1. Open WebSphere admin console (URL: `ibm/console/login.do`).
2. In the Integrated Solutions Console, click the Monitoring and Tuning tab.
3. From the drop-down menu, click on Performance Monitoring Infrastructure (PMI).
4. On the right pane, select the server upon which you want to enable statistics (for example, `server1`.)
5. In the next screen, click the Runtime tab.
6. On the Runtime tab, select either:

- Basic
- Extended
- All
- Custom

i If you select Custom, verify that the CommittedCount counter under Transaction Manager is enabled.

Adding the session cookie name of the monitored application

To verify that browser-side and server-side data is properly correlated, specify the name of the session cookie that is used by the application in the settings.xml file. Session cookie names can be JSESSIONID, _sn, SID, etc. Contact your application administrator to find the name of the cookie.

To add the session cookie name

1. In the “Registry Path” field in the Registry Editor (AdminPoint > Settings > Registry Editor), enter the following path and click Go: registry/instances/www/<server_name>/<instance_name>/settings.
2. In the Xml Editor tab, search for the <filter-session-cookie> tag.
3. Add the applicable cookie name between the tag, for example:
<filter-session-cookie>_sn</filter-session-cookie>
4. Click **Save**.

i The cookie session name for J2EE (JSESSIONID) is the default value for the <filter-session-cookie> tag.

Adding post-parameters collection for IIS6

To add post-parameters collection for IIS, see the following sections:

- Inserting wildcard mapping for Precise post-parameters collection extension
- Add the Precise post-parameters collection extension to the trusted list
- Updating the collect-post-parameters tag

Inserting wildcard mapping for Precise post-parameters collection extension

By inserting wildcard application mapping, you can instruct IIS to allow ISAPI applications known as interceptors to intercept and examine every request before the requested page is sent to its mapped application. The effect is an application mapping that handles every file name extension.

i You must be a member of the Administrators group on the local computer to perform the following procedure or procedures. As a security best practice, log in to your computer by using an account that is not in the Administrators group, and then use the runas command to run IIS Manager as an administrator. At a command prompt, type run as /User:Administrative_AccountName"mmc systemroot\system32\inetsrv\iis.msc".

To add a wildcard application mapping to a Web server or Web site

1. In IIS Manager, expand the local computer, expand the Web Sites folder, expand the "Default-Web-Site", right-click the virtual directory that you want to collect post parameters on, and then click **Properties**.
2. Click **Add Wildcard Script Map**.

3. In the Executable box, enter the full path or browse to the native handler (.dll or .exe file) that processes the request: <precise_root>\products\www\instances\<instance_id>\bin\IISFilter.dll
4. In the Name box, enter a name for the handler mapping.
5. Click **OK**.
6. Click **Yes**, to add the extension with an Allowed entry to the ISAPI and CGI Restrictions list. Repeat this for each virtual directory you want to collect post parameters in.

Add the Precise post-parameters collection extension to the trusted list

1. In IIS Manager, expand the local computer; expand the Web Services Extensions, Click **Add a new Web service extension**.
2. Put "Precise post parameters" as extension name.
3. Click **Add**. In the "Path to file" field type the path to the DLL:
<precise_root>\products\www\instances\<instance_id>\bin\IISFilter.dll
4. Click **OK**.
5. Mark the "Set extension status to Allowed" check box.
6. Click **OK**.

Updating the collect-post-parameters tag

To update the collect-post-parameters tag

1. In the "Registry Path" field in the Registry Editor (AdminPoint > Settings > Registry Editor), enter the following path and click Go: registry/instances/www/<server_name>/<instance_name>/settings.
2. In the Xml Editor tab, change the value of the <collect-post-parameters> tag to "true".
3. Click **Save**.

Adding post-parameters collection for IIS

To add post-parameters collection for IIS, see the following sections:

- [Inserting wildcard mapping for Precise post-parameters collection extension](#)
- [Updating the collect-post-parameters tag](#)

Inserting wildcard mapping for Precise post-parameters collection extension

By inserting wildcard application mapping, you can instruct IIS to allow ISAPI applications known as interceptors to intercept and examine every request before the requested page is sent to its mapped application. The effect is an application mapping that handles every file name extension.

i You must be a member of the Administrators group on the local computer to perform the following procedure or procedures. As a security best practice, log in to your computer by using an account that is not in the Administrators group, and then use the runas command to run IIS Manager as an administrator. At a command prompt, type run as /User:Administrative_AccountName"mmc systemroot\system32\inetsrv\iis.msc".

i It is highly recommended to install the Microsoft hotfix mentioned in KB 2505146 (<http://support.microsoft.com/kb/2505146>) as this solves a Microsoft IIS7 issue. Should you not apply the hotfix and continue to perform the following steps, your application will stop working.

To add wildcard application mapping to a Web server or Web site, go to the *Precise_root* directory and run the following script:

```
products\www\install\psww_insert_isapi_handlers.bat <precise_root>
<instance_id> <site_name> add-handler PreciseWebHandler <filter_path>
```

where:

filter_path The path to the instance bin folder concatenated with "IISFilter", without the _32.dll or _64.dll extension.

For example: `c:\precise\products\www\instances\2643\bin\IISFilter`

For example: `products\www\install\psww_insert_isapi_handlers.bat "E:\Precise Installation" 2442 Petshop add-handler PreciseWebHandler "E:\Precise Installation\products\www\instances\2442\bin\IISFilter"`


Updating the collect-post-parameters tag

To update the collect-post-parameters tag

1. In the "Registry Path" field in the Registry Editor (AdminPoint > Settings > Registry Editor), enter the following path and click **Go**:
`registry/instances/www/<server_name>/<instance_name>/settings/server-side.`
2. In the Xml Editor tab, change the value of the `<collect-post-parameters>` tag to "true".
3. Click **Save**.

Adding post-parameters collection for all other supported Web servers

To add post-parameters collection for all other supported Web servers, see the following section:

 This feature is not supported for Apache 1.3.

- [Updating the collect-post-parameters tag](#)

Updating the collect-post-parameters tag

To update the collect-post-parameters tag

1. In the "Registry Path" field in the Registry Editor (AdminPoint > Settings > Registry Editor), enter the following path and click Go:
`registry/instances/www/<server_name>/<instance_name>/settings/server-side.`
2. In the Xml Editor tab, change the value of the `<collect-post-parameters>` tag to "true."
3. Click **Save**.

Removing post-parameters collection for IIS

To remove wildcard application mapping from a Web server or Web site, go to the *Precise_root* directory and run the following script:

```
products\www\install\psww_insert_isapi_handlers.bat <precise_root>
<instance_id> <site_name> remove-handler PreciseWebHandler <filter_path>
```

where:

filter_path The path to the instance bin folder concatenated with "IISFilter", without the _32.dll or _64.dll extension.

For example: `c:\precise\products\www\instances\2643\bin\IISFilter`

For example: products\www\install\psw_insert_isapi_handlers.bat "E:\Precise Installation" 2442
Petshop remove-handler PreciseWebHandler "E:\Precise Installation\products\www\instances\2442\bin\IISFilter"

Advanced installation of Web tier collectors

This section includes the following topics:

- [Defining the server upon which the FocalPoint is to be installed](#)
- [Sampling Alerts custom metrics from the monitored instance](#)
- [Associating collected server-side performance information with network performance information](#)
- [Instrumenting Web pages to collect client-side response time information](#)
- [Monitoring Web applications using SSL](#)
- [Monitoring a Web application that is not the root application](#)
- [Monitoring a Web application that uses client-side certification](#)
- [Monitoring a Web application that uses an authentication mechanism](#)
- [Using cluster shared configuration in Precise for Web](#)

Defining the server upon which the FocalPoint is to be installed

The default location for the FocalPoint installation is on the same server as the Precise Framework. The General tab allows you to define a different server as the location for the FocalPoint installation.

To enter FocalPoint inputs


1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the General tab.
3. Click the drop-down menu and select the server which the FocalPoint should be installed upon.
4. Click **OK**.


Sampling Alerts custom metrics from the monitored instance

To enable sampling of Alerts custom metrics for this instance

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the General tab.
3. Mark the box "Enable sampling of custom metrics for this instance."
4. Click **OK**.

Associating collected server-side performance information with network performance information

 By default, this option is already marked. This option allows you to correlate the data collected by the Web server-side collection with the data collected by the Insight Savvy for Network.

 This option is not available for IIS 7.x monitoring.

To associate collected server-side performance information with network performance information

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the Monitoring Options tab.
3. Mark the "Collect network response time" check box.
4. Click **OK**.

Instrumenting Web pages to collect client-side response time information

To collect client-side data, your Web application page needs to be instrumented to insert Web performance monitoring code. It uses a Web server filter to instrument the page in real-time, without changing the pages stored on the disk.

i Dynamic instrumentation is not supported for Apache 1.3 and iPlanet Web servers. This means that client-side monitoring is not available for these Web servers.

To instrument Web pages to collect client-side response time information

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the Monitoring Options tab.
3. Mark the “Collect client-side performance metrics” check box.

i By default, this option is marked, except on Apache 1.3 and iPlanet servers.

4. Click **OK**.

Monitoring Web applications using SSL

If the only way available to connect to the Web server is via a SSL connection, enable this option.

To enable this option

1. After specifying the web domains to be monitored on the Domain Information screen, click **Advanced**.
2. Click the SSL tab.
3. Mark the “Web server uses special SSL configuration” box.
4. Enter the special ciphers to be used when connecting the Web server via SSL.

i This field should contain ciphers that are not default ciphers for the SSL version (such as: SSLv2 or SSLv3) used by the Web server. For example: RC4, RC2. For more information see http://www.openssi.org/docs/apps/ciphers.html#CIPHER_LIST_FORMAT. For a complete list of cipher names, see: http://www.openssl.org/docs/apps/ciphers.html#CIPHER_SUITE_NAMES.

5. Click **OK**.

Monitoring a Web application that is not the root application

Precise for Web uses HTTP requests to the monitored application to manage the Precise for Web agents. Therefore, it needs to be updated with the application context path.

If you did not install the filter on the root Web application, update the correct site name (application context path).

To update the site name

1. After specifying the web domains to be monitored on the Domain Information screen, click **Advanced**.
2. Click the Site Name tab.
3. Enter the updated site name (application context path).
4. Click **OK**.

Monitoring a Web application that uses client-side certification

This specifies whether the Web server needs a client certificate to establish a connection.

To specify whether the Web server needs a client certificate to establish a connection

1. After specifying the web domains to be monitored on the Domain Information screen, click **Advanced**.
2. Click the **SSL** tab.
3. Mark the “Web server uses client-side certification” box.
4. Enter the full path to the client certificate file or click the browse (...) button to locate and select the appropriate path.
5. Enter the full path to the client certificate private key file (if not included in the certificate file) or click the browse (...) button to locate and select the appropriate key path.
6. Enter the encrypted password for the client certificate, if required. The password should be encrypted using the Precise CLI utility.
7. Click **OK**.


Monitoring a Web application that uses an authentication mechanism

If the monitored Web server uses an authentication mechanism to allow incoming requests, you need to enter additional inputs.

To enter additional inputs

1. After specifying the web domains to be monitored on the Domain Information screen, click **Advanced**.
2. Click the **Authentication** tab.
3. Mark the “Web server uses authentication” box.
4. Enter the user name.
5. Enter the password (encrypted using the Precise CLI utility).
6. Enter the domain.
7. Select the method from the drop-down menu. You can choose from:
 - **Basic**
 - **Digest**
 - **NTLM**
8. Click **OK**.

Using cluster shared configuration in Precise for Web

 This option is only relevant for WebSphere and WebLogic.

To use cluster shared configuration

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the **Monitoring Options** tab.
3. Verify that the “Use cluster shared configuration” check box is marked.
4. Click **OK**.
5. Complete the installation and perform the displayed action items.

After following the previous procedure, all WebLogic/WebSphere servers running the same application will be auto-installed as part of the cluster.

Installing J2EE tier collectors

This section includes the following topics:

- [Installation types](#)
- [Pre-installation tasks](#)
- [Installing a standalone J2EE Tier instance](#)
- [Installing a J2EE cluster](#)
- [Post-installation action items](#)

For instructions on remote monitoring of your J2EE instance, refer to the [Installing Precise Components](#).

Installation Types

Before beginning the installation process, review the (JVM) instances you wish to monitor and choose the most applicable type of installation according to your needs.

J2EE instances can be installed in one of the three following ways:

- **Standalone Installation.** Standalone installation enables you to install a single instance and define the instance name and configuration. This instance is not connected to or affected by any other instance configuration. After completing the pre-installation tasks, see [Installing a standalone J2EE Tier instance](#).
- **Cluster Installation.** Cluster installation defines the configuration parameters for a group of instances in a central location. Once a cluster is defined, a set of startup arguments is created. All instances with these startup arguments will automatically be installed as part of the cluster and share the same configuration. Each instance in the cluster is given a name that includes both the user defined cluster name and an automatically generated unique identifier.

It is recommended to install a cluster when the following conditions apply:

- The application is deployed on more than one JVM.
- New JVMs are created automatically.
- The startup parameters are located in a central location and are shared by all instances in the clusters.
- There is no need for specific, user-defined instance names.

After completing the pre-installation tasks, see [Installing a J2EE cluster](#).

- **Shared Configuration.** Shared configuration enables the user to use configuration parameters from a different, already installed instance. Each instance using shared configuration is given a user-defined name, but will share all configuration, as defined in the configuration files in the registry. After completing the pre-installation tasks, see [Using shared configuration in Precise for J2EE](#).

Pre-installation tasks

This section describes the pre-installation tasks for the J2EE Collector.

J2EE Collector

- If the J2EE Collector is hosted on an AIX server, verify that the Precise user limits for the Precise user are unlimited for data.
- The application server user (regardless of the application server type) must have the following file system permissions:

Table 11-1 File system permissions

Folder	Permissions	Justification
<precise_root>/logs	Read/Write	Write log file, log file rotation
<precise_root>/products/j2ee	Read/Write	Various configuration files, status files

J2EE Collector network ports

The Precise for J2EE Collectors uses network ports to communicate with the monitored JVMs. The default port that Precise for J2EE uses is: 20763.

Installing a standalone J2EE Tier instance

This section describes the installation procedure for installing a single, independent J2EE Tier instance. For information on editing or removing an existing instance, see [Editing or removing tier instances or clusters](#).

Adding a J2EE Tier instance

i Before adding a Tier instance, create a list of all required inputs based on the screen information below.

To add a Tier instance

1. From StartPoint, click the AdminPoint tab.
2. Click the Setup tab.
3. From the drop-down menu, select **Instances & Clusters**.
4. Click the **All instances** tree item.
5. At the bottom of the Display Instances & Clusters screen, click **Add Instance**. The Add New Instance dialog box appears.
6. Select the required technology from the list.
7. Select the application from the list.

If the desired application is not on the list, perform the following steps:

 - a. Click **Add**.
 - b. In the Name field, type in the new application name.
 - c. In the Node field, select the system application from the list.
 - d. Click **OK**.

i To install an instance in an application, you must have ADMINISTRATE.INSTALL permission for the application in which you want to install the instance. If you only have permission for a specific technology, you will only be able to install in an application that is either empty, or is comprised of only the same technology.

8. Select a Tier from the list.
9. Click **OK** to open the J2EE Instance Installation - Property Settings dialog box. See [Defining J2EE property settings](#).

i Always refresh AdminPoint after adding an instance.

Defining J2EE property settings

To enter J2EE property settings

1. Click the drop-down menu to select the server where the JVM is running. If you want to add a new server, click **Add**. For more information, see [Adding a new server](#).

i This is the name or IP address of the server where you want to install the J2EE Tier Collector. The server name appears in the list only if you previously defined it as a Precise Server. In upgrade mode, the list contains all servers that were installed or upgraded. Choose a server that was upgraded.

2. Select an auto-detected JVM from the "Detected JVMs" list. The remaining text boxes are auto-filled, but may be edited as needed.
3. If the JVM you want to monitor is not detected then proceed as follows:
 - a. Click the drop-down menu to select the application server type.

i This is the type of the J2EE application server. Precise supports several J2EE application server types, including Oracle WebLogic, IBM WebSphere, Oracle AS, and Apache Tomcat.

- b. Click the drop-down menu to select the application server version.

i The next two items are optional, but are required to enable automatic execution of post-installation action items.

- c. Enter the full path to the Java executable.
- d. Mark the "WebLogic instance configured through admin console" check box.

i For Precise to instrument the JVM, it must modify its startup configuration. A WebLogic instance is configured using either a local file on the instance machine, or settings configured in the WebLogic admin console. Select this option if installing a WebLogic instance that is configured through the WebLogic admin console.

4. Enter the instance (JVM) name.

i The instance name should be an alphanumeric string to be used by J2EE, Insight, Alerts, and Report Manager to identify the monitored application server instance. The instance name must be unique to the monitored host.

5. Click **Next**. A preview of the planned installation will be displayed for approval at the beginning of the installation process.

About the AdminPoint Tier installation preview screen

The preview screen signifies that the AdminPoint Tier installer has gathered enough information to begin the installation phase.

The preview screen displays the following details before installation begins:

- Server name or IP address
- The name of the monitored server
- What actions will be performed in their respective order
- Installation folder (location)
- Required disk space

- Currently available disk space

At this screen, you can still change any of the settings displayed. Click **Back** to change any of the displayed settings. Click **Install** to continue installation. Click **Cancel** to stop the installation process.

About the AdminPoint Tier installation progress screen

This screen appears when the AdminPoint Tier installer is actually performing the installation. Installation may take several minutes. The progress screen visually displays the progress of actual installation on selected servers.

About the AdminPoint Tier installation complete screen

This screen appears when the AdminPoint Tier Installer has completed installation of all Tier instances.

If there are no action items, click **Finish** (it will be the only option available) to complete the instance installation. If there are action items, click **Next** (it will be the only option available).

About the AdminPoint Tier Action Items screen

After a Tier instance is installed, you must perform post-installation tasks as may be required. Only after completing any post-installation tasks required can you start using the Tier instances you have just installed.

Perform any tasks displayed on this screen. For Precise to perform the action items, click **Execute**. If you have performed the action items yourself, click **Mark as done**.

Installing a J2EE cluster

This section describes the procedures that are needed to install a J2EE cluster. A J2EE cluster is defined as a set of JVMs that share the same instrumentation configuration and are started from a shared location. Installing a J2EE cluster has two parts. The first one, described below, consists of creating a repository for the cluster configuration based on the definition of any of the cluster's JVM and performing the action items on the shared location. Once the action items are performed and JVMs are restarted, the second part of the installation takes place and each JVM instance is installed automatically and Precise starts to monitor it.

i When installing a J2EE cluster, verify that Precise is installed on all servers hosting JVMs that are part of the cluster. In the cluster script, the `javaagent` flag points to the Precise JAR file in each JVM installed as part of the cluster. If a server hosting a JVM that is part of the cluster does not have Precise installed, the JAR file will be missing, and all JVMs on that server will fail to start.

For information on editing or removing an existing cluster, see [Editing or removing tier instances or clusters](#).

Adding a J2EE cluster

i Before adding a cluster, create a list of all required inputs based on the screen information below.

To add a cluster

1. From StartPoint, click the AdminPoint tab.
2. Click the Setup tab.
3. From the drop-down menu, select **Instances & Clusters**.
4. Click the **All clusters** tree item.

5. At the bottom of the Display Instances and Clusters screen, click **Add Cluster**. The Add New Cluster dialog box appears.
6. Select the J2EE technology from the list.
7. Select the application from the list.
If the desired application is not on the list, use the following steps:
 - a. Click **Add**.
 - b. In the Name field, type in the new application name.
 - c. In the Node field, select the Tier from the list.
 - d. Click **OK**.

i To install a cluster in an application, you must have explicit ADMINISTRATE.INSTALL permission for the application in which you want to install the cluster. If you only have permission for a specific technology, you will only be able to install in an application that is either empty, or is comprised of only the same technology.

8. Select a Tier from the list.
9. Click **OK** to open the J2EE Cluster Installation - Property Settings dialog box. See [Defining J2EE cluster property settings](#).

i Always refresh AdminPoint after adding a cluster.

Defining J2EE cluster property settings

To enter J2EE property settings

1. Use a free-text identifier to provide a unique name to be shared by all instances in the cluster. In addition, a unique identifier will automatically be added to each instance.

i For WebSphere and WebLogic, the unique name will be the application server name. For all other technologies, it will be a running number.

2. Click the drop-down menu to select a server where any of the cluster's JVMs are running. If you want to add a new server that is not listed, click **Add**. For more information, see [About adding servers](#). You will have the chance to add more servers later on in the installation process.

i This is the name or IP address of the server where you want to install the J2EE Tier Collector. The server name appears in the list only if you previously defined it as a Precise Server.

3. Select an auto-detected JVM from the "Detected JVMs" list. The remaining text boxes are auto-filled, but may be edited as needed.
4. If none of the JVMs that you want to monitor are detected, proceed as follows:
 - a. Click the drop-down menu to select the application server type.

i This is the type of the J2EE application server. Precise supports several J2EE application server types, including Oracle WebLogic, IBM WebSphere, Oracle AS, and Apache Tomcat.

- b. Click the drop-down menu to select the application server version.
 - c. Enter the full path to the Java executable - optional field.
 - d. If installing Oracle WebLogic managed instances, mark the "Managed WebLogic Server" check box.

i The last 2 items are optional, but are required to enable automatic execution of post-installation action items.

5. Click **Next**. A preview of the planned installation will be displayed for approval at the beginning of the installation process.

About the AdminPoint cluster installation preview screen

The preview screen signifies that the AdminPoint cluster installer has gathered enough information to begin the installation phase.

The preview screen displays the following details before installation begins:

- Server name or IP address
- The Tier on which the cluster will be installed
- What actions will be performed in their respective order
- Required disk space
- Currently available disk space

At this screen, you can still change any of the settings displayed. Click **Back** to change any of the displayed settings. Click **Next** to continue installation. Click **Cancel** to stop the installation process.

i At this point, the cluster definitions are saved and an agent is only installed on the specified server. For servers that will be added after this point, the agent will be installed only once the JVM is started.

About the AdminPoint cluster installation progress screen

This screen appears when the AdminPoint Cluster Installer is actually performing installation. Installation may take several minutes.

The progress screen visually displays the progress of actual installation on selected servers.

About adding servers

The Add Servers screen enables you to add more servers running the cluster's JVMs to the cluster. To add servers, first locate them in the left table or add them by pressing the Add button. To associate a server with the cluster, move it to the table on the right. This action will allow you to check the status of the installation of the JVMs on the selected servers. You can also add the servers to the right list at a later time by editing the cluster. See [Editing or removing tier instances or clusters](#). Click **Next** to continue installation.

About the AdminPoint Cluster Action Items screen

After a cluster is installed, you must perform post-installation tasks as required. Only after completing the post-installation tasks required can you start using the JVMs you have just installed.

Perform all tasks displayed on this screen. Click **Copy All** to copy the text of the action items to another location. Click **Execute** for Precise to perform the action items.

i If you have two different clusters that are started by the same startup script, execute the action items manually by performing the procedure detailed in [Manually executing post-installation action items when multiple clusters share a startup script](#).

About the AdminPoint Cluster Installation Complete screen

This screen appears when the AdminPoint Cluster Installer has completed installation of the cluster.

Click **Finish** (it will be the only option available) to complete the cluster installation. For cluster installation, every JVM that will start after all the action items have been applied, will automatically be installed and monitored in the Precise application.

Post-installation action items

After installing Precise agents for the J2EE Tier, post-installation action items must be executed. These action items vary according to the supported application, and can usually be executed automatically from the user interface. In some circumstances, however, these action items must be executed manually.

This section describes the automatic and manual post-installation action items for J2EE Tiers, and includes the following topics:

- Automatically executing post-installation action items
- Manually executing post-installation action items

Automatically executing post-installation action items

Most action items automatically appear as part of the installation process in the user interface.

To perform J2EE Tier post-installation tasks

1. In the J2EE Tier - Installation dialog box, click **Next**.
2. In the J2EE Tier - Post-Installation dialog box, follow the instructions to perform all post-installation action items.
3. Click **Finish**.

Manually executing post-installation action items

This section describes the following manual procedures:

- [Manually enabling CPU capturing for IBM AIX version 5.x](#)
- [Manually enabling Precise for J2EE monitoring](#)
- [Manually executing post-installation action items when multiple clusters share a startup script](#)
- [Manually executing WebSphere post-installation action items in instance and cluster applications](#)

Manually enabling CPU capturing for IBM AIX version 5.x

If the application server is running on an IBM AIX version 5.x computer, and you want to enable Precise for J2EE to report CPU numbers for each method invocation, set and export the AIXTHREAD_ENRUSG parameter as follows:

```
AIXTHREAD_ENRUSG=ON
export AIXTHREAD_ENRUSG
```

Manually enabling Precise for J2EE monitoring

If the automatic execution of the post-installation action items failed, perform the following steps to enable monitoring for the installed instance or cluster:

i Verify that the instance (JVM) or cluster name you enter is the same as the instance (JVM) or cluster name that you defined during installation.

- For Java 1.5
 - Add the following arguments to the Java command line of the JVM to be monitored:
 - For an instance


```
-javaagent:<precise_root>\products\j2ee\lib\indepthj2ee-agent.jar=com.precise.javaperf.javaagent.agents.DefaultJavaAgent
-Dindepth.j2ee.server=<precise_root>\products\j2ee\config\<INSTANCE_NAME>
-DisClustered=false
```
 - For a cluster


```
-javaagent:<precise_root>\products\j2ee\lib\indepthj2ee-agent.jar=com.precise.javaperf.javaagent.agents.DefaultJavaAgent
-Dindepth.j2ee.server=<precise_root>\products\j2ee\config\<CLUSTER_NAME>
-DisClustered=true
```

i Be sure to use the <JAVA_HOME> that the application server uses, not the <JAVA_HOME> located in the Precise product installation folder. The apladmin program will attempt to prevent any use of a JVM located under <precise_root>.

- For Java 1.4
 1. Configure instrumentation by executing the following command from the <precise_root> folder, replacing <JAVA_HOME> with the path to the Java home of the application to be monitored:
 - **Windows.** `products\j2ee\bin\apladmin modrt --jvm-id=<instance (jvm)_name/cluster_name> "<JAVA_HOME>\bin\java.exe"`
For example:
`products\j2ee\bin\apladmin modrt --jvm-id=<instance (jvm)_name/cluster_name> "c:\j2sdk1.4.2_08\bin\java.exe"`
 - **UNIX.** `products/j2ee/bin/apladmin.sh modrt --jvm-id=<instance (jvm)_name/cluster_name> "<JAVA_HOME>/bin/java"`
For example:
`products/j2ee/bin/apladmin.sh modrt --jvm-id=<instance (jvm)_name/cluster_name> "/opt/j2sdk1.4.2_08/bin/java"`

i Be sure to use the <JAVA_HOME> that the application server uses, not the <JAVA_HOME> located in the Precise product installation folder. The apladmin program will attempt to prevent any use of a JVM located under <precise_root>.

2. Follow the instructions in the command output to modify the Java command line of the JVM to be monitored.
3. Add the `-DisClustered=false` flag to the arguments from `apladmin`. For a clustered installation, specify 'true' for this flag.
4. After executing the `apladmin.modrt`, add the parameters to the JVM startup command line. For example:


```
-Xbootclasspath/p:C:\Precise\products\j2ee\etc\apl\jvms\java-vm-TestApp\lib\rt.jar
-Xbootclasspath/p:C:\Precise\products\j2ee\lib\indepthj2eeboot.jar
-Xbootclasspath/p:C:\Precise\products\j2ee\classes
-Dindepth.j2ee.server=C:\Precise\products\j2ee\config\TestApp
-DisClustered=false
```

Manually executing post-installation action items when multiple clusters share a startup script

If two different clusters are started by the same startup script, the automatic action items will not work properly. In this case, the user must edit the startup script manually and adjust it to the relevant cluster configuration.

To manually execute the action items


1. Start the cluster with Precise instrumentation by adding the following parameters to the Java command:
 - javaagent:<precise_root>\products\j2ee\lib\indepthj2ee-agent.jar=com.precise.javaperf.javaagent.agents.DefaultJavaAgent
 - Dindepth.j2ee.server=<precise_root>\products\j2ee\config\<cluster_name>
 - DisClustered=true
2. Repeat for each cluster started by the startup script.

Manually executing WebSphere post-installation action items in instance and cluster applications

By default, the user can automatically execute the post-installation action items for WebSphere application servers from the action items screen during installation. However, in some cases the automatic execution of the action items will not be possible or will fail. For example, if the WAS is secured, or the auto-detect phase failed (because the server was down, etc.), the automatic action items execution will fail. In such cases, the user will have to execute the action items manually.

To manually instrument a WebSphere instance/cluster


1. Configure instrumentation by executing the following command from the <precise_root> folder, replacing <JAVA_HOME> with the path to the Java home of the application to be monitored.
 - **Windows.** products\j2ee\bin\apladmin modrt --jvm-id=<instance (jvm)_name/cluster_name> "<JAVA_HOME>\bin\java.exe"
 - **UNIX.** ./products/j2ee/bin/apladmin.sh modrt --jvm-id=<instance (jvm)_name/cluster_name> "<JAVA_HOME>\bin\java.exe"

 Be sure to use the <JAVA_HOME> that the application server uses, not the <JAVA_HOME> located in the Precise product installation folder.

2. Follow the apladmin instructions.
3. Add the -DisClustered=false flag to the arguments from apladmin. For a cluster, specify 'true' for this flag.
4. To enable RMI transaction monitoring, add the following text:


```
Dorg.omg.PortableInterceptor.ORBInitializerClass.com.precise.javaperf.lib.smartlink.PreciseSmartlinkORBInitializer
```


 For example, the user will add the following arguments to WAS java arguments:
 - Xbootclasspath/p:C:\Precise\products\j2ee\etc\apl\jvms\java-vm-TestApp\lib\rt.jar
 - Xbootclasspath/p: C:\Precise\products\j2ee\lib\indepthj2eeboot.jar
 - Xbootclasspath/p: C:\Precise\products\j2ee\classes
 - Dindepth.j2ee.server= C:\Precise\products\j2ee\config\TestApp
 - DisClustered=false


 Generally the <JAVA_HOME> for WebSphere installations can be found in the Application > WebSphere variables section in the WebSphere Administrative Console.

5. Enable Application Server Metrics by performing the following steps:
 - a. Verify that the Performance Monitoring Service is enabled by marking the "Enable Performance Monitoring Infrastructure (PMI)" setting located on the Application Servers > <SERVER_NAME> > Performance Monitoring Infrastructure (PMI) page.

- b. Verify that the initial specification level is "Basic" or "Custom."
- c. After Performance Monitoring Service is confirmed to be enabled at startup, perform the following steps to configure the Application Server Metrics collection:
 - i. Select Servers > Application Servers > <SERVER_NAME> > Server Infrastructure > Administration > Custom Services.
 - ii. Click **New**.
 - iii. Mark the "Enable service at service startup" check box.
 - iv. Leave the External Configuration URL blank.
 - v. Set the "Classname" to
com.precise.javaperf.extensions.websphere.PreciseMetricPluginLoader
 - vi. Set the "Display Name" to PreciseMetricPluginLoader
 - vii. Set the "Classpath" to: <precise_root>/products/j2ee/lib/indepthmetric.jar
 - viii. Save the changes.
6. Update the security policy.
 - a. Edit the <WAS_INSTALL_ROOT>/profiles/<SERVER>/properties/server.policy file to include the following:


```
grant codeBase "file:<precise_root>/-" {
permission java.security.AllPermission;
};
```

 In Windows, change the PATH separator from '\ ' to the UNIX style separator '/ '.
7. Restart the Application server.

 For clustered applications, the user must verify that the `rt.jar` generated in step 1, and pointed to by the `Xbootclasspath`, is located in all the servers that are running as part of the WebSphere cluster. The user can copy the `rt.jar` to any central location, and update the `Xbootclasspath` accordingly.

Advanced installation of J2EE tier collectors

This section includes the following topics:

- [Defining the server upon which the FocalPoint is to be installed](#)
- [Sampling Alerts custom metrics from the monitored instance](#)
- [Using shared configuration in Precise for J2EE](#)

Defining the server upon which the FocalPoint is to be installed

The default location for the FocalPoint installation, is on the same server as the Precise Framework. The General tab allows you to define a different server as the location for the FocalPoint installation.

To enter FocalPoint inputs

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the General tab.
3. Click the drop-down menu and select the server which the FocalPoint should be installed upon.
4. Click **OK**.

Sampling Alerts custom metrics from the monitored instance

To enable sampling of Alerts custom metrics for this instance

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the General tab.
3. Mark the “Enable sampling of custom metrics for this instance” check box.
4. Click **OK**.

Using shared configuration in Precise for J2EE

When installing a J2EE instance, the Advanced dialog box contains a Share Configuration tab. This tab allows you to share the stand-alone instance instrumentation configuration with another standalone (non-cluster) J2EE instance.

To activate shared configuration

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the Share Configuration tab.
3. Mark the “Use another instance configuration” check box.
4. Select the instance. The instance is shown as “Instance name” (Server name).
5. Click **OK**.

Installing Microsoft .NET tier collectors

This section includes the following topics:

- [Pre-installation tasks](#)
- [Installing a Microsoft .NET Tier instance](#)
- [Post-installation action items](#)

Pre-installation tasks

Most of the screens for this installation require you to input details regarding your information systems. Before performing this installation, compile a list of all required user inputs based on the screen names and tables below. Each table (in the sections below) lists the options per screen.

Before installing a Microsoft .NET Tier instance, verify that you have performed the following tasks:

i The second and third tasks must be performed on the target server.

- Use the Precise Framework Installer to install framework components
- Create a Microsoft .NET login name with system administrator privileges and a password
- Close the Services window in the Control Panel.

Installing a Microsoft .NET Tier instance

This section describes the procedures that are needed to install a .NET Tier instance. You have the option of adding a new instance, as well as adding a new application. For information on editing or removing an existing instance, see [Editing or removing tier instances or clusters](#).

Adding a .NET Tier

i Before adding a Tier instance, create a list of all required inputs based on the screen information below.

To add a Tier instance

1. From StartPoint, click the AdminPoint tab.
2. Click the Setup tab.
3. From the drop-down menu, select **Instances & Clusters**.
4. Click the **All instances** tree item
5. At the bottom of the Display Instances & Clusters screen, click **Add Instance**. An Add New Instance dialog box appears.
6. Select .NET from the list.
7. Select the application from the list.

If the desired application is not on the list, follow steps a-d:

 - a. Click **Add**.
 - b. In the Application Name field, type in the new application name.
 - c. On the Application System field, select the system application from the list.
 - d. Click **OK**.

i To install an instance in an application, you must have `ADMINISTRATE . INSTALL` permission for the application in which you want to install the instance. If you only have permission for a specific technology, you will only be able to install in an application that is either empty, or is comprised of only the same technology.

8. Select a Tier from the list.
9. Click **OK** to view the next screen.

i Always refresh AdminPoint after adding an instance.

Defining .NET property settings

To define properties in the “.NET Instance Installation-Properties Settings” screen

1. Click the drop-down menu and select the server with the .NET instance that you want to monitor. To add a new server, click **Add**. For more information, see [Adding a new server](#).
 - ASP.NET instance

Select this option if you want to monitor a Web application. This instance type is only available if an Internet Information Server (IIS) is installed on the server. If you are running an ASP.NET instance on a Windows XP server, verify that an IIS is installed because it is not installed by default.

 - i. Click the drop-down menu and select the instance you want to monitor.
 - ii. At the bottom of the screen, enter a unique instance name to help you differentiate between instances.
 - .NET instance

Select this option if you want to monitor other .NET processes.

 - i. Click the **browse (...)** button to select the instance you want to monitor.
 - ii. At the bottom of the screen, enter a unique instance name to help you differentiate between instances.
 - iii. Click **Next**.

About the AdminPoint Tier installation preview screen

The preview screen signifies that the AdminPoint Tier installer has gathered enough information to begin the installation phase.

The preview screen displays the following details before installation begins:

- Server name or IP address
- The name of the monitored server
- What actions will be performed in their respective order
- Installation folder (location)
- Required disk space
- Currently available disk space

At this screen, you can still change any of the settings displayed. Click **Back** to change any of the displayed settings. Click **Next** to continue installation. Click **Cancel** to stop the installation process.

About the AdminPoint Tier installation progress screen

This screen appears when the AdminPoint Tier installer is actually performing installation. Installation may take several minutes.

The progress screen visually displays the progress of actual installation on selected servers.

About the AdminPoint Tier installation complete screen

This screen appears when the AdminPoint Tier Installer has completed installation of all Tier instances.

If there are no action items, click **Finish** (it will be the only option available) to complete the instance installation. If there are action items, click **Next** (it will be the only option available).

About the AdminPoint Tier Action Items screen

After a Tier instance is installed, you must perform post-installation tasks as may be required. Only after completing any post-installation tasks required can you start using the Tier instances you have just installed.

Perform any tasks displayed on this screen. Click **Execute** for Precise to perform the action items. Click **Mark as done** if you have performed the action items yourself.

Post-installation action items

When the Microsoft .NET Tier Collectors have been installed, you need to perform post-installation action items. These action items vary depending on the .NET application type, and include editing configuration files and restarting Precise agents. Not all action items appear on screen as described in [Performing post-installation action items](#). This section includes instructions regarding action items that appear as part of the installation, as well as an overview of instrumentation action items that are not included.

Performing post-installation action items

To perform Microsoft .NET Tier post-installation tasks

1. In the Microsoft .NET Tier - Installation dialog box, click **Next**.
2. In the Microsoft .NET Tier - Post-Installation dialog box, follow the instructions to perform all post-installation tasks.
3. Click **Finish**.

Configuring DLLs, classes, and methods to instrument

You can add the DLLs you wish to monitor using the DLLs dialog box in the Instrumentation Settings menu, as explained in the [Precise for Microsoft .NET User's Guide](#). But afterwards you must edit the file `instrumentation.xml` manually to define which classes and methods to instrument.

The Precise for Microsoft .NET activity tracking is based on instrumentation of your application DLLs. This information is configured in the `instrumentation.xml` file. The way you configure this file (this means which DLLs to instrument and which classes or methods) affect how much information will be tracked and also the overhead of the Precise for Microsoft .NET activity tracking on your application.

The `instrumentation.xml` file contains many configurable settings, which are explained in the [Precise Administration Guide](#) in detail.

The following file is an example section of the `instrumentation.xml` file which configures the instrumentation of the Microsoft PetShop sample Web application:

```
<instance name="AspNetIIS6">
  <dlls>
    <dll name="pet*.dll" /><!-- instrument all DLLs that start with pet* --!>
  </dlls>
  <instrument>
    <classes>
      <class>
```

```

        <name>Petshop.*</name><!-- instrument all classes of which the namespace
begins with Petshop --!>
        <called-method>
        <methods>
        <method>
        <name>*</name><!-- instrument all methods in each class --!>
        </method>
        </methods>
        </called-method>
        </class>
    </classes>
</instrument>
...

```

Defining permission settings for a Precise installation folder

The Precise for Microsoft .NET hooks that are injected into the monitored .NET process, are run under the same user account on which your .NET application is running. This user must have full permission rights to the `<precise_root>` folder and all its sub-folders.

You can change the security settings of the `<precise_root>` folder with the Windows File Explorer Security tab.

i If you have several application pools which translate into different Windows users, all these users must be granted full permission to the `<precise_root>` folder.

Changing the activity tracking threshold

The Precise for Microsoft .NET installation pre-configures the activity data tracking threshold and sets it to 50 milliseconds. This means that only methods, service requests, SQL statements, and Web services that have a response time that is equal to, or greater than 50 milliseconds will be collected.

You can change this default value in the `ActivityCollector.xml` file, located in the `<precise_root>/products/dotnet/config` folder any time after the installation:

```

<activity-collector-config>
  <!-- psdn_act_col.exe configuration, configurable per server (default) & per
instance -->
  <aggregator>
    <topnsql>5</topnsql><!-- Top n SQL statement to monitor -->
    <sla>5000</sla><!-- Red SLA breach value for top HTTP invocations in msec.--
>
    <nearsla>1000</nearsla><!-- Yellow SLA breach value for top http
invocations in msec. -->
    <insane-rt>300</insane-rt><!-- Long running thread timeout in seconds -->
    <bit-vector>>false</bit-vector>
    <last-level-bit-vector>>false</last-level-bit-vector>
  </aggregator>
  <!-- Tracker.dll settings, configurable per server (default) & per instance -->
  <tracker>
    <threshold>50</threshold><!-- Threshold in msec for filtering out events
before forwarding it to the Collector agent. -->

```

```
</tracker>
</activity-collector-config>
```

i The new setting will only take effect after your .NET application is restarted. For ASP.NET that means an IIS reset or recycling the application pool.

i This setting has a significant effect on the overall overhead of Precise for Microsoft .NET agent on your system. Lowering this value too much can cause your Web application and server to slow down considerably. If Precise for Microsoft .NET is installed on a development server, you can set this value to 0 to collect all data. On heavy loaded production systems, it is advisable not to change the default.

More information about controlling the Precise for Microsoft .NET overhead on your .NET application in the *Precise Administration Guide*.

About Precise for Microsoft .NET agent ports

The Precise for Microsoft .NET data collection is based on establishing a TCP connection between a tracking module (`tracker.dll`), the activity Collector and instrumentation agent. The default port numbers for the installation are respectively 20755 and 20756. If any of these port numbers are in use by another application on the server, you can change its value respectively in the `collector.xml` and `instrumenter.xml` files.

Port conflicts can cause the Precise for Microsoft .NET Collector not to work and to submit errors. The following is an error example that can appear in the `dotnet.collector.activity.trc` file:

```
=====
ID      : CONFIG-0000000
Time    : 2020-11-23 10:03:54.750 GMT+02 i3 Time    : 2020-11-23 08:03:54.750 GMT
Process : psdn_dncol_act.exe -l (ID:2704)
Logger  : com.Symantec.apm.i4dotnet.collector.activity
Msg     : Exception in remoting : System.Net.Sockets.SocketException: Only one usage of
each socket address (protocol/network address/port) is normally permitted
=====
```

The following is an error example that can appear in the `dotnet.collector.dncol_isntr.trc` file:

```
===== ID      : CONFIG-0000000
Time    : 2020-11-23 10:09:05.842 GMT+02 i3 Time    : 2020-11-23 08:09:05.842 GMT
Process : psdn_dncol_instr.exe (ID:4972)
Logger  : com.Symantec.apm.i4dotnet.collector.dncol_instr
Msg     : Unable to setup TCP server on port 20756, check that it is not used by another
process, ex=Only one usage of each socket address (protocol/network address/port) is
normally permitted
=====
```

Advanced installation of .NET tier collectors

This section includes the following topics:

- [Defining the server upon which the FocalPoint is to be installed](#)
- [Sampling Alerts custom metrics from the monitored instance](#)
- [Defining application pool\(s\) for monitoring](#)
- [Monitoring custom DLLs, classes, and methods](#)

Defining the server upon which the FocalPoint is to be installed

The default location for the FocalPoint installation is on the same server as the Precise Framework. The General tab allows you to define a different server as the location for the FocalPoint installation.

To enter FocalPoint inputs


1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the General tab.
3. Click the drop-down menu and select the server which the FocalPoint should be installed upon.
4. Click **OK**.

Sampling Alerts custom metrics from the monitored instance

To enable sampling of Alerts custom metrics for this instance


1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the General tab.
3. Mark the “Enable sampling of custom metrics for this instance” check box.
4. Click **OK**.

Defining application pool(s) for monitoring

 This feature is only available for ASP .NET instances. By default, all application pools running on the monitored IIS server are monitored.

To define specific application pool(s) to be monitored as part of this instance

1. After adding all instance properties inputs, click **Advanced**.
2. Click the IIS tab.
3. In the Application Pool(s) field, specify the application pool(s) to be monitored, including an asterisk before and after the application pool name.

 Only application pools with names containing the specified value will be monitored as part of the instance.

4. Click **OK**.

Monitoring custom DLLs, classes, and methods

To add visibility to your .NET application, you may consider adding DLLs, classes, and methods to the instrumentation configuration. Precise for Microsoft .NET supports several levels of granularity for custom code visibility - from entire DLLs, through classes, and to specific methods.

For further details and concrete examples on achieving higher visibility for your custom code, see the Configuring Precise for Microsoft .NET section in the *Precise Administration Guide*.

Installing Oracle tier collectors

This section includes the following topics:

- [Installing on Oracle Multitenant architecture](#)
- [Pre-installation tasks](#)
- [Installing an Oracle Tier instance](#)
- [Installing an Oracle cluster](#)
- [Post-installation action items](#)

Based on your application, you can install special Collectors (Interpoints) that gather information on the activities and resource consumption of special application components. The Interpoints then correlate this information with Oracle information so that you can see ERP users, transactions, reports, and so on.

You can install the following Interpoints:

- Interpoint for Oracle Applications
- Interpoint for PeopleSoft
- Interpoint for SAP
- Interpoint for Siebel

See the appropriate section for installing each Interpoint.

Installing on Oracle Multitenant architecture (Containerized databases)

You can install Precise on Oracle Multitenant architecture (containerized databases) on Oracle 12c R2.

Precise monitors the container root and all of the open pluggable databases.

At the time of installing the Precise for Oracle collector for a containerized 12.2 Oracle instance, all pluggable databases (PDBs) should be open and not in restricted mode. Any PDBs that are in a closed state or in restricted mode at the time of instance installation are ignored for collector schema creation. If and when such PDBs are opened, the Precise for Oracle collector schema must be manually created on those PDBs using manual schema scripts.

When a new PDB is added to an Oracle 12c R2 instance monitored with Precise, the Precise for Oracle schema must be created on it based on the instructions for Precise for Oracle manual schema collector installation and the Precise for Oracle collectors must be restarted.

Pre-installation tasks

Most of the screens in this installation require you to input details regarding your information systems. Before installing an Oracle Tier instance, compile a list of all required user inputs based on the screen names and tables below. Each table (in the sections below) lists the options per screen.

Before installing an Oracle Tier instance, verify that you have performed the following tasks:

- Use the Precise Framework Installer to install framework components
- If you intend to install SAP Interpoints:
 - Install the SAP GUI on the server that the Oracle Tier Collector is installed on.
If you intend to install an SAP Interpoint on a 64-bit Windows server, you need to install the SAP GUI for 64-bit Windows.
 - Verify that the RFC functions STUM_WP_SERVER_ACTIVITY and TH_SERVER_LIST are enabled in your application.
 - Configure an additional working process (dialog type) for the use of the SAP Interpoint.
For more information on the RFC usage, see the technical note: [How Precise Interpoint for SAP Impacts SAP Application Server Load and Performance](#).

- Create an SAP user account that the SAP extension will use to access the system. If you install Precise for SAP, you can use the same user as is used by Precise for SAP.
- Verify that a JDBC connection from the Oracle FocalPoint to the monitored instance server is enabled. This means that the DBA needs to configure the Oracle Listener port, otherwise only local connections will be enabled.

Pre-installation tasks for the Oracle Tier on a Windows server

To perform pre-installation tasks for an Oracle Tier on an Oracle server


1. If you want to install on a Windows server, add the "precise" user to the 'ora_dba' group.
2. Verify that you have an Oracle DBA user name and password. The user should also have SYSDBA privileges. During the Oracle Tier installation, the installer creates a schema in the Oracle database. To do so, it is required to specify an Oracle DBA user. This user is used only during the installation. Precise products do not use or save the DBA user name or password for future use.
3. Set the Init.ora parameter.
For all versions, set: `timed_statistics = TRUE`
4. When installing a new Oracle Agent on Windows with Oracle 12c and later where:
 - the listener is already installed
 - the Oracle service is running using Oracle home user who is a standard Windows user and not part of the Admin group
 - i. Allow full access to the Oracle home user on the Precise root directory on the monitored machine (the machine where the Oracle Agent is being installed or the Oracle instance is running).
 - ii. Add the Oracle home user to the performance monitoring group.

Pre-installation tasks for the Oracle Tier on a UNIX server

To perform pre-installation tasks for an Oracle Tier on a UNIX server

1. If you want to install on a UNIX server, add the "precise" user to the same group as the Oracle software owner.
The Precise for Oracle agent reads the Oracle SGA directly. To do so, the user must be in the same group as the Oracle user to have access to the Oracle shared memory.
2. If you are installing on a Sun Solaris operating system, verify that the /proc file system is available.
3. Verify that the file system where you plan to install the software is mounted with the SETUID option.
4. Verify that the shared library path variable (LD_LIBRARY_PATH, SHLIB_PATH, or LIB_PATH, depending on the operating system) is not set in the "precise" user application.
5. Verify that you have an Oracle DBA user name and password. For Oracle 9i and later, the user should also have SYSDBA privileges.
During the Oracle Tier installation, installer creates a schema in the Oracle database. To do so, it is required to specify an Oracle DBA user. This user is used only during the installation. Precise products do not use or save the DBA user name or password for future use.
6. Set the Init.ora parameter.
For all versions, set: `timed_statistics = TRUE`

Pre-installation tasks for an Oracle Tier on an AIX server

 When installing an Oracle Tier instance, the Oracle FocalPoint, by default, is installed on the same server as the Precise Framework. Therefore, if the Precise Framework is installed on a AIX server and you are not changing the default installation, you must follow the pre-installation task below.

If you want to install a Precise for Oracle FocalPoint on an AIX server, first verify that the server on which the FocalPoint will run has Asynchronous I/O (AIO) available.

To check whether the AIO subsystem is available

- Perform the following command:
`lsdev -C | grep aio`
 The result should be similar to:
`aio0 Available Asynchronous I/O`
 If the result is:
`aio0 Defined Asynchronous I/O`, then you need to make the AIO subsystem available.
 To make the AIO subsystem available:
- Perform the following command:
`/usr/sbin/mkdev -l aio0`

To check whether the AIO subsystem is configured to be available upon the next system startup

1. Perform the following command:
`lsattr -El aio0`
2. Check the value of the autoconfig parameter. It should be equal to available and not to defined.

To configure the AIO subsystem to be available upon the next system startup

- Perform the following command:
`/usr/sbin/chdev -l aio0 -P -a autoconfig=available`

Installing an Oracle Tier instance

This section describes the procedures that are needed to install an Oracle Tier instance. You have the option of adding a new instance, as well as adding a new application. For information on editing or removing an existing instance, see [Editing or removing tier instances or clusters](#).

Adding an Oracle Tier instance

On the AdminPoint Instances screen, you can add a new Tier instance.

 Before adding a Tier instance, create a list of all required inputs based on the screen information below.

To add a Tier instance


1. From StartPoint, click the AdminPoint tab.
2. Click the Installation tab. The list of Applications appears.
3. If the Application exists, click **Edit** to edit the Application. If this is a new Application, then click **Add**, and then follow the details for adding an application.
4. Once the Application tab is opened, then click **Oracle**.
5. Select **Add** from the Oracle tab.
6. If the Oracle instance is new, then select **Add**. If the Oracle instance exists in an existing application, select **Add Existing**.

 Always refresh AdminPoint after adding an instance.


Defining Oracle property settings

To enter the properties of an Oracle Tier instance


1. Click the drop-down menu and select the server with the Oracle instance. Click **Add** to enter the name of a server not on the list. For more information, see [Adding a new server](#).
2. Click the drop-down menu and select the Oracle SID from the list. If this is a Container Database, this must be the CDB name.
3. Enter the Oracle home folder. If it does not appear correctly, click the **browse (...)** button to search for the appropriate home folder.
4. Click the drop-down menu and select the Oracle version.

 This is the Oracle release version of the instance, which is either 10g, 11g, 12c R1, or 12c R2.


5. Click the drop-down menu and select the Oracle Listener port.
6. Enter the user name.

 The name of the Oracle user that has DBA privileges. This user is used for the initial connection with the Oracle database and to create a user named "precise" in the database. The DBA user is used only for the above tasks during the installation. Once it finishes its tasks, it is not used any more.

7. Enter the password.

 This is the password for the Oracle DBA user, encrypted using the Precise CLI utility. The DBA password is not saved by Precise.

8. Click the drop-down menu and select the method of connection.
 - The Oracle Tier installation requires creating objects (views and packages) in the SYS schema and therefore, a privileged access to the SYS schema is required. Use the "Connect As" option to allow connecting to your Oracle instance with a user that has SYSDBA privileges.
 - If you did not use the manual schema installation, it is required that you connect with a DBA user as 'SYSDBA'.
For more information on using the manual schema, see [Manually installing Precise for Oracle database schemas](#).
 - To connect as 'SYSDBA', you should enter the Oracle initialization parameter remote_login_passwordfile as a password file, meaning that this parameter must be set to share or exclusive, and grant SYSDBA privileges to the DBA user for the Oracle Tier installation.
9. Click **Next** to continue to the next screen.

 If a browse screen appears, select the file that appears in the "File of type" field, on the installation disk, in the folder Precise/distribution.

Entering a user for an Oracle Schema credential

To enter a new user for an Oracle Schema credential

1. Select "Create new user."
2. Enter the user name. If this is installed in an Oracle Container Database, the user must be prefixed **C##**.
3. Enter the appropriate password.
4. Re-enter the password.
5. Click **Next**.

To enter an existing user for an Oracle Schema credential

1. Select "Use an existing user."
2. Click **Find User** to locate an existing user name.
3. On the Find User dialog screen, click **Find** to filter for an existing (available) user name.

4. Select an available user name, and then click **OK**. If this is installed in an Oracle Container Database, the user must be prefixed **C##**.
The selected user name now appears on the Oracle Schema credential screen.
5. On the Oracle Schema credential screen, enter the appropriate password for the existing user.
6. Click **Next**.

About the tablespace creation screen

The tablespace creation script screen enables the user to activate default tablespace creation, or to create customized tablespaces.

Click **Next** to activate default tablespace creation.

If you want to modify Oracle instance tablespace creation, copy the text that appears on the screen to SQL*PLUS and run as you wish. Then click **Next** to continue installation while using the tablespaces you have created.

About the AdminPoint Tier installation preview screen

The preview screen signifies that the AdminPoint Tier installer has gathered enough information to begin the installation phase.

The preview screen displays the following details before installation begins:

- Server name or IP address
- The name of the monitored server
- What actions will be performed in their respective order
- Installation folder (location)
- Required disk space
- Currently available disk space

At this screen, you can still change any of the settings displayed. Click **Back** to change any of the displayed settings. Click **Next** to continue installation. Click **Cancel** to stop the installation process.

About the AdminPoint Tier installation progress screen

This screen appears when the AdminPoint Tier installer is actually performing installation. Installation may take several minutes.

The progress screen visually displays the progress of actual installation on selected servers.

About the AdminPoint Tier installation complete screen

This screen appears when the AdminPoint Tier Installer has completed installation of all Tier instances.

If there are no action items, click **Finish** (it will be the only option available) to complete the instance installation. If there are action items, click **Next** (it will be the only option available).

About the AdminPoint Tier Action Items screen

After a Tier instance is installed, you must perform post-installation tasks as may be required. Only after completing any post-installation tasks required can you start using the Tier instances you have just installed.

Perform any tasks displayed on this screen. Click **Execute** for Precise to perform the action items. Click **Mark as done** if you have performed the action items yourself.

Installing an Oracle cluster

Configuring a cluster is supported for Oracle RAC (Real Application Clusters). For more information on how to install an Oracle instance for RAC, see the [Installing the Oracle instance](#) section. The Cluster setting dialog is available only in case you have Oracle clusters or instances. For information on editing or removing an existing instance, see [Editing or removing tier instances or clusters](#).

Adding an Oracle cluster

You can add an Oracle cluster via the Cluster Settings dialog box.

To add a cluster

1. From StartPoint, click the AdminPoint tab.
2. Click the Setup tab.
3. From the drop-down menu, select **Instances & Clusters**.
4. Click the **All clusters** tree item.
5. At the bottom of the Display Instances and Clusters screen, click **Add Cluster**. An Add New Cluster dialog box appears.
6. Select the Oracle technology from the list.
7. Select the application from the list.
 - If the desired application is not on the list, follow steps a-d:
 - a. Click **Add**.
 - b. In the Application Name field, type in the new application name.
 - c. On the Application System field, select the system application from the list.
 - d. Click **OK**.

i To install a cluster in an application, you must have an explicit ADMINISTRATE . INSTALL for the application in which you want to install the cluster. If you only have permission for a specific technology, you will only be able to install in an application that is either empty, or is comprised of only the same technology.

8. Select a Tier from the list.
9. Click **OK** to view the next screen.

i Always refresh AdminPoint after adding a cluster.

10. Insert the name for the cluster in the Name text box.
11. Select the DB from the drop-down menu. Based on the selected database, the related instances are shown in the table under All instances.
12. Select the required instances and move them to the Selected cluster's instances table.

i Cluster must include at least one instance.

13. Click **OK**. The new cluster will be added to the available clusters list, in the main Clusters Settings dialog box.

Post-installation action items

When the Oracle Tier schema is installed, post-installation tasks may be required. This mainly depends on factors such as the Oracle version, the operating system, and the granted privileges. In addition, this depends on whether Precise for Storage or Interpoint is installed.

For installation details, see the appropriate section for the specific product.

Advanced installation of Oracle tier collectors

This section includes the following topics:

- [Defining the server upon which the FocalPoint is to be installed](#)
- [Sampling Alerts custom metrics from the monitored instance](#)
- [Collapsing statements with different constants into a single statement with bind variables](#)
- [Saving Oracle session information for a specified period of time](#)
- [Associating Oracle activity with network statistics](#)
- [Specifying additional Oracle Listener ports](#)
- [Defining schema specific configuration parameters](#)
- [Monitoring RAC installations](#)
- [Monitoring ERP](#)
- [Manually installing Precise for Oracle database schemas](#)

Defining the server upon which the FocalPoint is to be installed

The default location for the FocalPoint installation is on the same server as the Precise Framework. The General tab allows you to define a different server as the location for the FocalPoint installation.

To enter FocalPoint inputs

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the General tab.
3. Click the drop-down menu and select the server which the FocalPoint should be installed upon.
4. Click **OK**.

Sampling Alerts custom metrics from the monitored instance

To enable sampling of Alerts custom metrics for this instance

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the General tab.
3. Mark the box "Enable sampling of custom metrics for this instance."
4. Click **OK**.

Collapsing statements with different constants into a single statement with bind variables

This option will handle all statements that have the same text but different literals as the same statement. The data will not include literals but the first value used for each literal.

To collapse statements with different constants into a single statement with bind variables

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the Settings tab.
3. Check the box "Collapse statements with different constants into a single statement with bind variables."
4. Click **OK**.

Saving Oracle session information for a specified period of time

Precise for Oracle saves historical files that contain performance information. These files are parsed and loaded into the PMDB. When session information is viewed, Precise for Oracle accesses these files. You can specify the retention period that the session information is saved.

To save Oracle session information for a specified period of time

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the Settings tab.
3. Click the drop-down menu and select the desired time for saving information from the last Oracle session.
4. Click **OK**.

Associating Oracle activity with network statistics

This is the network time experienced by Oracle entities, provided you install the Insight Savvy for Network on this server.

To enter Oracle activity settings associated with network activity and performance

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the Settings tab.
3. Check the box "Associate Oracle activity with network statistics."
4. Click **OK**.

Specifying additional Oracle Listener ports

This option is relevant if you have installed the Insight Savvy for Network on the Oracle server. You can add TCP/IP ports that are used by SQL*Net Listeners to have network traffic on those ports monitored. For more information, see [Configuring a Listener to listen to a different port](#).

To specify additional Oracle Listener ports

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the Settings tab.
3. Check the box "Associate Oracle activity with network statistics."
4. Enter the Oracle Listener port number.
If the port number already appears on the list, select it.
5. If the port number is new, click **Add** and enter the new Listener port number.
6. Click **OK**.

To remove an Oracle Listener port

1. Select the Oracle Listener port number from the list.
2. Click **Remove** to delete the port number from the list.
3. Click **OK**.

Defining schema-specific configuration parameters

To define schema specific configuration parameters

1. (Optional) Click the drop-down menu and select a tablespace name.

i This is the name of the tablespace in which the installer will create the Precise for Oracle schema. You can select an existing tablespace name from the list, or enter a new tablespace, causing the installer to create a new tablespace for the schema. If all your tablespaces are stored in Oracle files that reside on RAM devices, Precise for Oracle tablespaces must also reside in a tablespace stored in an Oracle file that resides on a RAM device.

2. If a tablespace is chosen, enter the datafile for the tablespace.

i This is the name of the datafile in which the tablespace will be created. This text box is only available if you use a new tablespace. If the Oracle instance belongs to an Oracle Real Application Cluster (RAC) database, you must use a datafile on a shared storage device that is accessible to all Oracle instances of the Oracle RAC.

3. (Optional) Click the drop-down menu and select a temporary tablespace name.

i This is the name of the temporary tablespace in which the installer will create the Precise for Oracle schema. You can select an existing temporary tablespace name from the list, or enter a new one, causing the installer to create a new temporary tablespace for the schema. If all your tablespaces are stored in Oracle files that reside on RAM devices, Precise for Oracle tablespaces must also reside in a tablespace stored in an Oracle file that resides on a RAM device.

4. If a temporary tablespace name is chosen, enter the datafile for the temporary tablespace.

i This is the name of the datafile in which the temporary tablespace will be created. This text box is only available if you use a new temporary tablespace. If the Oracle instance belongs to an Oracle RAC database, you must use a datafile on a shared storage device that is accessible to all Oracle instances of the Oracle RAC.

5. Select where to store the datafiles.

To browse for the appropriate folder, click the **browse (...)** button.

For Oracle ASM specify ASM disk group instead (for example: +DISKGRP1/ora11asm/)

i This is the folder where you want to keep the datafiles for the new tablespace and/or the new temporary tablespace. By default, this is the Oracle home folder. You can type a different folder path or click **browse (...)**.

6. Click **OK**.

Monitoring RAC installations

i The RAC tab appears on the advanced screen only if the system detected that you are installing an instance that is part of a cluster.

If you want to administrate RAC settings in Precise, you can do it also via the Configuring Clusters option in AdminPoint.

To change the default

1. Enter the cluster name for the RAC database.
2. Click **OK**.

Monitoring ERP

Use the ERP Tab to define the SAP Interpoint.

- i** The Oracle Tier Collectors can display correlated information on the activities and resource consumption of your SAP application components in your Oracle instance. Select this option to correlate SAP information with Oracle resource consumption.

To install the SAP Interpoint for an Oracle instance

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the ERP tab.
3. Mark the box "Install SAP Interpoint on this instance."
4. Enter the SAP system name.
This is the SID of the SAP instance to monitor. The SID consists of three uppercase characters.
5. Enter the application server name to be used to connect to the SAP system.
6. Enter the system number (a two-digit system number of the application server).
7. Enter the user name.

- i** The SAP Interpoint uses this user to connect to the SAP system for retrieving system information. Verify that you are using an SAP user that you defined as part of the pre-installation tasks.

8. Enter the password.
9. Enter the name of the SAP system client.
10. Click **OK**.

For information on the installation of other ERP systems, such as Siebel and Oracle Applications, see [Installing Siebel tier collectors](#) and [Installing Oracle Applications tier collectors](#).

To install PeopleSoft extension for an Oracle instance

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the ERP tab.
3. Mark the box "Install the PeopleSoft extension."

- i** The Oracle Tier Collectors can display correlated information of the activities and resource consumption of your PeopleSoft application components in your Oracle instance. Select this option to correlate PeopleSoft information with Oracle resource consumption.

Manually installing Precise for Oracle database schemas

The Precise for Oracle installation process automatically installs schemas on the Oracle database. This process must be performed for each Oracle instance installed. If you install Oracle instance schemas only, FocalPoint schemas need not be previously installed. To manually install Oracle instance schemas only

1. Set the Oracle instance manual schema installation to "true" by running the following script on the Precise root folder on the main Precise FocalPoint machine.

```

• Windows
infra\bin\psin_cli.bat
-i3-user user-name

{-i3-encrypted-password encrypted-password
| -i3-clear-password clear-password}

```

```
-action settings-update
-name manual-install-oracle-schema
-value true
```

- **UNIX**

```
./infra/bin/psin_cli.sh
-i3-user user-name
```

```
{-i3-encrypted-password encrypted-password
```

```
| -i3-clear-password clear-password}
```

```
-action settings-update
-name manual-install-oracle-schema
-value true
```

2. Manually install the Precise for Oracle database schemas.
3. Install the Oracle Tier instance, using the Precise installer.

To manually install Precise for Oracle database schemas

1. On the server where Precise Oracle collector will be installed, perform the following steps:
 - a. For Oracle 12c, refer to file `<precise_root>\product\oracle\install\12c\README.txt` and follow the instructions there. This would create `<precise_root>\product\oracle\install\12c\DBA_Install_Base_Objects_12c.sql`.
 - b. Connect to the monitored instance with DBA user privileges (connect "as sysdba").
 - c. Find the appropriate file according to the monitored instance version, and run the corresponding SQL script using SQL*PLUS or SQL Developer.
 - For Oracle 9i `<precise_root>\product\oracle\install\9i\DBA_Install_Base_Objects_9i.sql`
 - For Oracle 10g `<precise_root>\product\oracle\install\10g\DBA_Install_Base_Objects_10g.sql`
 - For Oracle 11g `<precise_root>\product\oracle\install\11g\DBA_Install_Base_Objects_11g.sql`
 - For Oracle 12c `<precise_root>\product\oracle\install\12c\DBA_Install_Base_Objects_12c.sql`
 - d. Edit the file and replace the parameters according to the instructions in the file. For Oracle 12c, no replacements are required at this stage.
2. In that same location, perform the following steps:
 - a. Connect to the monitored instance with Precise user privileges.
 - b. Find the appropriate file according to the monitored instance version, and run the corresponding SQL script using SQL*PLUS or SQL Developer.
 - For Oracle 9i `<precise_root>\product\oracle\install\9i\Install_I40_Objects_9i.sql`
 - For Oracle 10g `<precise_root>\product\oracle\install\10g\Install_I40_Objects_10g.sql`
 - For Oracle 11g `<precise_root>\product\oracle\install\11g\Install_I40_Objects_11g.sql`
 - For Oracle 12c `<precise_root>\product\oracle\install\12c\Install_I40_Objects_12c.sql`

For Oracle 12c containerized, the SQL script has to be run on the root container as well as on all PDBs.
3. If the Oracle Tier is installed on Windows, log in to the server that the Oracle Tier was installed on, browse to the `<precise_root>` folder, and run the following command after installing the Oracle Tier Collector on that server:

- For 32-bit Oracle:
products\oracle\bin\psor_collector_starter.exe *INSTANCE_NAME* -i -b32
- For 64-bit Oracle:
products\oracle\bin\psor_collector_starter.exe *INSTANCE_NAME* -i -b64
INSTANCE_NAME should be entered in uppercase letters only.

To install Precise for Oracle without using the Oracle's system user as an installation parameter

1. To manually create the schema and the Precise Oracle user, use Oracle's system (dba) user.
2. Within the installation parameters, choose **Connect As: Normal**.

To reset the Precise for Oracle installation process to automatically install schemas on the Oracle database

1. Reset the Oracle instance manual schema installation to "false" by running the following script on the Precise root folder on the main Precise FocalPoint.

- **Windows**

```
infra\bin\psin_cli.bat
-i3-user user-name
```

```
{-i3-encrypted-password encrypted-password
```

```
| -i3-clear-password clear-password}
-action settings-update
-name manual-install-oracle-schema
-value false
```

- **UNIX**

```
./infra/bin/psin_cli.sh
-i3-user user-name
```

```
{-i3-encrypted-password encrypted-password
```

```
| -i3-clear-password clear-password}
-action settings-update
-name manual-install-oracle-schema
-value false
```

Installing SQL Server tier collectors

This section includes the following topics:

- [Pre-installation tasks](#)
- [Installing a SQL Tier instance](#)
- [Post-installation action items](#)

Based on your application, you can install special Collectors, called Interpoints that gather information on the activities and resource consumption of special application components. The Interpoints then correlate this information with MS SQL Server information so that you can see ERP users, transactions, reports, and so on.

You can install the following Interpoints:

- Interpoint for PeopleSoft
- Interpoint for SAP
- Interpoint for Siebel

See the appropriate section for installation of each Interpoint.

Pre-installation tasks

Most of the screens for this installation require you to input details regarding your information systems. Before performing this installation, compile a list of all required user inputs based on the procedures below.

Before installing a SQL Tier instance, verify that you have performed the following tasks:

- Use the Precise Framework Installer to install framework components
- Create a Microsoft SQL Server login name with system administrator privileges and a password. This is optional for the SQL Server Tier; you may use the Microsoft Windows authentication option instead.
- If you intend to install SAP Interpoints, install the SAP Remote Function Call (RFC) client on the server that the SQL Server Tier Collector is installed on. Verify that the RFC functions STUM_WP_SERVER_ACTIVITY and TH_SERVER_LIST are enabled in your application. Define an additional working process within SAP to be used by the SAP Interpoints. This additional process will help avoid a queue of working processes that may be caused by an RFC call that SAP Interpoint executes through a specially allocated SAP working process. Create an SAP user account that the SAP extension will use to access the system. If you install Precise for SAP, you can use the same user as is used by Precise for SAP. For more details on the required authorizations, see [Pre-installation tasks for SAP](#).
- Close the Services window in the Control Panel if you are installing on a Windows server.
- If you want to use the Recommend feature in Precise for SQL Server with different SQL Server versions, verify that all specific versions of the SQL Server clients are installed on the Precise for SQL Server FocalPoint server.
- When running the Collector in remote sampling mode, the Collector Windows Service credentials requires System Administrator privileges on the remote server (by default, the Collector service is run under the Local System account, which does not have privileges on other servers).
- If you are installing an MS SQL 2005 Collector on a Framework with an MS SQL 2008 PMDB, verify that MS SQL 2008 client tools are installed on the machine with MS SQL 2005.

Installing a SQL Tier instance

This section describes the procedures that are needed to install a SQL Tier instance. You have the option of adding a new instance, as well as adding a new application. For information on editing or removing an existing instance, see [Editing or removing tier instances or clusters](#).

Internationalization

To facilitate SQL Server Internationalization verify that:

- The locale of the PMDB, FocalPoint, PMDB instances, and BA machines and servers with monitored SQL instances are valid (and are the same for all servers).
- The instance and database collation of the PMDB and monitored SQL instances are the same, and support chosen locale.


Adding a SQL Tier instance

On the AdminPoint Instances screen, you can add a new Tier instance.

 Before adding a Tier instance, create a list of all required inputs based on the screen information below.

To add a Tier instance

1. From StartPoint, click the AdminPoint tab.
2. Click the Setup tab.
3. From the drop-down menu, select **Instances & Clusters**.
4. Click the **All instances** tree item
5. At the bottom of the Display Instances & Clusters screen, click **Add Instance**. An Add New Instance dialog box appears.
6. Select the required technology from the list.
7. Select the application from the list.
If the desired application is not on the list, follow steps a-d:
 - a. Click **Add**.
 - b. In the Application Name field, type in the new application name.
 - c. On the Application System field, select the system application from the list.
 - d. Click **OK**.

 To install an instance in an application, you must have ADMINISTRATE . INSTALL permission for the application in which you want to install the instance. If you only have permission for a specific technology, you will only be able to install in an application that is either empty, or is comprised of only the same technology.


8. Select a Tier from the list.
9. Click **OK** to view the next screen.

 Always refresh AdminPoint after adding an instance.

Defining SQL property settings

To define SQL property settings

1. Click the "SQL Server Instance / <Host>,<Port>" drop-down menu and select the SQL Server instance.

 This is the name of the SQL Server instance you want to monitor. The list includes all instances that were detected in the Local Area Network. To monitor a different instance, type the instance name. SQL Server instances that contain the '\$' sign are not supported. If you choose a remote SQL Server instance, you will see the remote host server in the Servers list.

i You can also insert an instance using the format "<host>,<port>," where <host> is the server name and <port> is the port of the SQL server instance. This is useful when the SQL Server browser service is disabled or deactivated.

2. Click the "Monitor SQL Server activity from this server" drop-down menu and select the server from the list. Click **Add** to enter the name of a server not on the list. For more information, see [Adding a new server](#).

i This is the server where you want to install the SQL Server Tier Collector. The server name or IP address appears in the list only if you previously defined it as a Precise server. You can install the Collector either on the sampled server, or on a remote server. If you wish to associate the Collector with Precise for Storage, you must install the Collector on the sampled server.

i When you want to delete the server, you will have to delete the dependent instances first before you are allowed to remove this server.

3. Click the "Connect using" drop-down menu and select the authentication type for the SQL Server.

i This is the authentication type the SQL Server Tier Collector will use to log in to the SQL Server instance. Select Windows Authentication to log in with the Windows user used to start the Precise for SQL Server service. Select SQL Server Authentication to log in with an existing SQL Server login name. To use Windows Authentication, you may need to change the user with which you log in to the Precise for SQL Server services (this means that this user needs to become the user who is defined in the SQL instance and has the Administrator permissions). If the Collector is installed on the monitored server, open the Services window and change the user with which you log in to the Precise for SQL Server Collector and the Precise Listener agent service. If the Collector is installed on a different server than the monitored instance, see step 6 below. When installing the Listener agent, you can choose to install all services with a dedicated Log In user.

4. Enter your Login name.

i If you connect using Windows Authentication, the login is based on the login used to start the Precise for SQL Server agents. If you choose SQL Server Authentication, an existing SQL Server user name and password with system administrator privileges are required here.

5. Enter the password.
6. If the PMDB is using Windows Authentication, or the Collector is using remote sampling, at the bottom of the screen, under "Use different Windows Service credentials than the LocalSystem account," enter accounts with the following permissions:

Table 18-1 Permissions

When	Permission	Where
Remote sampling	User with full control permission	On the Precise folder
	User who is allowed to use Windows Authentication	On the PMDB server
	User with full control permission	On the Precise folder

When	Permission	Where
Remote sampling and PMDB using Windows Authentication	User who is allowed to use Windows Authentication User with full control permission	On the PMDB server On the Precise folder
PMDB uses Windows Authentication and associating to Precise for Storage	System Administrator	On the monitored server

To add the parameters

- a. On the Windows Authentication Settings screen, enter the user name.
- b. Enter the Password.
- c. Enter the Domain or Server name.

7. Click **Next**.

About the AdminPoint Tier installation preview screen

The preview screen signifies that the AdminPoint Tier installer has gathered enough information to begin the installation phase.

The preview screen displays the following details before installation begins:

- Server name or IP address
- The name of the monitored server
- What actions will be performed in their respective order
- Installation folder (location)
- Required disk space
- Currently available disk space

At this screen, you can still change any of the settings displayed. Click **Back** to change any of the displayed settings. Click **Next** to continue installation. Click **Cancel** to stop the installation process.

About the AdminPoint Tier installation progress screen

This screen appears when the AdminPoint Tier installer is actually performing installation. Installation may take several minutes.

The progress screen visually displays the progress of actual installation on selected servers.

About the AdminPoint Tier installation complete screen

This screen appears when the AdminPoint Tier Installer has completed installation of all Tier instances.

If there are no action items, click **Finish** (it will be the only option available) to complete the instance installation. If there are action items, click **Next** (it will be the only option available).

About the AdminPoint Tier Action Items screen

After a Tier instance is installed, you must perform post-installation tasks as may be required. Only after completing any post-installation tasks required can you start using the Tier instances you have just installed.

Perform any tasks displayed on this screen. Click **Execute** for Precise to perform the action items. Click **Mark as done** if you have performed the action items yourself.

Post-installation action items

When the SQL Server Tier is installed, post-installation tasks may be required. This may depend on whether Precise for Storage or ERP Extension is installed.

After you install SQL Server, a user who is a member of the sysadmin fixed server role must launch Database Engine Tuning Advisor before anyone else. When the sysadmin user launches Database Engine Tuning Advisor that action initializes the application for use by others. After Database Engine Tuning Advisor is initialized, any user who is a member of the db_owner fixed database role can use it to tune tables on databases they own. For more information about initializing Database Engine Tuning Advisor, see [Start and Use the Database Engine Tuning Advisor](#) on the MSDN website.

Installing the product Interpoint for PeopleSoft Collector trigger

If you have installed the Interpoint Collector to monitor PeopleSoft activities, you need to create a trigger on the table PSPRCRQST in the PeopleSoft database. In addition, you need to enable the database monitoring parameter in the PeopleSoft configuration file.

To install the Interpoint for PeopleSoft Collector's trigger and enable the database monitoring parameter

1. Open the PeopleSoft configuration file: psappsrv.cfg (usually under PT%version%/appserv/%domainName%). If EnableDBMonitoring=1, proceed to step 6. Otherwise, proceed to step 2.
2. Disconnect all PeopleSoft users.
3. Shut down all PeopleSoft servers.
4. Edit the DB Monitoring parameter to be TRUE: EnableDBMonitoring=1
5. Restart the PeopleSoft application servers.
6. Using SQL Query Analyzer, connect to the database holding the PeopleSoft tables. Verify that you are connecting with a user that is a member of the db_owner database role in the database.
7. Execute the following batch:

```

if exists (select name from sysobjects where name = 'precise_psprcsrqt_register' and type = 'TR')
drop trigger precise_psprcsrqt_register go
if exists (select name from sysobjects where name = 'VERITAS_psprcsrqt_register' and type = 'TR')
drop trigger VERITAS_psprcsrqt_register go
if exists (select name from sysobjects where name = 'Symantec_psprcsrqt_register' and type = 'TR')
drop trigger Symantec_psprcsrqt_register go
create trigger precise_psprcsrqt_register on PSPRCRQST for update as
declare @oprid char(30), @prcsinstance int, @old_status int, @new_status int, @info binary(50)
select @old_status = RUNSTATUS from deleted select @new_status = RUNSTATUS from inserted if
(@new_status <> 7) or (@old_status = 7) return
select @oprid = OPRID, @prcsinstance = PRCSINSTANCE from inserted
set @info = convert(binary(50), rtrim(@oprid) + ',' + convert(varchar(20), @prcsinstance))
set context_info @info go

```


Advanced installation of SQL Server tier collectors

This section includes the following topics:

- [Defining the server upon which the FocalPoint is to be installed](#)
- [Sampling Alerts custom metrics from the monitored instance](#)
- [Monitoring ERP](#)

Defining the server upon which the FocalPoint is to be installed

The default location for the FocalPoint installation is on the same server as the Precise Framework. The General tab allows you to define a different server as the location for the FocalPoint installation.

To enter FocalPoint inputs

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the General tab.
3. Click the drop-down menu and select the server which the FocalPoint should be installed upon.
4. Click **OK**.

Sampling Alerts custom metrics from the monitored instance

To enable sampling of Alerts custom metrics for this instance


1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the General tab.
3. Mark the box "Enable sampling of custom metrics for this instance."
4. Click **OK**.

Monitoring ERP


Entering ERP tab inputs for a SQL Server instance

Perform the following procedure in the order it is given.

To install SAP Interpoint for a SQL Server instance


 The SQL Server Tier Collectors can display correlated information on the activities and resource consumption of your SAP application components in your SQL Server instance. Select this option to correlate SAP information with SQL Server resource consumption.

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the ERP tab.
3. Mark the box "Install SAP Interpoint on this instance."
4. Enter the SAP system name (the SID of the SAP instance to monitor which consists of three uppercase characters).
5. Enter the application server name to be used to connect to the SAP system.
6. Enter the system number (a two-digit system number of the application server).
7. Enter the user name.

 The SAP Interpoint uses this user name to connect to the SAP system for retrieving system information. Verify that you are using an SAP user name that you defined as part of the pre-installation tasks. For more information, see [Pre-installation tasks for SAP](#).

8. Enter the password for the SAP user name.
9. Enter the name of the SAP system client that the user will use for the connection.

To install the PeopleSoft Interpoint for a SQL Server instance, check the box "Install the PeopleSoft Interpoint."

 The SQL Server Tier Collectors can display correlated information on the activities and resource consumption of your PeopleSoft application components in your SQL Server instance. Select this option to correlate PeopleSoft information with SQL Server resource consumption.

Installing DB2 tier collectors

This section includes the following topics:

- [Pre-installation tasks](#)
- [Installing a DB2 Tier instance](#)
- [Post-installation action items](#)

With DB2, you can perform long-term analysis of resource consumption by SQL statements, users, and programs; tune SQL statements and the access path of database objects; generate SQL statement alternatives; simulate database changes for impact analysis; and recommend indexes.

Pre-installation tasks

Most of the screens for this installation require you to input details regarding your information systems. Before performing this installation, compile a list of all required user inputs based on the screen names and tables below. Each table (in the sections below) lists the options per screen.

Before installing a DB2 Tier instance, verify that you have performed the following tasks:

- Use the Precise Framework Installer to install framework components
- If you intend to install SAP Interpoints, install the SAP Remote Function Call (RFC) client on the server that the DB2 Tier Collector is installed on. Verify that the RFC functions STUM_WP_SERVER_ACTIVITY and TH_SERVER_LIST are enabled in your application. Define an additional working process within SAP to be used by the SAP Interpoints. This additional process will help avoid a queue of working processes that may be caused by an RFC call that SAP Interpoint executes through a specially allocated SAP working process. Create an SAP user account that the SAP extension will use to access the system. If you install Precise for SAP, you can use the same user as is used by Precise for SAP. For more details on the required authorizations, see [Pre-installation tasks for SAP](#).
- If you intend to associate Precise for Storage with the installed instance, verify that the Precise Listener's OS user is part of the db2adm OS group.
- When monitoring DB2 on HP, verify that the database default charset isn't roman8 (CP1051).
- Verify that a JDBC connection from the DB2 FocalPoint to the monitored instance server is enabled. This means that the DBA needs to configure the DB2 Listener port, otherwise only local connections will be enabled.
- Close the Services window in the Control Panel if you are installing on a Windows server.
- Verify that your DB2 version is minimum version 8.2. Precise for DB2 supports all fix packs of DB2 version 8.2.

Installing a DB2 Tier instance

This section describes the procedures that are needed to install a DB2 Tier instance. You have the option of adding a new instance, as well as adding a new application. For information on editing or removing an existing instance, see [Editing or removing tier instances or clusters](#).

Internationalization

- If the DB2 database uses a Chinese code page, replace the `charsets.jar` file under `<precise_root>/java/JRE/lib/` with the one provided by IBM. If this file is not replaced, installation may fail, and the following message will appear: "[IBM][CLI Driver] SQL0332N "SQL error while Connecting to local DB.""
- PMDB encoding should be UTF-8.

Adding a DB2 Tier instance

On the AdminPoint Instances screen, you can add a new Tier instance.

i Before adding a Tier instance, create a list of all required inputs based on the screen information below.

i When starting the DB2 database Collector, the following four monitor switches are automatically activated:

- SQLM_LOCK_SW - Lock information
- SQLM_STATEMENT_SW - Statement information
- SQLM_BUFFER_POOL_SW - Buffer Pool information
- SQLM_SORT_SW - Sort information

They are automatically deactivated when the DB2 database Collector goes down.

To add a Tier instance

1. From StartPoint, click the AdminPoint tab.
2. Click the Setup tab.
3. From the drop-down menu, select **Instances & Clusters**.
4. Click the **All instances** tree item
5. At the bottom of the Display Instances & Clusters screen, click **Add Instance**. An Add New Instance dialog box appears.
6. Select the required technology from the list.
7. Select the application from the list.
If the desired application is not on the list, follow steps a-d:
 - a. Click **Add**.
 - b. In the Application Name field, type in the new application name.
 - c. On the Application System field, select the system application from the list.
 - d. Click **OK**.

i To install an instance in an application, you must have ADMINISTRATE . INSTALL permission for the application in which you want to install the instance. If you only have permission for a specific technology, you will only be able to install in an application that is either empty, or is comprised of only the same technology.


8. Select a Tier from the list.
9. Click **OK** to view the next screen.

i Always refresh AdminPoint after adding an instance.

Defining DB2 property settings

To enter DB2 Tier property settings

1. Click the drop-down menu and select the server with the DB2 instance.
This is the name or IP address of the server where you want to install the DB2 Tier Collector. If you want to delete the server, you have to delete the dependent instances first before you are allowed to remove the server.
2. Click **Add** to enter the name of a server not on the list. For more information, see [Adding a new server](#).

 If the DB2 instance is running on a Windows server, only one Precise agent can be installed for each database of the instance on the server. Installing additional agents for a database will cause both agents to shut down.

3. Click the drop-down menu and select the DB2 instance to be monitored from the list.
This is the name of the DB2 instance you want to monitor. The list includes all instances that were detected in the chosen server.
4. Enter the TCP/IP Service port.
The TCP/IP port number to be used by DB2 to connect to the instance. This is the value returned by `db2 get dbm cfg` in the `SVCENAME` field (If this value is not numeric use the port used by the service which appears in `SVCENAME`).
To find the not numeric value, look for the service name in the services file in the following location:
 - **UNIX**
`./etc/services`
 - **Windows**
`<Windows system directory>\drivers\etc\services`
5. Click the drop-down menu and select the database to be used.
The DB2 database you want to monitor. The list includes all local DB2 databases in the selected DB2 instance. You can enter a database that does not appear in the list, but this DB2 database must be cataloged as a local database in the specified DB2 instance.
6. Click the drop-down menu and select the DB2 partition number.
The drop-down list contains all the DB2 instance's partition located on the chosen server. For Enterprise Extended Edition (EEE), select the DB2 partition number to be monitored. In an Enterprise Edition (EE) application, the DB2 partition number should be 0 (zero).
7. Enter the name of the DB2 user. This user must have the following privileges:
 - For monitoring purposes: DBADM and SYSMON privileges or the SYSADM privilege.
 - For installing the Precise schema: It is possible to use an existing or to create a new tablespace. For creating a new tablespace, the Precise user must also have the SYSCTRL privilege in addition to the DBADM and SYSMON privileges.
8. Enter the password for the DB2 user.
9. Click **Next**.

About the AdminPoint Tier installation preview screen

The preview screen signifies that the AdminPoint Tier installer has gathered enough information to begin the installation phase.

The preview screen displays the following details before installation begins:

- Server name or IP address
- The name of the monitored server
- What actions will be performed in their respective order
- Installation folder (location)
- Required disk space
- Currently available disk space

At this screen, you can still change any of the settings displayed. Click **Back** to change any of the displayed settings. Click **Next** to continue installation. Click **Cancel** to stop the installation process.

About the AdminPoint Tier installation progress screen

This screen appears when the AdminPoint Tier installer is actually performing installation. Installation may take several minutes.

The progress screen visually displays the progress of actual installation on selected servers.

About the AdminPoint Tier installation complete screen

This screen appears when the AdminPoint Tier Installer has completed installation of all Tier instances.

If there are no action items, click **Finish** (it will be the only option available) to complete the instance installation. If there are action items, click **Next** (it will be the only option available).

About the AdminPoint Tier Action Items screen

After a Tier instance is installed, you must perform post-installation tasks as may be required. Only after completing any post-installation tasks required can you start using the Tier instances you have just installed.

Perform any tasks displayed on this screen. Click **Execute** for Precise to perform the action items. Click **Mark as done** if you have performed the action items yourself.

Post-installation action items

When the DB2 Tier is installed, post-installation tasks may be required. Follow any instructions that might appear on the Action Items screen.

Advanced installation of DB2 tier collectors

This section includes the following topics:

- [Defining the server upon which the FocalPoint is to be installed](#)
- [Sampling Alerts custom metrics from the monitored instance](#)
- [Defining schema-specific configuration parameters](#)
- [Monitoring ERP](#)
- [Manually installing DB2 database schemas](#)

Defining the server upon which the FocalPoint is to be installed

The default location for the FocalPoint installation, is on the same server as the Precise Framework. The General tab allows you to define a different server as the location for the FocalPoint installation.

To enter FocalPoint inputs

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the General tab.
3. Click the drop-down menu and select the server which the FocalPoint should be installed upon.
4. Click **OK**.

Sampling Alerts custom metrics from the monitored instance

To enable sampling of Alerts custom metrics for this instance

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the General tab.
3. Mark the box "Enable sampling of custom metrics for this instance."
4. Click **OK**.

Defining schema specific configuration parameters

Use the Schema tab to define schema specific configuration parameters. Select from the following list of schema options for DB2 Tier schema storage properties.

To enter Schema inputs

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the Schema tab.
3. Click the drop-down menu and select a tablespace name or type the name of a new tablespace.

i This is the name of the tablespace in which the Precise Framework Installer will create the DB2 schema. Specifying a tablespace name that does not appear in the list, will cause Precise Framework Installer to create a new tablespace for the schema. The tablespace name must comply with DB2's naming conventions. The new tablespace is created on the IBMCATGROUP node group only. To create the tablespace on a different node group, you need to create it manually. Reopen the Advanced dialog, click the Schema tab, and select the tablespace name from the drop-down menu. To enable Precise Framework Installer to create the tablespace, the DB2 user specified in the Tier installation instance properties, must have SYSCTRL and DBADM privileges or SYSADM privileges.

4. Select the container where to store the tablespaces. This is the name of the container in which the tablespace will be created.
To browse for the appropriate folder, click the **browse (...)** button.

5. Click **OK**.

Monitoring ERP

Use the ERP Tab to define the SAP Interpoint.

i The DB2 Tier Collectors can display correlated information on the activities and resource consumption of your SAP application components in your DB2 instance. Select this option to correlate SAP information with DB2 resource consumption.

To install the SAP Interpoint for a DB2 instance

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the ERP tab.
3. Mark the box "Install SAP Interpoint on this instance."
4. Enter the SAP system name.
This is the SID of the SAP instance to monitor. The SID consists of three uppercase characters.
5. In the "Connect to SAP using application server" textbox, enter the name of an application server in the SAP system which the SAP Interpoint can use to connect to the SAP system.
6. Enter the system number (a two-digit system number of the application server).
7. Enter the user name.

i The SAP Interpoint uses this user to connect to the SAP system for retrieving system information. Verify that you are using an SAP user that you defined as part of the pre-installation tasks. For more information, see [Pre-installation tasks for SAP](#).

8. Enter the password. The password should not be longer than eight characters.
9. Enter the name of the SAP system client that the user will use for the connection.
10. Click **OK**.

Manually installing DB2 database schemas

The DB2 installation process automatically installs schemas on the DB2 Instance. This process must be performed for each DB2 database installed. If you install DB2 database schemas only, FocalPoint schemas do not need to be previously installed.

To manually install DB2 database schemas only

1. Set the DB2 instance manual schema installation to "true."

- **Windows**

```
infra\bin\psin_cli.bat
-i3-user user-name
{-i3-encrypted-password encrypted-password
| -i3-clear-password clear-password}
-action settings-update
-name manual-install-db2-schema
```

```
-value true
```

- **UNIX**

```
./infra/bin/psin_cli.sh
-i3-user user-name
{-i3-encrypted-password encrypted-password
| -i3-clear-password clear-password}
```



```
-action settings-update
-name manual-install-db2-schema

-value true
```

2. Navigate to `<precise_root>products\db2\install` on the machine that you wish to install upon. Open the relevant DB2 version folder, and perform the following:
 - Replace the parameter `%%explain-tablespace%%` with the name of the tablespaces.
 - Replace the parameter `%%tablespace-container%%` with the name of the container.
 - Replace the parameter `%%sid%%` with the name of the database.
 - Replace the parameter `%%instanceName%%` with the name of the instance.
 - Replace the parameter `%%partition%%` with the partition number.
3. Manually install the DB2 Instance schemas.
4. Install the DB2 Tier instance, using the Precise installer.

To manually install DB2 database schemas

1. On the server where Precise DB2 collector is installed, find the following files:
 - **For DB2 8.1**
`<precise_root>\products\db2\install\8.1\install_I4UDB_Objects_8.1.sql`
 - **For DB2 9.1**
`<precise_root>\products\db2\install\9.1\install_I4UDB_Objects_9.1.sql`
 - **For DB2 9.6**
`<precise_root>\products\db2\install\9.6\install_I4UDB_Objects_9.6.sql`
2. Using the Precise user name, go to the appropriate folder (8.1, 9.1 or 9.6) and edit the following SQL script by following the instructions that are displayed in the comment at the head of the file:
`install_I4UDB_Objects_8.1.sql install_I4UDB_Objects_9.1.sql`
`install_I4UDB_Objects_9.6.sql`
3. Run the SQL script by using DB2 command line processor or DB2 Control Center.

Installing Sybase tier collectors

This section includes the following topics:

- [Pre-installation tasks](#)
- [Installing a Sybase Tier instance](#)
- [Post-installation action items](#)

Pre-installation tasks

Verify that you have a Sybase user with the system administrator privileges. Verify that the Sybase PC Open Client of one the supported versions is installed.

The following table describes the supported Open Client and the related ODBC versions.

Table 22-1 Supported Open Client and related ODBC versions

Open Client	ODBC Version
12.5.1 ESD #2	Sybase Adaptive Server Enterprise ODBC driver version 4.20.00.67
12.5.1 ESD 15	Adaptive Server Enterprise version 12.05.01.529
15.x	Adaptive Server Enterprise version 15.0.0.152

The recommended versions are Open Client 15.x and 12.5.1 ESD 15. In addition, verify that the following components are installed:

- Embedded SQL/C
- Monitor Client Library
- ODBC driver (see the previous table)

The following steps are necessary to check which PC Open Client and ODBC driver versions are installed.

To check which PC Open Client and ODBC driver versions are installed

1. Open the command prompt and run the following command:
"%SYBASE%\%SYBASE_OCS%\bin\isql" -v
This shows the PC Open Client version.
2. Click Setting>Control Panel>Administrative Tools>Data Sources(ODBC).
This shows the ODBC driver version.

Setting ASE configuration parameters

To enable monitoring of the Sybase Tier, you need to adjust the Adaptive Server Enterprise (ASE) configuration parameters.

In addition to the configuration parameters below, in ASE versions 15.0.2 and higher you can enable actual execution count reporting for ad-hoc statements.

To enable actual execution count reporting for ad-hoc statements

1. In Sybase ASE configuration, set the "enable stmt cache monitoring" value to "1."
2. In the Collector registry file, add the following entry:
<pss_exec_proc>YES</pss_exec_proc>

The following table specifies the parameter values for ASE version 12.5.0.3 and higher.


Table 22-2 Parameter values for ASE version 12.5.0.3 and later

Parameter	Value
max SQL text monitored	16384
enable monitoring	1
SQL batch capture	1
wait event timing	1

The following table specifies the parameter values for ASE versions 11.9.2, 12.0, and 12.5.

Table 22-3 Parameter values for ASE versions earlier 11.9.2, 12.0, and 12.5

Parameter	Value
max SQL text monitored	16384
event buffer per engine	2000

 The value given for the event buffer per engine parameter in both tables is a minimum value. You may also use a higher value if required.

Granting the mon_role and sa_role server roles

With ASE versions 12.5.0.3 and higher, verify that the user used to monitor the Sybase instance is a member of the mon_role and sa_role server roles

To grant the mon_role and sa_role server roles, run the following command:

```
grant role mon_role to user name
grant role sa_role to user name
```

For example, if you connect as system administrator, run the command as:

```
grant role mon_role to sa grant role sa_role to sa
```

Activating tables in ASE versions lower than 12.5.0.3

To be able to monitor an instance, Precise for Sybase requires that Monitor Server be installed. For information on how to install Monitor Server, see the Sybase Help.

Activating tables in ASE 12.5.0.3 and higher

Precise for Sybase monitors ASE 12.5.0.3 and higher without Monitor Server. Therefore, if you work with this version, you need to activate the following tables:

- monProcessSQLText
- monProcess

For instructions on how to activate these tables, see Sybase's book *Performance Tuning: Monitoring and Analyzing (for ASE version 15.0)* at:

http://infocenter.sybase.com/help/index.jsp?topic=/com.sybase.dc20022_1251/html/monitoring/monitoring61.htm

Registering the instance in the sys.servers table

Verify that the master.sys.servers table includes the following entry:

```
sp_addserver logical name, 'local', physical name
```

where:

- logical name is the name used to address the server on your system
- physical name is the name of the instance as it appears in the interface file (this file is usually located in the sybase root dir/ini/sql.ini folder or the sybase root dir/interfaces folder)

The entry points to the Sybase instance as the local server (srvc=0). If this entry does not exist, add it to the table.

Ensuring proper functioning of the Statistics tab

To function properly, the Statistics tab requires that you comply with the following requirements:

- ASE versions lower than 12.5.3:

Do not run the sp_sysmon system stored procedure.

- ASE 12.5.3 and higher:

Run the sp_sysmon system stored procedure with the noclear option set only. For example: sp_sysmon "00:01:00", noclear

Otherwise, incorrect and illogical data will occur in the time slice following the execution of this procedure.

Installing a Sybase Tier instance

This section describes the procedures that are needed to install a Sybase Tier instance. You have the option of adding a new instance, as well as adding a new application. For information on editing or removing an existing instance, see [Editing or removing tier instances or clusters](#).

Adding a Sybase Tier instance

On the AdminPoint Instances screen, you can add a new Tier instance.

 Before adding a Tier instance, create a list of all required inputs based on the screen information below.

To add a Tier instance

1. From StartPoint, click the AdminPoint tab.
2. Click the Setup tab.
3. From the drop-down menu, select **Instances & Clusters**.
4. Click the **All instances** tree item
5. At the bottom of the Display Instances & Clusters screen, click **Add Instance**. An Add New Instance dialog box appears.
6. Select the required technology from the list.
7. Select the application from the list. If the desired application is not on the list, follow steps a-d:
 - a. Click **Add**.

- b. In the Application Name field, type in the new application name.
- c. On the Application System field, select the system application from the list.
- d. Click **OK**.

i To install an instance in an application, you must have `ADMINISTRATE . INSTALL` permission for the application in which you want to install the instance. If you only have permission for a specific technology, you will only be able to install in an application that is either empty, or is comprised of only the same technology.

- 8. Select a Tier from the list.
- 9. Click **OK** to view the next screen.

i Always refresh AdminPoint after adding an instance.

Defining Sybase property settings

To enter a Tier instance for Sybase

- 1. In the "Sybase server" textbox, enter the name or IP address of the UNIX or Windows server on which Sybase is installed. In case of a clustered Sybase configuration, supply the virtual IP address of the cluster server as it appears in the Sybase sql.ini file.
- 2. In the "Sybase ASE instance" textbox, enter the Sybase instance you want to monitor, as it appears in the Sybase sql.ini file.
- 3. In the "Sybase server port" textbox, enter the port number of the Sybase data server, as it appears in the Sybase sql.ini file.
- 4. In the "Monitor from this server" textbox, enter the server where you want to install the Sybase Tier. The server name or IP address only appears in the list if you previously defined it as a Precise server. Click **Add** to enter the name of a Sybase server not on the list. For more information, see [Adding a new server](#).
- 5. In the Login textbox, enter an existing Sybase user name with the system administrator privileges.
- 6. In the Password textbox, enter the password.
- 7. Click **Next**.

About the Windows Authentication Settings screen

If the PMDB is using Windows Authentication, clicking **Next** in the Properties screen will take you to the Windows Authentication Settings screen. On this screen enter accounts with the following permissions:

Table 22-4 Permissions

When	Permission	Where
PMDB using Windows Authentication	User who is allowed to use Windows Authentication	On the PMDB server
	User with full control permission	On the Precise folder

To add the parameters

- 1. On the Windows Authentication Settings screen, enter the User name.
- 2. Enter the Password.
- 3. Enter the Domain or Server name.
- 4. Click **Next**.

About the AdminPoint Tier installation preview screen

The preview screen signifies that the AdminPoint Tier installer has gathered enough information to begin the installation phase.

The preview screen displays the following details before installation begins:

- Server name or IP address
- The name of the monitored server
- What actions will be performed in their respective order
- Installation folder (location)
- Required disk space
- Currently available disk space

At this screen, you can still change any of the settings displayed. Click **Back** to change any of the displayed settings. Click **Next** to continue installation. Click **Cancel** to stop the installation process.

About the AdminPoint Tier installation progress screen

This screen appears when the AdminPoint Tier installer is actually performing installation. Installation may take several minutes.

The progress screen visually displays the progress of actual installation on selected servers.

About the AdminPoint Tier installation complete screen

This screen appears when the AdminPoint Tier Installer has completed installation of all Tier instances.

If there are no action items, click **Finish** (it will be the only option available) to complete the instance installation. If there are action items, click **Next** (it will be the only option available).

About the AdminPoint Tier Action Items screen

After a Tier instance is installed, you must perform post-installation tasks as may be required. Only after completing any post-installation tasks required can you start using the Tier instances you have just installed.

Perform any tasks displayed on this screen. Click **Execute** for Precise to perform the action items. Click **Mark as done** if you have performed the action items yourself.

Post-installation action items

When the Sybase Tier Collectors have been installed, you might need to perform post-installation tasks. Follow any instructions that appear on the screen.

Advanced installation of Sybase tier collectors

This section includes the following topics:

- [Defining the server upon which the FocalPoint is to be installed](#)
- [Sampling Alerts custom metrics from the monitored instance](#)
- [Specifying the Sybase Monitor Server port](#)

Defining the server upon which the FocalPoint is to be installed

The default location for the FocalPoint installation is on the same server as the Precise Framework. The General tab allows you to define a different server as the location for the FocalPoint installation.

To enter FocalPoint inputs

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the General tab.
3. Click the drop-down menu and select the server which the FocalPoint should be installed upon.
4. Click **OK**.

Sampling Alerts custom metrics from the monitored instance

To enable sampling of Alerts custom metrics for this instance

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the General tab.
3. Mark the box "Enable sampling of custom metrics for this instance."
4. Click **OK**.

Specifying the Sybase Monitor Server port

For Sybase ASE versions prior to 12.5.03, specify the port of the Monitor Server. For version 12.5.0.3 and later, leave the textbox blank.

To specify the Sybase Monitor Server port

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the Database tab.
3. In the "Sybase Monitor Server port" textbox, enter the port of the Monitor Sever.
4. Click **OK**.

Installing Sybase Replication Server tier collectors

This section includes the following topics:

- [Pre-installation tasks](#)
- [Installing a Sybase Replication Server Tier instance](#)
- [Post-installation action items](#)

Pre-installation tasks

Verify that the Sybase PC Open Client of one the supported versions is installed. The following table describes the supported Open Client and the related ODBC versions.

Table 24-1 Supported Open Client and related ODBC versions

Open Client	ODBC Version
12.5.1 ESD #2	Sybase Adaptive Server Enterprise ODBC driver version 4.20.00.67p
12.5.1 ESD 15	Adaptive Server Enterprise version 12.05.01.529
15.x	Adaptive Server Enterprise version 15.0.0.152


The recommended versions are Open Client 15.x and 12.5.1 ESD 15. In addition, verify that the following components are installed:

- Embedded SQL/C
- Monitor Client Library
- ODBC driver (see the previous table)

The following steps are necessary to check which PC Open Client and ODBC driver versions are installed.

To check which PC Open Client and ODBC driver versions are installed

1. Open the command prompt and run the following command:
`"%SYBASE%\%SYBASE_OCS%\bin\isql" -v`
 This shows the PC Open Client version.
2. Click Setting > Control Panel > Administrative Tools > Data Sources (ODBC).
 This shows the ODBC driver version.

 Before installing Sybase Replication Server Tier, you need to install the Sybase Tier. For more information, see [Installing a Sybase Replication Server Tier instance](#).

Installing a Sybase Replication Server Tier instance

This section describes the procedures that are needed to install a Sybase Replication Server Tier instance. You have the option of adding a new instance, as well as adding a new application. For information on editing or removing an existing instance, see [Editing or removing tier instances or clusters](#).

Adding a Sybase Replication Server Tier instance

On the AdminPoint Instances screen, you can add a new Tier instance.


When installing Collectors on the Replication Server instances, verify that they are connected directly to either the ASE subscriber and/or the ASE publisher, which are both monitored by Precise. For example, if you have the following replication configurations:

- ASE Pub -> RS1 -> ASE Sub - install Collector on RS1
- ASE Pub -> RS1 -> RS2 -> ASE Sub - install Collector on RS1, RS2
- ASE Pub -> RS1 -> RS2 -> RS3-> ASE Sub - install Collector on RS1, RS3

It is recommended to install the ASE's first and then the Replication Server, so the ASE's will be mapped. If you install the Replication Server first, then you need to restart the Replication Server Collector after you finish with the ASE's installations so Replication Server statistics will be collected for them.

To add a Tier instance

1. From StartPoint, click the AdminPoint tab.
2. Click the Setup tab.
3. From the drop-down menu, select **Instances & Clusters**.
4. Click the **All instances** tree item
5. At the bottom of the Display Instances & Clusters screen, click **Add Instance**. An Add New Instance dialog box appears.
6. Select the required technology from the list.
7. Select the application from the list.
If the desired application is not on the list, follow steps a-d:
 - a. Click **Add**.
 - b. In the Application Name field, type in the new application name.
 - c. On the Application System field, select the system application from the list.
 - d. Click **OK**.

 To install an instance in an application, you must have ADMINISTRATE.INSTALL permission for the application in which you want to install the instance. If you only have permission for a specific technology, you will only be able to install in an application that is either empty, or is comprised of only the same technology.

8. Select a Tier from the list.
9. Click **OK** to view the next screen.

 Always refresh AdminPoint after adding an instance.

Defining Sybase Replication Server property settings


To define Sybase Replication Server property settings

1. In the "Sybase Replication host" textbox, enter the name or IP address of the UNIX or Windows server on which Sybase Replication is installed. In case of a clustered Sybase configuration, supply the virtual IP address of the cluster server as it appears in the Sybase sql.ini file. Click **Add** to enter the name of a server not on the list. For more information see, see [Adding a new server](#).
2. In the "Sybase Replication Instance name" textbox, enter the Sybase Replication instance you want to monitor, as it appears in the Sybase sql.ini file.
3. In the "Sybase Replication port" textbox, enter the port number of the Sybase Replication instance, as it appears in the Sybase sql.ini file.
4. In the Login textbox, enter an existing Sybase user name with the system administrator privileges.
5. Enter the Password.
6. In the "Monitor from this server" drop-down menu, select the server where the Collector will be installed.

7. In the "SQL.INI.Path" textbox, select the path of an sql.ini file located on the machine chosen in section 6. It should contain the properties of Sybase ASE Instances that participate in the replication and of the Sybase Replication server.
8. Click **Next**.

On the next screen, enter the remaining inputs.

1. In the "Sybase ASE Host" textbox, enter the name or IP address of the UNIX or Windows server on which Sybase is installed.

 In the event that there is a clustered Sybase configuration, supply the virtual IP address of the cluster server as it appears in the Sybase sql.ini file.

2. In the "Sybase ASE Instance" textbox, enter the Sybase instance, in which the RSSD Database is located.
3. In the "Sybase server port" textbox, enter the enter the port number of the Sybase data server.
4. In the "RSSD Database" textbox, enter the enter the name of the RSSD Database to which the monitored Replication server is connected.
5. In the Login textbox, enter an existing Sybase user name with the system administrator privileges.
6. Enter the Password.
7. Click **Next**.

About the Windows Authentication Settings screen

If the PMDB is using Windows Authentication, clicking **Next** in the Properties screen will take you to the Windows Authentication Settings screen. On this screen enter accounts with the following permissions:

Table 24-2 Permissions

When	Permission	Where
PMDB using Windows Authentication	User who is allowed to use Windows Authentication User with full control permission	On the PMDB server On the Precise folder

To add the parameters

1. On the Windows Authentication Settings screen, enter the User name.
2. Enter the Password.
3. Enter the Domain or Server name.
4. Click **Next**.

About the AdminPoint Tier installation preview screen

The preview screen signifies that the AdminPoint Tier installer has gathered enough information to begin the installation phase.

The preview screen displays the following details before installation begins:

- Server name or IP address
- The name of the monitored server
- What actions will be performed in their respective order
- Installation folder (location)
- Required disk space
- Currently available disk space

At this screen, you can still change any of the settings displayed. Click **Back** to change any of the displayed settings. Click **Next** to continue installation. Click **Cancel** to stop the installation process.

About the AdminPoint Tier installation progress screen

This screen appears when the AdminPoint Tier installer is actually performing installation. Installation may take several minutes.

The progress screen visually displays the progress of actual installation on selected servers.

About the AdminPoint Tier installation complete screen

This screen appears when the AdminPoint Tier Installer has completed installation of all Tier instances.

If there are no action items, click **Finish** (it will be the only option available) to complete the instance installation. If there are action items, click **Next** (it will be the only option available).

About the AdminPoint Tier Action Items screen

After a Tier instance is installed, you must perform post-installation tasks as may be required. Only after completing any post-installation tasks required can you start using the Tier instances you have just installed.

Perform any tasks displayed on this screen. Click **Execute** for Precise to perform the action items. Click **Mark as done** if you have performed the action items yourself.

Post-installation action items

When the Sybase Tier Collectors have been installed, you might need to perform post-installation tasks. Follow any instructions that appear on the screen.

Advanced installation of Sybase Replication Server tier collectors

This section includes the following topics:

- [Defining the server upon which the FocalPoint is to be installed](#)
- [Sampling Alerts custom metrics from the monitored instance](#)

Defining the server upon which the FocalPoint is to be installed

The default location for the FocalPoint installation is on the same server as the Precise Framework. The General tab allows you to define a different server as the location for the FocalPoint installation.

To enter FocalPoint inputs

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the General tab.
3. Click the drop-down menu and select the server which the FocalPoint should be installed upon.
4. Click **OK**.

Sampling Alerts custom metrics from the monitored instance

To enable sampling of Alerts custom metrics for this instance

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the General tab.
3. Mark the box “Enable sampling of custom metrics for this instance”.
4. Click **OK**.

Installing SAP tier collectors

This section includes the following topics:

- [Pre-installation tasks](#)
- [Installing an SAP Tier instance](#)
- [Post-installation action items](#)

Pre-installation tasks

Most of the screens require you to input details regarding your information systems. Before performing an installation, compile a list of all required user inputs based on the screen names and tables below. Each table (in the sections below) lists the options per screen.

SAP Collectors (with typical options) can be installed for:

- Oracle PMDB
- SQL Server PMDB

Before you install an SAP Tier, perform the following pre-installation tasks:

Pre-Installation Task	Performed By	Mandatory / Optional	Scope
Install SAP Function Modules in the SAP system. See Installing Precise for SAP Function Modules in the SAP system . For more information on SAP Function Modules, see SAP transports description .	SAP Basis Administrator	Mandatory	Per SAP system
Create SAP user. See Creating an SAP user account for Precise for SAP .	SAP Basis Administrator	Mandatory	Per SAP system
Enable SAP BW technical content. See Enabling SAP BW statistics technical content .	SAP BW expert	Mandatory if Precise for SAP BW is used	Per SAP BW system
Prepare browser for Precise SAP BW GUI. See Preparing the monitoring client for the Precise for SAP BW .	End-user	Mandatory if Precise for SAP BW is used	Per end-user monitoring center browser
Verify time zone synchronization. See Synchronizing time zones .	SAP Basis Administrator	Mandatory	Per SAP system

Pre-Installation Task	Performed By	Mandatory / Optional	Scope
Define organization structure. See Defining the organization structure .	SAP Basis Administrator	Optional	Per SAP system
Download SAP Java Connector (JCo). See Downloading the SAP Java Connector (JCo) .	End-user	Mandatory	Once for the Precise for SAP FocalPoint
Verify Network connectivity. See Verifying network connectivity .	SAP Basis Administrator	Mandatory	Per SAP system
Add Message server port to services. See Adding the SAP Message Server port to the services file .	End-user	Mandatory if connection is through the Logon Group	Per SAP system

Installing Precise for SAP Function Modules in the SAP system


Precise for SAP uses several custom ABAP/4 Function Modules to extract user, configuration, and statistical data from SAP data stores. The Function Modules are delivered in the Precise for SAP transport.

To install Precise for SAP Function Modules in the SAP system

1. SAP Function Modules are packed in SAP transports, located in the Precise v9.6 download or on the DVD. The transports can be found in the \Utilities\SAP\ folder. Alternatively, you can download the transport files separately from the Precise Customer Portal. For further details, contact Precise Customer Support.
2. To install the Function Modules in the SAP system, you must import the transports into the SAP system.
3. Select the appropriate transport zip file(s) below, and copy them to the target SAP application server:

SAP Basis Release	Zip Files
4.6C, 4.6D, 6.x non-Unicode	Precise_Transports_Basic.zip Precise_Transports_46c.zip
4.6C, 4.6D, 6.x Unicode	Precise_Transports_Basic.zip Precise_Transports_46c_Unicode.zip
7.x	Precise_Transports_Basic.zip Precise_Transports_700.zip
BW 7.x	Precise_Transports_Basic.zip Precise_Transports_700.zip Precise_for_SAP_BI_7.0_Transport.zip


4. Copy the transport ZIP files into the transport folder of the SAP system (usually /usr/sap/trans for Linux/UNIX systems or \\<SAP_hostname>\sapmnt\trans for Windows systems).
5. Use a program such as unzip or WinZIP (on Windows) to unpack the K and R files into the corresponding subfolder. The K files (e.g. K900059.PS2) should be extracted to the cofiles subfolder (/usr/sap/trans/cofiles). The R files (e.g. R900059.PS2) to the data subfolder (/usr/sap/trans/data).

 Verify that the read-only attribute is removed from the copied transport files. Otherwise, the import to the SAP system may fail.

6. Use the SAP Transport Management System (transaction STMS) or the operating system executable program tp to import the required transport. For information about the Transport Management System and the tp program, see [SAP transports description](#). Each of the zip files folders contains a readme.txt file with instruction on the order in which Transports should be imported to the SAP system.

The Transports contain SAP objects as described below:

Component	Zip Files	For SAP Basis Release
The/PRECISE/namespace	Precise_Transports_Basic.zip	All
The Z_PRECISE authorization Profile	Precise_Transports_46c.zip Precise_Transports_46c_Unicod e.zip	4.6C to 6.40 (SAP NetWeaver 2004)
The Z_PRECISE authorization Role	Precise_Transports_700.zip	7.x (SAP NetWeaver 2004s) BW 7.x
Precise for SAP Package and Function Modules	Precise_Transports_46c.zip Precise_Transports_46c_Unicod e.zip Precise_Transports_700.zip	All
Precise for BW Function Modules	Precise_for_SAP_BI_7.0_Transp ort.zip	BW 7.x

 For a more detailed description of the Transports, see [SAP transports description](#).


7. After the import has completed and in case a previous version of Precise Function Modules was installed in the system, you must rebuild the Function Group object list, by performing the following steps:
 - a. Go to SE80 > Function Group > /PRECISE/ZLSC.
 - b. Right click on the Function Group > Other Functions > Rebuild Object List.
8. When connecting to SAP, verify that all the authorizations in the Z_PRECISE Profile (for Basis 4.6C to 6.40) or in the Z_PRECISE Role (SAP Basis 7.x) have been added to the SAP user.
For more information on the authorizations, see [SAP User authorizations](#).

Creating an SAP user account for Precise for SAP

Precise for SAP is designed to run unattended, with little system overhead. Because Precise for SAP automatically connects to SAP, it is recommended to create an SAP account that is solely dedicated for the Precise for SAP connection.

The SAP user account for Precise for SAP requires the following:

- SAP user ID with the Authorization Role Z_PRECISE for SAP Basis 7.x, or with the Authorization Profile Z_PRECISE, for SAP Basis lower than 7. The Authorization Role and the Authorization Profile are delivered in separate transports and include the minimum authorizations needed for Precise for SAP to work correctly.

 For a list of the required minimum authorizations, see [SAP User authorizations](#).

Enabling SAP BW statistics technical content

If you are installing Precise for BW, verify that:

- The BW Statistics Technical Content process chains are configured and scheduled in your BW instance.

When configuring the Technical Content, the following InfoProviders should be enabled:

- **Front-End and OLAP Statistics**

0TCT_C01
0TCT_VC01
0TCT_MC01

- **DTP Statistics**

0TCT_C22
0TCT_VC22
0TCT_MC22

- **InfoPackage Statistics**

0TCT_C23
0TCT_VC23
0TCT_MC23

 For more details on enabling the Technical Content, see SAP Note 965386.

Preparing the monitoring client for the Precise for SAP BW

If you are installing Precise for SAP BW, verify that:

- You are not using a popup blocker or use one that can enable launching to Precise products.
- FlashPlayer 10 is installed on the monitoring desktop for Precise for BW.

Synchronizing time zones

To prevent a time zone synchronization issue where the Precise for SAP collectors don't receive information from Basis 7.x SAP systems, perform the following steps:

1. Go to SAPGUI > System > Status.
2. If apart from the System time there is a User default time of which the value differs from the System time, make them both the same:
 - a. Go to SAP transaction STZAC.
 - b. Choose the same time zone for both.

c. Click **Save**.

You may be prompted to create a new change request for this.

i This change is needed to solve an SAP documented bug described in SAP note: 926290. The full correction instructions are provided in this note.

Defining the organization structure

Define the structure of your company's organizations, locales, and user areas, and update the SAP user account records so that each user is identified by an organization and a user area.

Precise for SAP automatically imports user information directly from SAP user account tables. User information is imported into Precise for SAP during the installation and is updated each night, automatically adding new users and modifying existing user information.

To configure how Precise for SAP imports the user information, see [Defining mapping and locale settings](#).

Downloading the SAP Java Connector (JCo)

For information regarding the SAP JCo, see [Installing the SAP Java Connector \(JCo\)](#).

i Precise for SAP only supports SAP JCo version 2.1.9 on Windows NT/Windows 2000/Windows 2003. Precise currently does not support SAP JCo version 3.x.

i Verify that you download the corresponding JCo bit version (32 or 64 bit) for the Windows system that the Precise for SAP FocalPoint is installed on.

To download the SAP JCo

1. Open the following URL in your internet browser. <http://service.sap.com/connectors>.
2. Enter your SAP Service Marketplace user name and password, and click **OK**.
3. In the tree view, go to Connectors > SAP Java Connector > Tools and Services.
4. Review the JCo Release notes for the available versions and choose one that is relevant for the operating system of the Precise for SAP FocalPoint server. Note that the JCo may require other prerequisite software as described in the release notes. Use the JCo version as described in the note above.

Verifying network connectivity

To verify the network connectivity, verify that the following steps have been performed:

- Ports 33xx (where xx represents the two-digit SAP System Number) between Precise for SAP FocalPoint and SAP Application Servers have to be opened.
- If using Interpoint for SAP in one of the Precise for Database products, ports 33xx between the Database agent (Precise for Oracle, Precise for SQL Server or Precise for DB2) and the SAP Application Servers have to be opened as well.

Adding the SAP Message Server port to the services file

If you want Precise for SAP to use a Logon Group for connection to the SAP System, you need to add the message server port to the services file on the Precise for SAP Collector Agent's machine.

Add the following entry to the file (usually located at `c:\windows\system32\drivers\etc`):

```
sapms<SID> 36XX/tcp
```

where XX is the system number.

Installing an SAP Tier instance

This section describes the procedures that are needed to install an SAP Tier instance. You have the option of adding a new instance, as well as adding a new application. For information on editing or removing an existing instance, see [Editing or removing tier instances or clusters](#).

i Before installing an SAP Tier instance, verify that all necessary pre-installation tasks have been completed. See [Pre-installation tasks](#).

Adding an SAP Tier instance

On the AdminPoint Instances screen, you can add a new Tier instance.

i Before adding a Tier instance, create a list of all required inputs based on the screen information below.

To add a Tier instance

1. From StartPoint, click the AdminPoint tab.
2. Click the Setup tab.
3. From the drop-down menu, select **Instances & Clusters**.
4. Click the **All instances** tree item
5. At the bottom of the Display Instances & Clusters screen, click **Add Instance**. An Add New Instance dialog box appears.
6. Select the SAP technology from the list.
7. Select the application from the list.

If the desired application is not on the list, complete the following steps:

 - a. Click **Add**.
 - b. In the Application Name field, type in the new application name.
 - c. On the Application System field, select the system application from the list.
 - d. Click **OK**.

i To install an instance in an application, you must have ADMINISTRATE.INSTALL permission for the application in which you want to install the instance. If you only have permission for a specific technology, you will only be able to install in an application that is either empty, or is comprised of only the same technology.

8. Select a Tier from the list.
9. Click **OK** to view the next screen.

Defining SAP property settings

To define SAP property settings

1. Enter the unique SAP System ID (SID).
2. Enter the system name, using a free-text identifier.
This will help you to distinguish between multiple SAP instances.
3. You can connect to SAP through one of the application servers, a logon group, or through a routing string.
 - To connect through an application server, choose "Custom Application server" for the Connection Type, then enter the host name of the application server to be used.

i If the application server name does not exist in the drop-down menu, you do not need to add it to the server list. SAP uses SAP RFC library to communicate with the SAP application server, without installing additional components on the application server.

- To connect through a logon group, choose "Group/Server Selection" for the Connection Type, then enter the host name of the message server to be used.

i If the message server name does not exist in the drop-down menu, you do not need to add it to the server list. SAP uses SAP RFC library to communicate with the SAP message server, without installing additional components on the message server.

- To connect through a routing string, enter the required routing string. The value should include the routing string concatenated with the SAP Application Server host. For example, when the router is `vm-sap-srv-15` and the SAP system Application Server is `vm-sap-srv-13`, the routing string should look like:

```
/H/vm-sap-srv-15/H/vm-sap-srv-13
```

4. Enter the two-digit system number.
5. Enter the SAP user name (use upper-case characters only).
6. Enter the password.
7. Enter the three-digit SAP client.
8. Click **Next**.

About the AdminPoint Tier installation preview screen

The preview screen signifies that the AdminPoint Tier installer has gathered enough information to begin the installation phase.

The preview screen displays the following details before installation begins:

- Server name or IP address
- The name of the monitored server
- What actions will be performed in their respective order
- Installation folder (location)
- Required disk space
- Currently available disk space

At this screen, you can still change any of the settings displayed. Click **Back** to change any of the displayed settings. Click **Next** to continue installation. Click **Cancel** to stop the installation process.

About the AdminPoint Tier installation progress screen

This screen appears when the AdminPoint Tier installer is actually performing installation. Installation may take several minutes.

The progress screen visually displays the progress of actual installation on selected servers.

About the AdminPoint Tier installation complete screen

This screen appears when the AdminPoint Tier Installer has completed installation of all Tier instances.

If there are no action items, click **Finish** (it will be the only option available) to complete the instance installation. If there are action items, click **Next** (it will be the only option available).

About the AdminPoint Tier Action Items screen

After a Tier instance is installed, you can perform post-installation tasks as may be required. Only after completing any post-installation tasks required can you start using the Tier instances you have just installed.

Perform any tasks displayed on this screen. Click **Mark as done** if you have performed the action items yourself.

 Always refresh AdminPoint after adding an instance.

Post-installation action items

After successfully adding the SAP system to the SAP Tier, you need to define both the mapping for organizations and locales and the locales themselves.

Defining mapping and locale settings

As part of the pre-installation tasks, you have defined your organizations and user areas. Now that you have finished configuring the SAP system, you need to define the fields that Precise for Precise for SAP will retrieve for these groupings. By default, Precise for Precise for SAP retrieves the Department field for organization and the Building field for user area.

In addition to collecting SAP activity data from application servers, Precise for Precise for SAP can monitor locations for network availability. In Precise for Precise for SAP, a location is referred to as a locale. Each locale represents a physical location that is defined by a list of one or more devices, called Locale Devices. Precise for Precise for SAP connects to these devices to check their availability.

Mapping the organizations

The following procedure describes how to configure organization settings.

To configure organization settings

1. In Precise for Precise for SAP, from the Settings menu, select **Mapping Settings**.
2. In the Mapping Settings dialog box, select the SAP system you want to configure and click **Edit**.
3. Choose an SAP field from the Organization list to map an SAP organization to a user.
4. Determine which SAP field will be mapped to a locale. Choose a field from the User Area list, and then click **OK**.

i If your system maintains user lists in locations other than SAP user tables, you can still import this information into Precise for SAP. Precise for SAP can import user definitions from ASCII text files, enabling user information to be extracted from practically any source. For more information on how to import user information from ASCII files, see the [Configuring Precise for SAP](#) in the *Precise Administration Guide*.

Mapping the Locales

To identify the locales and Locale Devices that you want Precise for SAP to monitor, you need to select existing Windows machines or other devices, such as routers. Locale Devices do not have to be solely dedicated to availability monitoring. They can run the Echo services required by Precise for SAP in the background while serving other purposes.

The following hardware components can serve as Locale Devices:

- Windows workstations or servers
- UNIX computers
- Routers

i Verify that your Locale Devices are always available during monitoring hours. Precise recommends using workstations that are always on and available, instead of computers that may be turned off, such as end-user computers.

Before updating the list of locales in Precise for SAP, verify that you have:

- Mapped all SAP user locales.
- Planned which locales should be defined in the Precise for SAP system and which server machines should be assigned to them to physically check their availability.

To configure locale settings

1. In Precise for SAP, from the Settings menu, select **Mapping Settings**.
2. In the Mapping Settings dialog box, select the SAP system you want to configure and click **Edit**.
3. Determine which SAP field will be mapped to a locale. Choose a field from the User Area list. Then click **OK**.
4. From the Settings menu, select **Locale Settings**.
5. In the Locale Settings dialog box, perform one of the following procedures:
 - **Add a locale**
 - i. Click **Add**.
 - ii. In the Locale Settings - Edit dialog box, enter the name of the new locale in the Locale field. Enter a description (optional) of the new locale in the Description field.
 - iii. On the Locale Definition tab, select a user area from the User Areas not assigned to this locale list and click the right arrow to move it to the User Areas assigned to this locale list.
 - iv. On the Locale Availability tab, click **Add**.
 - v. In the Add Device dialog box, enter the name or the IP address of the device that should be taken into consideration by Precise for SAP when monitoring locale availability.
 - vi. Click **OK**.
 - **Edit a locale**
 - i. Select the Locale Settings you want to modify.
 - ii. Click **Edit**.
 - iii. In the Locale Settings - Edit dialog box, in the Locale text box, change the name of the existing locale.
 - iv. In the Description text box, enter a description (optional) or modify an existing description.
 - v. On the Locale Definition tab, select a user area from the User Areas not assigned to this locale list and click the right arrow to move it to the User Areas assigned to this locale list.

- vi. On the Locale Availability tab, click **Edit**.
 - vii. In the Edit Device dialog box, enter the name or the IP address of the device that should be taken into consideration by Precise for SAP when monitoring locale availability, and then click **OK**.
- **Delete a locale**
 - i. From the Locale Settings list, select the Locale you want to delete.
 - ii. Click **Delete**; then click **OK** to confirm this operation.
 - iii. Click **OK**.

Installing the SAP Java Connector (JCo)

After installing the Precise for SAP FocalPoint, you need to install the downloaded SAP Java Connector (JCo) if you want Precise for SAP to display running batch jobs in the Batches tab or use the Precise for SAP BW. In this case, perform the following post-installation task. For information on how to download the SAP JCo, see [Downloading the SAP Java Connector \(JCo\)](#).

To install the SAP JCo

1. Unzip the contents of the downloaded file to a folder of your choice on the Precise for Precise for SAP FocalPoint server.
2. Open the Agents tab in Precise AdminPoint and stop the Precise for SAP FocalPoint.
3. From the folder to which you unzipped the downloaded file:
 - a. Copy the .jar file to the <precise_root>\java\3rd_party folder on your Precise for Precise for SAP FocalPoint server.
 - b. Copy the .dll files to the <precise_root>\products\sap\bin folder on your Precise for Precise for SAP FocalPoint server.
4. Verify that the gateway port between the Precise for SAP FocalPoint and the SAP Application Server is open in both directions:
The gateway port is 33xx, where xx has to be replaced by the instance number in the SAP Application Server.
5. Maintain the SAP communication ports in the services file in:
%windir%\system32\drivers\etc\services
6. Replace the following <SID> and <instance-number> with the values from your application:
sapms<SID> 36<instance-number>/tcp sapms<SID> 33<instance-number>/tcp sapms<SID>
32<instance-number>/tcp
For example for an SAP system with the SID = PRD and Instance Number 01:
sapmsPRD 3601/tcp # SAP Message Server sapmsPRD 3301/tcp # SAP Gateway sapmsPRD
3201/tcp # SAP Dispatcher
7. Go back to AdminPoint and restart the Precise for Precise for SAP FocalPoint.

Advanced installation of SAP tier collectors

This section includes the following topics:

- [Defining the server upon which the FocalPoint is to be installed](#)
- [Sampling Alerts custom metrics from the monitored instance](#)
- [Choosing which SAP Clients to monitor](#)

Defining the server upon which the FocalPoint is to be installed

The default location for the FocalPoint installation is on the same server as the Precise Framework. The General tab allows you to define a different server as the location for the FocalPoint installation.

To enter FocalPoint inputs

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the General tab.
3. Click the drop-down menu and select the server which the FocalPoint should be installed upon.
4. Click **OK**.

Sampling Alerts custom metrics from the monitored instance

To enable sampling of Alerts custom metrics for this instance

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the General tab.
3. Mark the box "Enable sampling of custom metrics for this instance."
4. Click **OK**.

Choosing which SAP Clients to monitor

To choose which Clients to monitor

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the Clients tab.
3. Choose which clients to monitor.
 - To monitor a client, select the desired client from the Available Clients list and click the right-arrow button to move it to the Monitored Clients list.
 - To end monitoring of a client, select the desired client from the Monitored Clients list and click the left-arrow button to move it to the Available Clients list.
4. Click **OK**.

Installing Oracle Applications tier collectors

This section includes the following topics:

- [Pre-installation tasks](#)
- [Installing an Oracle Applications Tier instance](#)
- [Post-installation action items](#)

Pre-installation tasks

Most of the screens in this installation require you to input details regarding your information systems. Before installing an Oracle Applications Tier instance, compile a list of all required user inputs based on the screen names below.

Before installing an Oracle Applications Tier instance, verify that you have performed the following tasks:

- Use the Precise Framework Installer to install framework components.
- Verify that you have already installed an Oracle Collector.
- Verify that you can change the CUSTOM.pll and CUSTOM.plx forms library.
- Verify that there are no users logged on to the Oracle Applications server.
- Verify that there are no batch jobs or reports running on the Oracle Applications server.
- Verify that the Concurrent Manager is shut down.
- Log in to the Oracle DB with sysdba user and run:


```
GRANT EXECUTE ON DBMS_PIPE TO <COLLECTOR_SCHEMA_USER>
```

Installing an Oracle Applications Tier instance

This section describes the procedures that are needed to install an Oracle Applications Tier instance. You have the option of adding a new instance, as well as adding a new application. For information on editing or removing an existing instance, see [Editing or removing tier instances or clusters](#).

Adding an Oracle Applications Tier instance

On the AdminPoint Instances screen, you can add a new Tier instance.

 Before adding a Tier instance, create a list of all required inputs based on the information below.

To add a Tier instance

1. From StartPoint, click the AdminPoint tab.
2. Click the Setup tab.
3. From the drop-down menu, select **Instances & Clusters**.
4. Click the **All instances** tree item
5. At the bottom of the Display Instances & Clusters screen, click **Add Instance**. An Add New Instance dialog box appears.
6. Select the required technology from the list.
7. Select the application from the list. If the desired application is not on the list, use the following steps:
 - a. Click **Add**.
 - b. In the Application Name field, type in the new application name.
 - c. On the Application System field, select the system application from the list.
 - d. Click **OK**.

i To install an instance in an application, you must have `ADMINISTRATE . INSTALL` permission for the application in which you want to install the instance. If you only have permission for a specific technology, you will only be able to install in an application that is either empty, or is comprised of only the same technology.

8. Select a Tier from the list.
9. Click **OK** to view the next screen.

i Always refresh AdminPoint after adding an instance.

Defining Oracle Applications property settings

You can install both an Interpoint for Oracle Applications and the Insight Savvy for Oracle Applications to monitor the Forms Tier of Oracle Applications. To use an Interpoint for Oracle Applications, the database instance must first be monitored by an Precise for Oracle Collector agent.

To monitor the Forms Tier of Oracle Applications by the Insight Savvy for Oracle Applications, the following conditions must be met:

- The Forms server must be a UNIX server.
- The database instance must first be monitored by an Precise for Oracle Collector agent.
- If the Oracle Applications Forms server works in Forms Listener Servlet Mode, then the Precise for J2EE Collector agent must first be installed on the Forms Listener JVM.
In the J2EE instance properties dialog box, select the J2EE application server type 'Oracle' and the J2EE application server version 'Oracle Applications 11.5.8 (Forms Listener Servlet Mode)'.

The first two textboxes are the database details (which should have already been installed as a Precise instance), with the third and fourth textboxes, the Oracle Applications forms details.

To define property settings for Oracle Applications

1. Select from the drop-down menu, the server where the Oracle Applications database is running.
2. Select from the drop-down menu, the Oracle Applications database instance name.

i The name of the Oracle instance or database used by Oracle Applications. If you also want to install an Interpoint for Oracle Applications, you need to install the Oracle Tier agents for the database SID previously installed. If this database is part of a Real Application Cluster (RAC), this is detected during the installation. In this case, you have to define the RAC later on.

3. Select from the drop-down menu, the Oracle Applications forms server. Click **Add**, to select a server that is not listed on the drop-down menu.

i This is the name or IP of the server where Oracle Applications forms are installed. This server is the Oracle Applications forms server, and it must be defined as a Precise Server.

4. Select from the drop-down menu, the Oracle Applications instance.

i The instance is usually auto-detected when the forms server is selected. In any event, you can select **Other**, from the drop-down menu.

5. The Oracle Applications instance ID textbox is auto-filled with the instance ID, when the instance is selected. You can manually change the value as well.

i Oracle Applications can have more than one forms server on one machine. The instance ID is a logical name that Insight uses to determine the specific forms server where you want to install this Oracle Applications Tier agent. If the Oracle Applications instance has been auto-detected this field is auto-filled.

6. Select from the drop-down menu, where the Oracle Applications works in. You can choose from the following:
 - Forms Listener Mode
 - Forms Listener Servlet Mode

The Forms Listener Servlet Mode is enabled only if you have installed a J2EE instance on the forms server (as part of the Precise instance installation).

7. Click **Next**.

i Forms Listener Mode is also known as Forms Socket Mode and is the default configured mode for Oracle Applications 11i. Check with your Oracle Applications administrator to determine which configured mode is running for the Oracle Applications Forms server in your application.

Entering Forms Listener inputs

If you selected Forms Listener Mode, you can integrate Insight with the Oracle Applications instance. This enables you to correlate activities within your Oracle Applications domain with other activities in your application and measure Oracle Applications-related network time, and to do so, you need to configure the TCP/IP ports to be used by the Oracle Applications Forms Server Listener. This option is only relevant if your Oracle Applications Forms Server is running on a UNIX server that has the Insight Savvy for Network installed. The relevant port number is defined by the FORMS_PORT application variable in the adfrmctl.sh script (located in the Oracle Applications installation folder). This script is used to start up or shut down the Forms Listener. The default values for the ports are auto-detected.

To integrate Insight with the Oracle Apps instance

1. Mark the "Integrate with Insight" box.
2. Specify the port numbers used by the Oracle Applications listener forms.
3. Click the **arrow (>>)** button to add port numbers to the list.
4. Click **Next**.


If you selected Forms Listener Servlet Mode, you can integrate Insight with the Oracle Apps instance. This enables you to correlate activities within your Oracle Applications domain with other activities in your application and measure Oracle Applications-related response time, and to do so, you need to configure the Oracle Applications forms server JVM to be used by the Oracle Applications Forms Server agent. This option is only relevant if the Oracle Applications forms server works in Forms Listener Servlet Mode and has the J2EE Collector installed.

To integrate Insight with the Oracle Apps instance

1. Mark the "Integrate with Insight" box.
2. Select from the drop-down menu, the JVM in which the Oracle Applications listener servlet is running.
3. Click **Next**.

Defining the RAC cluster

If there is a RAC, the RAC Cluster dialog box will appear, with the left table listing all monitored Oracle instances. The right table lists only instances that are part of the RAC (not including the instance defined in the Oracle Applications Tier - Instance Properties dialog box).

 The right table must include all of the Oracle instances that are part of the RAC. Verify that this table is updated whenever you add or remove instances from your RAC configuration.

To define the RAC cluster

1. In the Oracle Applications Tier - RAC Cluster dialog box, select the instances to be part of the Oracle Applications RAC cluster. Use the arrow buttons to move instances between the tables.
2. Click **Next**.

About the AdminPoint Tier installation preview screen

The preview screen signifies that the AdminPoint Tier installer has gathered enough information to begin the installation phase.

The preview screen displays the following details before installation begins:

- Server name or IP address
- The name of the monitored server
- What actions will be performed in their respective order
- Installation folder (location)
- Required disk space
- Currently available disk space

At this screen, you can still change any of the settings displayed. Click **Back** to change any of the displayed settings. Click **Next** to continue installation. Click **Cancel** to stop the installation process.

About the AdminPoint Tier installation progress screen

This screen appears when the AdminPoint Tier installer is actually performing installation. Installation may take several minutes.

The progress screen visually displays the progress of actual installation on selected servers.

About the AdminPoint Tier installation complete screen

This screen appears when the AdminPoint Tier Installer has completed installation of all Tier instances.

If there are no action items, click **Finish** (it will be the only option available) to complete the instance installation. If there are action items, click **Next** (it will be the only option available).

About the AdminPoint Tier Action Items screen

After a Tier instance is installed, you must perform post-installation tasks as may be required. Only after completing any post-installation tasks required can you start using the Tier instances you have just installed.

Perform any tasks displayed on this screen. Click **Execute** for Precise to perform the action items. Click **Mark as done** if you have performed the action items yourself.

Post-installation action items

When the Oracle Applications Tier Collectors have been installed, post-installation tasks are required. Depending on your application settings, you may need to stop all Insight Savvies that are currently running on the respective server and restart them. In addition, you need to grant permissions to schema user as described below and activate

an Interpoint for Oracle Applications, as well as configure the Interpoint for Oracle Applications for the purpose of data collection.

Granting permissions to schema user

Connect to the Oracle instance on which the corresponding collector is installed as DBA user and run query:

```
grant execute on DBMS_PIPE to <collector_schema_user>
```

Activating the Interpoint for Oracle Applications

To activate an Interpoint for Oracle Applications

1. Log in to the server and run the following script to install the Interpoint:
 - **Windows**
`\products\oracle\SID\schema\install_oracle_apps.bat`
 - **UNIX**
`./products/oracle/SID/schema/install)_oracle_apps.sh`
 where *<Precise_root>* is the name of the Precise root folder.
2. To verify that the installation was successful, run the following script:
 - **Windows**
`verify_install_oracle_apps.bat`
 - **UNIX**
`verify install oracle apps.sh`
3. Configure the Oracle Applications application.
 For more information on how to configure the Oracle Applications application, see the next topic.
4. Restart the Precise for Oracle Collector agent for this instance.

Configuring an Interpoint for Oracle Applications for data collection

The Interpoint for Oracle Applications identifies activities of Oracle Applications by monitoring the events that are called by forms. Configuring an Interpoint for Oracle Applications to collect the relevant data involves these tasks:

- Manually updating the customization library
- Manually updating Oracle Applications' system profile (Oracle applications 11.5 or higher)

Manually updating the customization library

To have the Interpoint for Oracle Applications collect forms data, you must manually add some information to the customization library of the Oracle Applications forms. This information includes user, form, and application names.

The customization library consists of the following files:

- CUSTOM.pld
- CUSTOM.pll
- CUSTOM.plx

You can only modify the CUSTOM.pld file. This file does not exist by default but can be extracted from the CUSTOM.pll file. For the changes to take a global effect in the customization library after they are implemented in the CUSTOM.pld file, you need to regenerate the CUSTOM.pll and CUSTOM.plx files from the CUSTOM.pld file.

i The file names may appear lowercase or uppercase (for example CUSTOM.pll). In the following task, all filenames are uppercase. If you copy-paste this information, verify that the case matches the actual file names on your system.

To update the customization library on UNIX

1. Find the CUSTOM.pll and CUSTOM.plx files, usually located in your Oracle Applications folder.
2. Back up the CUSTOM.pll and CUSTOM.plx files and, if it exists, also the CUSTOM.pld file.
3. Verify that no Oracle Applications user is currently logged on to the database or any other database using the CUSTOM.pll and CUSTOM.plx files.
4. Change to the folder that contains the CUSTOM.pll file. This folder is pointed to by the application variable \$FORMS60_PATH.
5. To extract the CUSTOM.pld file, run the following command using the Oracle account of Oracle Applications (such as APPS):
f60gen Module=CUSTOM.pll Module_Type=LIBRARY userid=user/password script=yes

i For Oracle Applications version R12, replace f60gen command with frmcmp_batch.

6. Run the following command to edit the file:
vi CUSTOM.pld
7. Find the EVENT procedure, locate the first BEGIN after the commented sample code, and insert the following code, starting with BEGIN.

Do not insert the script into commented sample code. You can easily mistake sample code for real code.

```
begin
if (event_name='WHEN-NEW-FORM-INSTANCE') then declare cursor_name integer;
rows_processed integer; del char(1) :=
substr(get_application_property(CURRENT_FORM),1,1); begin
if (del != '/') then del := '\';
end if;
cursor_name := dbms_sql.open_cursor;
dbms_sql.parse(cursor_name,
'begin VERITAS_APPS_LOG( 'F' , :username ,
:application , :form , NULL) ; end ;' ,1);
dbms_sql.bind_variable(cursor_name,':username' , FND_PROFILE.VALUE('USERNAME'));
dbms_sql.bind_variable(cursor_name,':application' ,
substr(get_application_property(CURRENT_FORM),
instr(get_application_property(CURRENT_FORM),del ,
-1)+1, length(substr( get_application_property(CURRENT_FORM),
instr(get_application_property(CURRENT_FORM), del,-1)+1))-4));
dbms_sql.bind_variable(cursor_name,':form' , Name_In('system.current_form'));
rows_processed := dbms_sql.execute(cursor_name);
dbms_sql.close_cursor(cursor_name);
exception
when others then begin dbms_sql.close_cursor(cursor_name); exception
when others then null;
end; end; end if;
exception
when others then null;
end;
```

8. To regenerate the
CUSTOM.pll file from the CUSTOM.pld file, run the following command using the Oracle account of Oracle Applications (such as APPS):

- a. For Oracle Application version under R12 (exclusive):
f60gen Module=CUSTOM.pld Module_Type=LIBRARY userid=user/password parse=yes
- b. For Oracle Applications version R12:
frmcmp_batch Module=CUSTOM Module_Type=LIBRARY userid=user/password parse=yes
9. To regenerate the CUSTOM.plx file from the CUSTOM.pll file, run the following command using the Oracle account of Oracle Applications (such as APPS):
f60gen Module=CUSTOM.pll Module_Type=LIBRARY userid=user/password compile_all=yes

 For Oracle Applications version R12 replace f60gen command with frmcmp_batch.

10. To verify the CUSTOM library change, run the following script:
<precise_root>/products/oracle/<sid>/schema/pss_verify_oa_customer_pll.sh

To update the customization library on Windows

1. Find the CUSTOM.pll and CUSTOM.plx files, usually located in your Oracle Applications folder.
2. Back up the CUSTOM.pll and CUSTOM.plx files.
3. Verify that no Oracle Applications user is currently logged on to the database or any other database using the CUSTOM.pll and CUSTOM.plx files.
4. Run the %ORACLE_HOME%\bin\if60gen.exe tool (sometimes called ifbld60.exe).

 For Oracle Applications version R12 replace f60gen command with frmcmp.exe.

5. In the welcome wizard, select **Open an existing form**, followed by **OK**.
6. Choose CUSTOM.pll and click **Open**.
7. Under PL/SQL Libraries > Custom > Program Units right-click on Package body and select the **PL/SQL Editor**.
8. Find the EVENT procedure, locate the first BEGIN after the commented sample code, and insert the following code, starting with BEGIN.

Verify that the script was not inserted into commented sample code. You can easily mistake sample code for real code.

```
begin
  if (event_name='WHEN-NEW-FORM-INSTANCE') then declare
    cursor_name integer; rows_processed integer; del char(1) :=
    substr(get_application_property(CURRENT_FORM),1,1);
  begin
    if (del != '/') then del := '\';
  end if;
  cursor_name := dbms_sql.open_cursor;
  dbms_sql.parse(cursor_name,
    'begin VERITAS_APPS_LOG(''F'' , :username ,
    :application , :form , NULL) ; end ;',1);
  dbms_sql.bind_variable(cursor_name,':username' , FND_PROFILE.VALUE('USERNAME'));
  dbms_sql.bind_variable(cursor_name,':application' ,
    substr(get_application_property(CURRENT_FORM),
    instr(get_application_property(CURRENT_FORM),del
    ,
    -1)+1, length(substr( get_application_property(CURRENT_FORM),
    instr(get_application_property(CURRENT_FORM), del,-1)+1)-4));
  dbms_sql.bind_variable(cursor_name,':form' , Name_In('system.current_form'));
  rows_processed := dbms_sql.execute(cursor_name);
  dbms_sql.close_cursor(cursor_name);
exception
  when others then begin dbms_sql.close_cursor(cursor_name); exception
  when others then null;
```

```

end; end; end if;
exception
when others then null;
end;

```

9. Click File > Save.
10. Run %ORACLE_HOME%\bin\ifcmp60.exe.
11. Fill in the following fields:
 - a. File CUSTOM.PLL (that we changed before)
 - b. Userid APPS
 - c. Password APPS password
 - d. Database database name
 - e. Module Type LIBRARY
 - f. Module Access FILE
12. Click **OK**.

Manually updating Oracle Applications system profile (Oracle applications 11.5 or higher)

To have an Interpoint for Oracle Applications identify interactive forms in Oracle Applications 11.5 or higher, you must manually update the system profile of Oracle Applications with site-specific initialization code. As a result, Oracle Applications forwards the required information - the user, form, and application name for interactive work and the concurrent program and application name for batch work - to an Interpoint for Oracle Applications.

Before updating Oracle Applications' system profile, you must verify that an Interpoint for Oracle Applications was installed successfully. Otherwise, updating the profile may halt Oracle Applications.

To avoid interfering with anyone's work before changing the system profile, you can alternatively change the profile for only one user to first test the outcome.

To verify that an Interpoint for Oracle Applications was installed successfully, run the following script:

- Windows
 \products\oracle\SID\schema\verify_install_oracle_apps.bat
- UNIX
 ./products/oracle/SID/schema/verify_install_oracle_apps.sh

To update Oracle Application's system profile

1. Log in to Oracle Applications with a user that has system administrator privileges.
2. Open the System Administrator application.
3. Open the Navigator - System Administrator dialog box.
4. On the Functions tab, select Profile > System; then click **Open**.
5. In the Find System Profile Values form, select the Site check box and Type the following value in the Profile text box: Init%SQL%Custom
6. Click **Find**.
7. In the System Profile Values form, type the following in the Site text box: begin veritas_custom_profile; end;
8. Close the System Profile Values form; then open any form.

If the form opens cleanly, you can start working with the Interpoint for Oracle Applications.

If an issue occurs, verify again that the Interpoint for Oracle Applications was installed successfully. If it was installed successfully, most likely the issue was caused by erroneous text in the system profile. If the issue persists, contact Precise Customer Support.

To update the system profile for one user only

1. Log in to Oracle Applications with a user that has system administrator privileges.
2. Open the System Administrator application.
3. Select Profile > System; then click **Open**.
4. In the Find System Profile Values form, select the **Site** and **User** check boxes.
5. To the right of the User check box, enter the name of the user whose profile you want to change.
6. Type the following value in the Profile text box: `In it%SQL%Custom`
7. Click **Find**.
8. In the System Profile Values form, type the following in the User text box: `begin veritas_custom_profile; end;`
9. Close the System Profile Values form and log in to Oracle Applications with the user selected in Step 8.
10. Open any form.

If the form opens cleanly, you can update the Oracle Applications' system profile.

For more information, see [Manually updating Oracle Applications system profile \(Oracle applications 11.5 or higher\)](#).

If an issue occurs, verify again that the Interpoint for Oracle Applications was installed successfully. If it was installed successfully, most likely the issue was caused by erroneous text in the system profile. If the issue persists, contact Precise Customer Support.

Correcting problematic profiles

When the Interpoint for Oracle Applications does not correlate some of its information with the Collector agent, the following scenario may be applicable:

The Interpoint for Oracle Applications collects some of its data from the Oracle Applications using the initialization of every form that is declared in the System Profile. The System Profile contains 4 profile levels, one for each level. Listed from the weakest to the strongest are: Site, Application, Responsibility, User. The Interpoints' code is on the weakest link here, meaning, Site level. When you customize one or more profiles at a stronger level, the code that resides at Site level is hidden.

i In this query we expect to have Interpoints' code ("`begin veritas_custom_profile; end;`") in all entries, otherwise there is no correlation.

To find problematic profiles

1. Use the following query:


```
select a.profile_option_value, DECODE(a.level_id, 10001, 'Site',
10002, 'Application', 10003, 'Responsibility', 10004, 'User', a.level_id) as
"System Profile Level", a.level_value, to_char (a.last_update_date, 'YYYY-MON-DD')
LAST_UPDATE_DATE
from FND_PROFILE_OPTION_VALUES a, FND_PROFILE_OPTIONS b, fnd_profile_options_tl c
where
a. profile_option_id = b.profile_option_id and
b. profile_option_name = c.profile_option_name and
c. user_profile_option_name = 'Initialization SQL Statement - Custom' order by
a.LEVEL_ID;
```
2. Add the Interpoints' code within the profile (By changing the relevant profile in Oracle Applications). I.e. verify that the profile_option_value looks like: "`begin veritas_custom_profile; <customer code goes here (or empty)> end;`"

This query shows all relevant profiles affecting the code.

Correcting typing errors in the system profile

Typing errors in the system profile may prevent Oracle Applications forms from opening, including the system profile form. To validate that there is no other definition that overrides your profile definition and to correct any typing errors, you need to log in to the Oracle database externally using SQL*Plus.

To correct typing errors

1. Log in to your Oracle database with the APPLSYS account.
2. Run the following command to view erroneous text: `Select * from FND_PROFILE_OPTION_VALUES where PROFILE_OPTION_VALUE like '%veritas%';`
You may search for any expression by replacing '%veritas%' in the where clause with the string you are looking for. For example, to search for the profiles that were entered on July 13, 1975, execute the following command:
`Select * from FND_PROFILE_OPTION_VALUES where last_update_date=to_date ('13-JUL-75', 'DD-MON-YY');`
3. Run the following command to correct the errors:
`update FND_PROFILE_OPTION_VALUES set PROFILE_OPTION_VALUE = 'begin veritas_custom_profile; end;'`
`where PROFILE_OPTION_VALUE like '%veritas%';`
You may update any expression by replacing '%veritas%' in the where clause with the string you are looking for. For example, to update all profiles that were entered on July 13, 1975, execute the following command:
`update FND_PROFILE_OPTION_VALUES set PROFILE_OPTION_VALUE='begin veritas_custom_profile;end;' where last_update_date=to_date ('13-JUL-75', DD-MON-YY');`
4. Commit the changes.

Sampling Alerts custom metrics from the monitored instance

To enable sampling of Alerts custom metrics for this instance

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the General tab.
3. Mark the box "Enable sampling of custom metrics for this instance."
4. Click **OK**.

Installing operating system tier collectors

This section includes the following topics:

- [Pre-installation tasks](#)
- [Installing an Operating System Tier instance](#)
- [Post-installation action items](#)

Pre-installation tasks

Most of the screens in this installation require you to input details regarding your information systems. Before installing an Operating System Tier instance, compile a list of all required user inputs based on the screen names and tables below. Each table (in the sections below) lists the options per screen.

Before installing an Operating System Tier instance, verify that you have performed the following tasks:

- Use the Precise Framework Installer to install framework components
- Perform any pre-installation tasks that may be required

Installing an Operating System Tier instance

This section describes the procedures that are needed to install an Operating System Tier instance. You have the option of adding a new instance, as well as adding a new application. For information on editing or removing an existing instance, see [Editing or removing tier instances or clusters](#).

Adding an Operating System Tier instance

On the AdminPoint Instances screen, you can add a new Tier instance.

i Before adding a Tier instance, create a list of all required inputs based on the screen information below.

To add a Tier instance

1. From StartPoint, click the AdminPoint tab.
2. Click the Setup tab.
3. From the drop-down menu, select **Instances & Clusters**.
4. Click the **All instances** tree item
5. At the bottom of the Display Instances & Clusters screen, click **Add Instance**. An Add New Instance dialog box appears.
6. Select the required technology from the list.
7. Select the application from the list. If the desired application is not on the list, use the following steps:
 - a. Click **Add**.
 - b. In the Application Name field, type in the new application name.
 - c. On the Application System field, select the system application from the list.
 - d. Click **OK**.

i To install an instance in an application, you must have `ADMINISTRATE.INSTALL` permission for the application in which you want to install the instance. If you only have permission for a specific technology, you will only be able to install in an application that is either empty, or is comprised of only the same technology.

8. Select a Tier from the list.
9. Click **OK** to view the next screen.

 Always refresh AdminPoint after adding an instance.

Defining Operating System property settings

Perform the following procedures in the order they are given.

To define property settings for Operating System, click the drop-down menu and select the server with the Operating System instance that you wish to monitor. Click **Add** to enter the name of a server not on the list. For more information, see [Adding a new server](#).

About the AdminPoint Tier installation preview screen

The preview screen signifies that the AdminPoint Tier installer has gathered enough information to begin the installation phase.

The preview screen displays the following details before installation begins:

- Server name or IP address
- The name of the monitored server
- What actions will be performed in their respective order
- Installation folder (location)
- Required disk space
- Currently available disk space

At this screen, you can still change any of the settings displayed. Click **Back** to change any of the displayed settings. Click **Next** to continue installation. Click **Cancel** to stop the installation process.

About the AdminPoint Tier installation progress screen

This screen appears when the AdminPoint Tier installer is actually performing installation. Installation may take several minutes.

The progress screen visually displays the progress of actual installation on selected servers.

About the AdminPoint Tier installation complete screen


This screen appears when the AdminPoint Tier Installer has completed installation of all Tier instances.

If there are no action items, click **Finish** (it will be the only option available) to complete the instance installation. If there are action items, click **Next** (it will be the only option available).

About the AdminPoint Tier Action Items screen

After a Tier instance is installed, you must perform post-installation tasks as may be required. Only after completing any post-installation tasks required can you start using the Tier instances you have just installed.

Perform any tasks displayed on this screen. Click **Execute** for Precise to perform the action items.

 On Solaris and Linux, you may need to manually perform the action item with a root-level permission, dependent on your kernel configuration.

Click **Mark as done** if you have performed the action items yourself.

Post-installation action items

When the Operating System Tier is installed, post-installation tasks may be required. Follow any instructions that might appear on the Action Items screen.

Sampling Alerts custom metrics from the monitored instance (OS)

To enable sampling of Alerts custom metrics for this instance

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the General tab.
3. Mark the box "Enable sampling of custom metrics for this instance."
4. Click **OK**.

Installing other tier collectors

This section includes the following topics:

- [Pre-installation tasks](#)
- [Installing an Other Tier instance](#)
- [Post-installation action items](#)

Pre-installation tasks

Most of the screens for this installation require you to input details regarding your information systems. Before performing this installation, compile a list of all required user inputs based on the screen names and tables below. Each table (in the sections below) lists the options per screen.

Before installing an Other Tier instance, verify that you have performed the following tasks:

- Use the Precise Framework Installer to install framework components
- Perform any pre-installation tasks that may be required

Installing an Other Tier instance

This section describes the procedures that are needed to install an Other Tier instance. You have the option of adding a new instance, as well as adding a new application. For information on editing or removing an existing instance, see [Editing or removing tier instances or clusters](#).

Adding an Other Tier instance

On the AdminPoint Instances screen, you can add a new Tier instance.

i Before adding a Tier instance, create a list of all required inputs based on the screen information below.

To add a Tier instance

1. From StartPoint, click the AdminPoint tab.
2. Click the Setup tab.
3. From the drop-down menu, select **Instances & Clusters**.
4. Click the **All instances** tree item
5. At the bottom of the Display Instances & Clusters screen, click **Add Instance**. An Add New Instance dialog box appears.
6. Select the required technology from the list.
7. Select the application from the list. If the desired application is not on the list, use the following steps:
 - a. Click **Add**.
 - b. In the Application Name field, type in the new application name.
 - c. On the Application System field, select the system application from the list.
 - d. Click **OK**.

i To install an instance in an application, you must have `ADMINISTRATE.INSTALL` permission for the application in which you want to install the instance. If you only have permission for a specific technology, you will only be able to install in an application that is either empty, or is comprised of only the same technology.


8. Select a Tier from the list.
9. Click **OK** to view the next screen.

 Always refresh AdminPoint after adding an instance.


Defining Other Tier property settings

To define Other Tier property settings

1. From the drop-down menu, select an existing Tier name or type in a new, unique name of the Other Tier where you want to monitor network activity by the Insight Savvy for Network agents.

 This name will appear in the Precise user interface. For example, if your application contains an IBM Informix database server, name the Tier `informixSrv`; or, if you want to monitor this Tier remotely, name it `remotelnformix`.

2. From the drop-menu, select the listed option that represents the position of the Tier in your application. You can choose from the following:
 - **Front-end.** The first connection, or input side, in your application.
 - **Application Server.** The middle tier in your application, responsible for the business logic.
 - **Database.** The back-end tier in your application.
3. From the drop-down menu, select the network protocol of the monitored application. You can choose from the following:
 - Citrix
 - Other

 The monitored application can use a Citrix protocol or any other protocol. If you need to find the port for a Citrix Tier you want to monitor, you can use the `psinet` utility (located in the `products\insight\bin` folder) and look for the `termsrv.exe` process. Its output shows you the port number process ID and process name listening on the TCP socket. You will see that the Citrix clients are connected to one listening port (the default is 1494). Use this port when installing a new Citrix instance.

4. Select one of the following:
 - **Local.** This enables Insight Savvy for Network to monitor all TCP traffic on a local Listener port. The local Listener port is a server port to which clients connect. For example, a Web server usually listens on the local port 80, which is the default.
 - **Remote.** This enables Insight Savvy for Network to monitor all TCP traffic to a remote server port. The Insight Network agent is installed on the client side of the connection and monitors the client activity against a remote server port. Remote monitoring is usually used to monitor services that cannot be monitored locally (mainframe or unsupported operating systems running TCP applications). For example, if an application server is connected to a database server on an unsupported platform (for example mainframe), you can monitor the activity generated from the application server to the remote database server.

 If you select **Remote**, you must select Static for the TCP/IP port monitoring.

5. From the drop-down menu, select the name of the server where you want to install the instance of the Other Tier. The server name or IP address only appears in the list if you previously defined it as a Precise Server. Click **Add** to enter the name of a server not on the list. For more information, see [Adding a new server](#).

i If you monitor this server locally, this is also the server where the Insight Savvy for Network is installed. If you monitor this server remotely, the Insight Savvy for Network is installed on a different server(s). If you choose to monitor remotely, instead of selecting the server name from the drop-down menu or by clicking **Add**, you will need to type the server name in the textbox.

6. Select monitoring for either Static or Dynamic TCP/IP ports.

i You may want to monitor dynamic ports instead of a range of specific ports (Static). This option is suitable if the port can change during the execution of an application or if the port is unknown at the time of installation.

If you selected monitoring for Static TCP/IP ports

- a. On the “Other Instance Installation-Ports Settings” screen, add the range of TCP/IP Ports in the specified text boxes.
- b. Click **Add** to add the range to the list.
- c. Click **Next**.

If you selected monitoring for Dynamic TCP/IP ports:

- a. On the “Other Instance Installation-Dynamic Settings” screen, add at least one name to the “Include Programs” table with a maximum of nine characters
- b. Click **Add** to insert them. The table can contain a maximum of three names. A program will be selected if a substring matches a name appearing in the “Include Programs” list but does not match any names in the “Exclude Programs” list.
- c. Click **Next**.

7. Click **Next**.

You can also do the following

1. Add a program name to the Exclude Programs table if that program does not need to be monitored.
2. Click **Add**. The table can contain a maximum of three names, each with a maximum of nine characters.
3. Click **Next**.

Setting remote monitoring options

If you selected remote monitoring, you need to choose the servers from which you want to monitor the remote Tier. After clicking **Next** on the “Other Instance Installation-Ports Setting” page, perform the following procedure:

To set remote monitoring options for the Other Tier

1. From the Available Servers list on the left, select the respective server machine.
2. Use the right arrow to move the server to the Selected Servers list.
3. Repeat this step for all server machines that communicate with the Tier you want to monitor.
4. Click **Next**.

About the AdminPoint Tier installation preview screen

The preview screen signifies that the AdminPoint Tier installer has gathered enough information to begin the installation phase.

The preview screen displays the following details before installation begins:

- Server name or IP address
- The name of the monitored server
- What actions will be performed in their respective order

- Installation folder (location)
- Required disk space
- Currently available disk space

At this screen, you can still change any of the settings displayed. Click **Back** to change any of the displayed settings. Click **Next** to continue installation. Click **Cancel** to stop the installation process.

About the AdminPoint Tier installation progress screen

This screen appears when the AdminPoint Tier installer is actually performing installation. Installation may take several minutes.

The progress screen visually displays the progress of actual installation on selected servers.

About the AdminPoint Tier installation complete screen


This screen appears when the AdminPoint Tier Installer has completed installation of all Tier instances.

If there are no action items, click **Finish** (it will be the only option available) to complete the instance installation. If there are action items, click **Next** (it will be the only option available).

About the AdminPoint Tier Action Items screen

After a Tier instance is installed, you must perform post-installation tasks as may be required. Only after completing any post-installation tasks required can you start using the Tier instances you have just installed.

Perform any tasks displayed on this screen. Click **Execute** for Precise to perform the action items.

 On UNIX, you will need to manually perform the action item with root-level permission.

Click **Mark as done** if you have performed the action items yourself.

Post-installation action items

When the Other Tier Collectors have been installed, post-installation tasks are required if any Insight Savvies were running during the installation process.

Perform all post-installation tasks by following the instructions on the Action Items screen and click **Finish**.

Sampling Alerts custom metrics from the monitored instance (Other)

To enable sampling of Alerts custom metrics for this instance

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the General tab.
3. Mark the box "Enable sampling of custom metrics for this instance."
4. Click **OK**.

Installing the Precise for vCenter Server

This section includes the following topics:

- [Pre-installation tasks](#)
- [Installing Precise for vCenter Server](#)
- [Post-installation action items](#)

Pre-installation tasks

Most of the screens for this installation require you to input details regarding your information systems. Before performing this installation, compile a list of all required user inputs.

Before installing a vCenter Server instance, verify that you have performed the following tasks:


- Use the Precise Framework Installer to install framework components
- Collect the user name and password for accessing the vCenter Server
- Prepare the certificate and client certificate private key file
- Close the Services window in the Control Panel if you are installing on a Windows server.

Installing Precise for vCenter Server

This section describes the procedures that are needed to install Precise for vCenter Server. You have the option of adding a new instance. For information on editing or removing an existing instance, see [Editing or removing tier instances or clusters](#).

Adding Precise for vCenter Server

On the AdminPoint Instances screen, you can add a new instance.

 Before adding an instance, create a list of all required inputs based on the screen information below.

1. To add a Tier instance
2. Click the Setup tab.
3. From the drop-down menu, select **Instances & Clusters**.
4. Click the **All instances** tree item
5. At the bottom of the Display Instances & Clusters screen, click **Add Instance**.
6. Select the vCenter Server technology from the list.
7. Select the default application from the list.
8. Select a Tier from the list.
9. Click **OK** to view the next screen.

 Always refresh AdminPoint after adding an instance.

Defining the vCenter Server property settings

To define the vCenter Server property settings

1. From the "Server Name" drop-down menu, select the server on which the vCenter Server Collector will be located.
2. Click **Add** to enter the name of a server not on the list. For more information, see [Adding a new server](#).
3. From the "Instance Server" drop-down menu, select the server running the vCenter Server.

4. In the "Port" text box, enter the Port of the vCenter Server instance.
5. In the "Login" text box, enter the name of the user who has permissions for the vCenter server. You can either use an existing user with administrator privileges or have your vCenter Server administrator create a special client for Precise.
6. In the "Password" text box, enter the password.
7. When you want to define a connection certificate:
 - a. Mark the "Use SSL" check box.
 - b. Mark the "Use certification" check box.
8. Click **Next**.

About the AdminPoint Tier installation preview screen

The preview screen signifies that the AdminPoint Tier installer has gathered enough information to begin the installation phase.

The preview screen displays the following details before installation begins:

- Server name or IP address
- The name of the monitored server
- What actions will be performed in their respective order
- Installation folder (location)
- Required disk space
- Currently available disk space

At this screen, you can still change any of the settings displayed. Click **Back** to change any of the displayed settings. Click **Next** to continue installation. Click **Cancel** to stop the installation process.

About the AdminPoint Tier installation progress screen

This screen appears when the AdminPoint Tier installer is actually performing installation. Installation may take several minutes.

The progress screen visually displays the progress of actual installation on selected servers.

About the AdminPoint Tier installation complete screen

This screen appears when the AdminPoint Tier Installer has completed installation of all Tier instances.

If there are no action items, click **Finish** (it will be the only option available) to complete the instance installation. If there are action items, click **Next** (it will be the only option available).

About the AdminPoint Tier Action Items screen

After a Tier instance is installed, you must perform post-installation tasks as may be required. Only after completing any post-installation tasks required can you start using the Tier instances you have just installed.

Perform any tasks displayed on this screen. Click **Execute** for Precise to perform the action items. Click **Mark as done** if you have performed the action items yourself.

Post-installation action items

When the vCenter Server is installed, post-installation tasks may be required. Follow any instructions that might appear on the Action Items screen.

Specifying the exclude list for Precise for vCenter Server

The following procedure is used to define a list of servers about which the Precise for vCenter Server Collector will not gather data from vCenter Server.

To add servers to the exclude list

1. After specifying the properties for the vCenter Server instance, click **Advanced**.
2. Click the Exclude tab.
3. Click **Add**.
4. Type the name of the server in the list. It is possible to use regular expressions to specify more than one server. For example: "(myServer)" - excludes all servers that have myServer in their name.
5. Click **Add** to add more names.
6. Click **OK** to finalize the list.

For more information on regular expressions, see [Describing regular expressions](#).

To remove servers from the exclude list

1. After specifying the properties for the vCenter Server instance, click **Advanced**.
2. Click the Exclude tab.
3. Select the name(s) of the server(s) to remove (multiple selection can be performed with Shift+Click and Ctrl+Click).
4. Click **Remove**.
5. Click **OK**.

Installing the Tuxedo tier collector

This section includes the following topics:

- [Pre-installation tasks](#)
- [Installing a Tuxedo Tier instance](#)
- [Post-installation action items](#)

Pre-installation tasks

Most of the screens for this installation require you to input details regarding your information systems. Before performing this installation, compile a list of all required user inputs based on the screen names and tables below. Each table (in the sections below) lists the options per screen.

Before installing a Tuxedo Tier instance, verify that you have performed the following tasks:

- Use the Precise Framework Installer to install framework components

Installing a Tuxedo Tier instance

This section describes the procedures that are needed to install a Tuxedo Tier instance. You have the option of adding a new instance, as well as adding a new application. For information on editing or removing an existing instance, see the [Editing or removing tier instances or clusters](#).


Adding a Tuxedo Tier instance

On the AdminPoint Instances screen, you can add a new Tier instance.

 Before adding a Tier instance, create a list of all required inputs based on the screen information below.

To add a Tier instance

1. From StartPoint, click the AdminPoint tab.
2. Click the Setup tab.
3. From the drop-down menu, select **Instances & Clusters**.
4. Click the **All instances** tree item
5. At the bottom of the Display Instances & Clusters screen, click **Add Instance**. An Add New Instance dialog box appears.
6. Select the required technology from the list.
7. Select the application from the list. If the desired application is not on the list, use the following steps:
 - a. Click **Add**.
 - b. In the Application Name field, type in the new application name.
 - c. On the Application System field, select the system application from the list.
 - d. Click **OK**.

 To install an instance in an application, you must have `ADMINISTRATE.INSTALL` permission for the application in which you want to install the instance. If you only have permission for a specific technology, you will only be able to install in an application that is either empty, or is comprised of only the same technology.


8. Select a Tier from the list.
9. Click **OK** to view the next screen.

 Always refresh AdminPoint after adding an instance.


Defining Tuxedo property settings

To define Tuxedo property settings


1. Click the drop-down menu and select the server with the Tuxedo domain. This is the name or IP address of the server where you want to install the Tuxedo Tier Collector. The server name or IP address appears in the list only if you previously defined it as a Precise server. In upgrade mode, the list contains all servers that were installed or upgraded.
2. Click **Add** to enter the name of a server not on the list. For more information, see [Adding a new server](#).
3. Click the drop-down menu and select the auto-detected Tuxedo domain from the list.

 When a Tuxedo domain is detected, other text boxes will be auto-filled. If one of the editable text boxes is edited, the contents of the Detected Tuxedo domain text box will be cleared. On Windows and UNIX, Tuxedo detection is dependent on running processes. In most configurations of HP-UX, Linux, and Solaris 10, detection will be partial and will only return the instance name. This is also the case for AIX and other Solaris versions, if a specific security update is installed.


4. Enter a unique Tuxedo instance name that will enable you to distinguish between multiple instances. This is the ID of the Tuxedo software component configuration to be used with this instance.

 To obtain the Tuxedo domain ID, look for the BBL process on the server machine; then use the name following the DOM option. Alternatively, look for the UBBCONFIG file (or a file containing UBB in its name); then use the value of the DOMAINID variable in the RESOURCES section. If you are not sure what the Tuxedo domain ID is, you can use the UNIX user name running the BBL process on the server machine, or simply use an arbitrary name. In upgrade mode, this is the name of the Tuxedo domain you want to upgrade. Via the auto-detection mechanism, invalid characters for Precise may appear. This should be changed manually.


5. Enter the installation home folder of the Tuxedo information system. This is the installation home folder of the Tuxedo information system.

 To obtain the path of the Tuxedo installation folder, log in as the Tuxedo operator and check the value of the TUXDIR application variable. Alternatively, locate the Tuxedo bin folder where the BBL program is located; the Tuxedo installation folder is immediately above it.

6. Enter the full path of the configuration file of the Tuxedo information system that you plan to monitor. This is the full path of the configuration file of the Tuxedo information system that you plan to monitor.

 The Insight Savvy for Tuxedo uses this file to find the Tuxedo domain's logical name, which it needs to read data out of the domain shared memory. To find the Tuxedo configuration file, log in as the Tuxedo operator and check the value of the TUXCONFIG application variable. This is a binary file. Do not confuse it with the textual UBBCONFIG file. In a PeopleSoft installation, the name of the Tuxedo configuration file is usually PSTUXCFG. This file is located in the PeopleSoft installation folder/appserv/PeopleSoft Domain folder. For example:
/home/hrprd/hrprd831/appserv/HR_PRD831/PSTUXCFG

7. Click the drop-down menu and select the Tuxedo version.

 Precise supports Tuxedo 6.5 to 10.3. To obtain the Tuxedo version number, log in as the Tuxedo operator and run the following command: `tadmin -v`.

8. Click **Next**.

About the AdminPoint Tier installation preview screen

The preview screen signifies that the AdminPoint Tier installer has gathered enough information to begin the installation phase.

The preview screen displays the following details before installation begins:

- Server name or IP address
- The name of the monitored server
- What actions will be performed in their respective order
- Installation folder (location)
- Required disk space
- Currently available disk space

At this screen, you can still change any of the settings displayed. Click **Back** to change any of the displayed settings. Click **Next** to continue installation. Click **Cancel** to stop the installation process.

About the AdminPoint Tier installation progress screen

This screen appears when the AdminPoint Tier installer is actually performing installation. Installation may take several minutes.

The progress screen visually displays the progress of actual installation on selected servers.

About the AdminPoint Tier installation complete screen

This screen appears when the AdminPoint Tier Installer has completed installation of all Tier instances.

If there are no action items, click **Finish** (it will be the only option available) to complete the instance installation. If there are action items, click **Next** (it will be the only option available).

About the AdminPoint Tier Action Items screen

After a Tier instance is installed, you must perform post-installation tasks as may be required. Only after completing any post-installation tasks required can you start using the Tier instances you have just installed.

Perform any tasks displayed on this screen.

Click **Execute** for Precise to perform the action items.

 On UNIX, you will need to manually perform the action item with a root-level permission.

Click **Mark as done** if you have performed the action items yourself. See Post-installation action items for more information.

Post-installation action items

When the Tuxedo Tier Collectors have been installed, post-installation tasks may be required.

- Run the following commands only if they have not been previously run for other Tuxedo instances on this server and this server is a UNIX server:
 - Log in as root user and run the following commands:

```
cd <precise_root>/products/insight/install
./tuxedo_root.sh
```
 - A Tuxedo information system can have one or more Tuxedo servers. On each Tuxedo server, you can have one or more Tuxedo domains. A Tuxedo domain has a logical definition: it is an instance holding common business units and handling client processes. The Tuxedo Tier should be installed for each Tuxedo domain. Therefore, if your Tuxedo information system has more than one domain, you should create a Tuxedo Tier instance for each domain.

i It is recommended to install the Insight Savvy for Tuxedo in each Tuxedo domain. To find out how many Tuxedo domains are running on your Tuxedo server machine, count how many BBL processes are running on this machine. On Windows, look for BBL processes in the Windows Task Manager. On UNIX, run the following command: `ps -ef|grep BBL`

To perform Tuxedo Tier post-installation tasks

1. In the Tuxedo Tier - Installation dialog box, click **Next**.
2. In the Tuxedo Tier - Post-Installation dialog box, follow the instructions to perform all post-installation tasks.
3. Click **Finish**.

Viewing Tuxedo networks statistics in Insight

Select this option if you want to view Tuxedo network statistics in Insight. You must have the Insight Savvy for Network installed for this option to work.

To enter Network inputs

1. After adding all Tier installation instance properties inputs, click **Advanced**.
2. Click the Network tab.
3. Mark the "Associate Tuxedo activity with network statistics" box.
4. Click **OK**.

Advanced installation features

This section includes the following topics:

- [Changing default installation parameters](#)
- [Installing in parallel](#)
- [Permissions needed for installation](#)
- [Re-using deleted instance data](#)

Changing default installation parameters

The installer uses defaults for the required fields for installation like the default for an installation folder of a new server. You can change the Precise configuration to use your own specified defaults.

To change the Precise defaults:

1. Edit the Precise registry in `products\i3fp\registry\products\infrastructure\setup\settings.xml`
2. Add these elements:

```
<defaults>
  <process-name>
    parameters for change
  </process-name>
</defaults>
```

An example of this is as follows:

```
<defaults>
  <aptier-OR>
    <parameter name="oracle-i3-user" value="Precise_OR_1234"/>
  </aptier-OR>
</defaults>
```

3. Restart Precise FocalPoint.

For more information on available installation parameters, see the relevant sections in the [Precise CLI Utility Reference Guide](#).

Installing in parallel

The installer supports parallel GUI and CLI installations. However, the following installations cannot be invoked in parallel, and will produce errors if a parallel installation is attempted.

- You cannot run two different FocalPoints installation in parallel
- You cannot run two instances installations on the same server in parallel

If you are running a CLI installation and another parallel installation is running, creating one of the previously mentioned situations, the CLI Utilities will terminate with an error message.

If you want the CLI installation to wait for the other installation to finish first (instead of getting the error message), supply the following parameter in the CLI Utilities command:

```
<parameter name="queue-parallel-installations" value ="true"/>
```

Permissions needed for installation

- To install/uninstall new Precise FocalPoint, the following permissions are required: `INSTALL EXECUTE` on the related technology
- To install/edit/uninstall an instance, the following permissions are required:

- For a new instance installation: INSTALL EXECUTE on the instance's technology and INSTALL EXECUTE on the application on which the instance is to be installed on.
- For an existing instance uninstall/edit: INSTALL EXECUTE on the instance and INSTALL EXECUTE on the instance's application.

Re-using deleted instance data

Re-using deleted instance data is a feature that can be used in the following scenarios:

- If you have deleted an instance, and want to install a new instance that will show the deleted instance data.
- If your instance was moved to another server and/or renamed, you can uninstall the instance in the Precise user interface and re-install it using the new server name and/or new name.

The following procedure describes how to re-use deleted instance data.

To re-use delete instance data

1. Install the new instance and click **Advanced**.
2. Select the General tab.
3. Check **Associate this instance with the data of a deleted instance**.
4. Select the relevant instance in the check box.
5. Continue with the instance installation.

Installing a federated application

This section includes the following topics:

- [About federation installation](#)
- [Adding a new Framework node](#)
- [Connecting to an existing Framework node](#)
- [Uninstalling a Framework node](#)
- [Disconnecting from a Framework node](#)

About federation installation

The Precise Framework FocalPoint can monitor and service a limited amount of instances and applications. To increase monitoring and service for additional instances and applications, you can add secondary Framework nodes to the primary Framework node. Using federated installation you can also install products that require an Oracle based PMDB or an SQL Server based PMDB.

Once you have added new Framework nodes to the primary Framework node, login and property settings for all Framework nodes, is done through the primary Framework node (via AdminPoint). Additional options for creating and using Framework nodes are as follows:

- Install new Framework nodes through an existing primary Framework node
- Connect two existing primary Framework nodes, so that one will serve as primary Framework node for the other
- Disconnect an existing secondary Framework node, to convert it into a primary Framework node

Adding a new Framework node


To add a Framework node from AdminPoint

1. From StartPoint, click the AdminPoint tab.
2. Click the Setup tab.
3. From the drop-down menu, select **Nodes**.
4. At the bottom of the Display Nodes screen, click **Add**.
5. In the Installing/Connecting Node dialog box, select **Install a new node**.
6. Click **Next**.
7. To complete the Framework node installation, see [Selecting the server for Framework installation](#).

Connecting to an existing Framework node

To connect to an existing Framework node

1. From StartPoint, click the AdminPoint tab.
2. Click the Setup tab.
3. From the drop-down menu, select **Nodes**.
4. From the list of installed nodes in the Display Nodes screen, select the node that you would like to add a node to.
5. At the bottom of the Display Nodes screen, click **Add**.
6. In the Installing/Connecting Node dialog box, select "Connect existing node."

 Verify that your Precise system has been upgraded to the latest version of Precise before proceeding.

7. Click **Next**.

8. On the following screen, connect to the node, by entering the following connection details:
 - Server name or IP address
 - Listener port number
 - Precise Admin user
 - Precise Admin password
9. Click **Next**.

Precise Framework Installer connects to the selected existing node and provides a summary screen with the details of the new connection.

Uninstalling a Framework node


To uninstall a Framework node

1. From StartPoint, click the AdminPoint tab.
2. Click the Setup tab.
3. From the drop-down menu, select **Nodes**.
4. In the Display Nodes screen, select the Node you want to uninstall.
5. At the bottom of the Display Nodes screen, click **Remove**.
6. In the Uninstalling/Disconnecting Node dialog box, select **Uninstall Node**.
7. Click **Next**.
8. On the following screen, confirm the node to be uninstalled, by enter the following connection details:
 - Server name or IP address
 - Precise GUI Port
 - Precise Admin user
 - Precise Admin password
9. After reviewing the details of the uninstallation in the Preview screen, click **Next**.
10. Perform any action items that are indicated on the Action Items screen.

Disconnecting from a Framework node

To disconnect from a Framework node

1. From StartPoint, click the AdminPoint tab.
2. Click the Setup tab.
3. From the drop-down menu, select **Nodes**.
4. In the Display Nodes screen, select the node you want to disconnect from.

 Don't select the node that is listed as the Primary node.

5. At the bottom of the Display Nodes screen, click **Remove**.
6. In the Uninstalling/Disconnecting Node dialog box, select **Disconnect Node**.
7. Click **Next**.

Precise Framework Installer disconnects from the existing node.

Editing or removing tier instances or clusters

The following section describes the procedures for editing and removing Tier instances or clusters.


- [Editing a Tier instance or cluster](#)
- [Deleting a Tier instance or cluster](#)
- [Uninstalling a J2EE remote instance](#)

Editing a Tier instance or cluster

You can edit a Tier Instance or Cluster via the Display Instances & Clusters screen.

To edit an instance or cluster

1. In StartPoint, click the AdminPoint button.
2. Click the Setup tab.
3. From the drop-down menu, select **Instances & Clusters**. The Display Instances & Clusters screen appears.
4. Click the **All Instances** or **All Clusters** tree item to display all instance or clusters, respectively.
5. In the list that appears, select the instance or cluster to edit.
6. Click **Edit**. The instance or cluster installation wizard for the selected technology appears.
7. Follow the wizard instructions as they appear on the screen.


 Only standalone instances or clusters can be edited. An instance that is part of a cluster cannot be edited.


Deleting a Tier instance or cluster

You can delete a Tier instance or cluster via the Display Instances & Clusters screen.

To delete an instance or cluster

1. In StartPoint, click the AdminPoint button.
2. Click the Setup tab.
3. From the drop-down menu, select **Instances & Clusters**. The Display Instances & Clusters screen appears.
4. Click the **All Instances** or **All Clusters** tree item to display all instance or clusters, respectively.
5. In the list that appears, select the instance or cluster to delete.
6. At the bottom of the Display Instances & Clusters screen, click **Delete**. The Uninstall Instance or Uninstall Cluster dialog box appears.
7. Select if you want to enable or disable the historical data display for the selected instance or cluster, and click **Next**.

 If you enable the historical data display, monitoring will be stopped when continuing this procedure, but you will still be able to see the instance in AdminPoint.

 At this point, the Uninstall Program error message may appear. See [About the instance Uninstall Program error message](#).

8. Click **Next** to finalize the procedure.
9. Refresh AdminPoint.

Uninstalling a J2EE remote instance

Perform the following steps when you want to uninstall a J2EE remote instance.

To uninstall a J2EE remote instance

1. Perform the steps as described in [Deleting a Tier instance or cluster](#).
2. Perform the action items described in [About the action items for uninstalling a J2EE remote instance](#).

About the action items for uninstalling a J2EE remote instance

1. Remove all JVM arguments that you may have added to the JVM startup script for it to work with Precise, including:
 - `-javaagent...`
 - `-Dprecise.home`
 - `-Djvm.name`
2. Delete the JVM configuration folder `<LOCAL-LIB>/products/j2ee/config/<JVM-NAME>`
3. Restart the JVM for the changes to take effect.

About the instance Uninstall Program error message

When deleting a instance, the Uninstall Problem error message may appear. This message can reflect an issue with the uninstall process, or it can result from the instance or server no longer being available.

After checking the logs for more details regarding the error, select the appropriate option:

- If you have corrected the error and wish to run the uninstall script again, select 'Retry the uninstallation process.'

OR

- If the instance or server is no longer available, select 'The instance or server is not available - stop monitoring it.' This ignores any further uninstall errors for the instance, and removes the instance registration from the Precise product.

Click **OK** to continue according to your selection or **Abort** to cancel the uninstallation process.

Removing Precise components

This section includes the following topics:

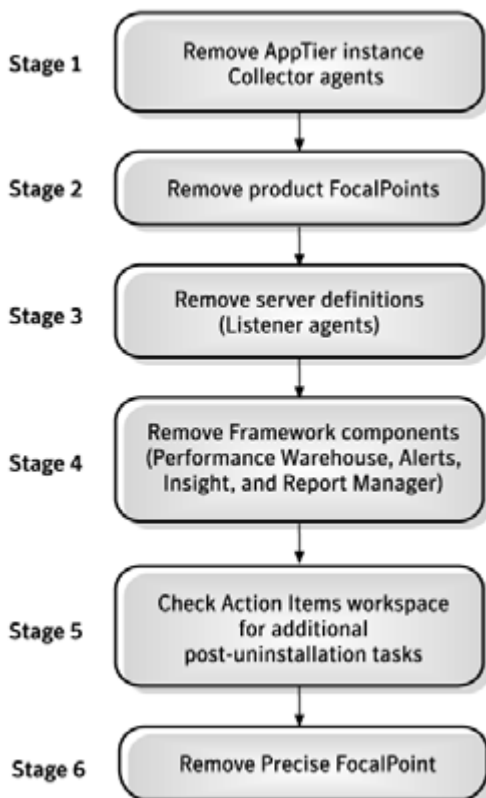
- [About removing Precise components](#)
- [Removing Tier Collectors](#)
- [Removing Product FocalPoints](#)
- [Removing server definitions](#)
- [Removing Framework Components](#)
- [Checking Action Items](#)
- [Removing Precise FocalPoints](#)

About removing Precise components

You can remove Precise software components from your information system.

The following chart shows the uninstallation road map. When removing Precise software components from your information system, verify that you follow the road map in the order shown below.

Figure 1 Uninstallation road map



Removing Tier Collectors

To remove Tier Collectors

1. From StartPoint, click the AdminPoint tab.
2. Click the Setup tab.

3. From the drop-down menu, select **Instances**.
4. In the instance list, select the instance that you wish to remove.
5. At the bottom of the Display Instances screen, click **Remove**.
6. On the preview screen, click **Next**.

Complete any relevant action items that might appear. For more information, see [Action Items for Removing Tiers](#).

Removing Product FocalPoints

After removing the last Tier agent, action items are generated for how to remove specific product FocalPoints. Alternatively, you can configure the registry to auto-uninstall product FocalPoints, with the removal of the last Tier agent.

To configure the registry to auto-uninstall product FocalPoints

1. On the main node Precise FocalPoint, open the following file:
`products\i3fp\registry\products\infrastructure\setup\products\<product-code>.xml`
`<product-code>` is the two-letter code of the product from which you want to automatically uninstall its FocalPoint.
2. Locate the tag: `<auto-uninstall>` and update its value to "true": `<auto-uninstall>true</auto-uninstall>`.
3. Delete the following status file:
`products\i3fp\registry\products\infrastructure\setup\products\<product-code>.xml.status`
4. Restart the main node Precise FocalPoint.

Removing server definitions

Server definitions are automatically removed by default. Alternatively, the user can configure the registry so the server will not be automatically removed. In this case, the user should use CLI to remove the server. For more information, see [Precise CLI Utility Reference Guide](#).

To configure the registry so the server will not be automatically removed

1. On the main node Precise Focalpoint, open the following file:
`products\i3fp\registry\products\infrastructure\setup\settings.xml`
2. Locate the tag `<auto-remove-ba>` and update its value to:
`"false": <auto-remove-ba>false</auto-remove-ba>`
3. Delete the following status file:
`products\i3fp\registry\products\infrastructure\setup\settings.xml.status`
4. Restart the main node Precise FocalPoint.

Removing Framework Components

To remove FrameWork Components

1. Activate the setup program found in the Precise installer by double-clicking the SetUp program.
2. Click **Next** on the Welcome screen.
3. Select **I accept the terms of the license agreement**, and then click **Next**.
4. Select **Uninstall Precise version x.x**, and then click **Next**.
5. On the Uninstall screen, enter the following parameters:
 - Precise GUI Web server
 - Server name or IP address
 - GUI Port
 - Precise Admin user

- Precise Admin password

The preview screen provides a preview of all components to be uninstalled.

6. On the Installation Complete screen, click **Finish**. If there are action items, click **Next**.
7. If there are action items, click **Execute** for Precise to perform the action items or click **Mark as done** if you have performed the action items yourself.
The FrameWork components, including PMDB, Alerts, Insight, and Foresight, are removed.

Checking Action Items

To check for action items


1. From StartPoint, click the AdminPoint tab.
2. Click the Setup tab.
3. From the drop-down menu, select **Action Items**.
4. Select the action item to view task.
5. Perform all required tasks.

Removing Precise FocalPoints

After removing all Precise agents from the existing Tier instances, all product frameworks, and all server definitions, you need to remove Precise FocalPoint.

To remove Precise FocalPoint

1. Log in to the Precise FocalPoint machine (for UNIX use the precise unix user).
2. Run the following command:
 - **Windows**
`\products\i3fp\bin\psin_uninstall_i3fp.bat`
 - **UNIX**
`./products/i3fp/bin/psin_uninstall_i3fp.sh`

 For Windows, you can also use the Add/Remove Programs feature found in your computer's control panel along with performing all uninstall related action items.

Installing Precise in a failover application

This section includes the following topics:

- [About Precise in failover applications](#)
- [Installing live standby configurations \(active/passive\)](#)
- [Installing parallel partitions configurations](#)
- [Generating Precise startup and shutdown scripts](#)
- [Configuring Precise services for Precise for SQL Server failovers](#)

About Precise in failover applications

Installing the Precise product suite in a failover application tends to be more complex than installing in a regular application. It is highly recommended that you consult with Precise Customer Support prior to such an installation.

Installing live standby configurations (active/passive)

In a live standby (or active/passive) configuration, an application runs on a primary server, or node. A dedicated secondary, or "backup," server exists to take over if the primary server fails. The backup server is passive, meaning that it is not performing any other function.

The datafiles, IP addresses, and other resources of the application may be active on only one node at a time. When the software detects that a resource has failed, it relocates the failed resource to the standby server.

Two of these resources affect the Precise installation:

- **File system.** Both servers must have access to at least one shared file system. This file system can be either (a) accessible from all servers at all times, or (b) accessible only from active node. In case of (b), all post-installation tasks described later must be postponed until the shared file system is accessible from the standby node.
- **IP addresses and host names.** Clients must know the application by a logical name, which is relocated - with the application - to the active server. Otherwise, all clients will have to be updated on each server failover.

This logical name transparency can be achieved as follows:

- The active server is dynamically configured on each failover with the cluster IP address. This is also called Virtual IP Address.
- An intermediate hardware or software unit that gets client IP packets and routes them to the active servers. In this case, the logical cluster name, which is the cluster IP address and host name, is hidden from the physical server in the cluster.

Preparing servers for Precise in active/passive configurations

To install Precise components in active/passive configurations, you first have to prepare the involved servers. As a prerequisite, the Precise installation must reside on a shared file system and be accessible from the active server.

When preparing a UNIX server, verify that a dedicated Precise UNIX user is created on both physical servers, with the correct Oracle UNIX user group. Preferably, both UNIX users should have the same password.

Post-installation tasks are mandatory.

To prepare servers for Precise in active/passive configurations

1. In the Precise Installer, in the New Server dialog box, use the logical server name only. Do not use the physical server name anywhere.
2. For a UNIX server, verify that a Precise installation folder is specified on a shared file system, such as /shared/i3.

3. Add the logical server once, regardless of the physical server at the time of installation.

Post-preparation tasks for servers in active/passive configurations

You need to perform additional tasks after you prepared the servers in Precise Agent Installer.

Edit the `<precise_root>/infra/host/hostname.txt` file and add the names of all servers in the configuration as new lines. For example:

```
SUN5_physical1
SUN5_physical2
SUN5_virtual
```

To perform post-preparation tasks on Windows only

1. Log in to the active server and open the Services window.
2. Change the Startup type of all Precise services to Manual.
3. Activate the passive server; then log in to it and run the following commands to create the Precise Listener service:

```
cd precise installation directory
infra\bin\psin_listener_java.exe -o install
infra\bin\psin_sentry.exe -o install
```

Post-installation tasks for the SQL Server Tier Collector in active/passive configurations

Installing the SQL Server Tier Collector in active/passive configurations requires post-installation tasks.

To perform post-installation tasks for SQL Server

1. Run the following command:
`products\sql-server\install\pssq_install`
2. Press **Enter** and then type the value of the instance name as it appears in the `products\sql-server` folder.
3. If Precise for Storage is installed for an SQL Server database:
 - a. Run the following command:
`products\sql-server\install\pssq_symmetrix_install`
 - b. Press **Enter** and then type SYMMETRIX.
4. Change the Startup type of each created service to **Manual**.

Post-installation tasks for the Sybase Tier Collector in active/passive configurations

Installing the Sybase Tier Collector in active/passive configurations requires post-installation tasks.

To perform post-installation tasks for Sybase

1. Run the following command:
`products\sybase\install\psy_install`
2. Press **Enter** and then type the value of the instance name as it appears in the `products\sybase` folder.
3. Change the Startup type of each created service to **Manual**.

Post-installation tasks for the Microsoft .NET Tier Collector in active/passive configurations

Installing the Microsoft .NET Tier Collector in active/passive configurations requires post-installation tasks.

To perform post-installation tasks for Microsoft .NET

1. Install at least one .NET instance on the active server via the Precise Installer.
2. On the passive server, perform the following actions:
 - a. Run the `products\dotnet\install\psdn_col_service_install.bat` command.
 - b. Run the `products\dotnet\install\psdn_injector.exe` command.
 - c. Run the `regsvr32 /s products\dotnet\bin\i4np.dll` command.
 - d. Run the `products\dotnet\install\psdn_gac_all.bat` command.
3. After performing these steps, you can continue to install more .NET instances on either server.

Post-installation tasks for Insight Savvies for OS and Network in active/passive configurations

Installing the Insight Savvies for OS and Network in active/passive configurations requires post-installation tasks.

To perform post-installation tasks for Insight Savvies for OS and Network

1. Log in to the passive server.
2. Change to the `<Precise_root>/products/insight` folder.
3. On Windows only, change to the `<Precise_root>/products/insight/host` folder and run the following command:


```
echo "<Precise_root>"|products\insight\install\i3_general.exe -install
```

 Do not type blanks between `<Precise_root>` and the `|` character.
4. Only if Insight Savvy for Network is installed:
 - a. Install the network driver on the passive physical server, as follows:

Windows

- i. Log in to the passive server.
- ii. Change to the following folder:


```
\products\insight\host\install
```
- iii. Run the `reinstall_network_cards.bat` script.

UNIX

- i. Log in to the passive server as root user.
- ii. Run the `network_rot.sh` script from the following folder: `.\products\insight\host\install`

5. Only if Insight Savvy for Network is installed:
 - a. Include the IP address of the physical servers in the FocalPoint registry file on the server where Precise FocalPoint is installed, as follows:
 - i. Open the following file:


```
<Precise_root>\products\i3fp\registry\products\insight\hosts\logical_server_name.xml
```
 - ii. Copy the existing physical server section to the `<ips>` section and change the IP address to the IP of the physical server.
For example, for a cluster whose active server IP address is 10.1.1.1 and whose passive server IP address is 10.1.1.2, this section would look as follows:

```
<ips>
<child_1>
  <ip>10.1.1.1</ip>
</child_1>
<child_2>
  <ip>10.1.1.2</ip>
</child_2>
</ips>
```


- iii. Sync the registry changes by running the following command on the FocalPoint where you've updated the registry files:

- **Windows**

```
infra\bin\psin_cli.bat -action update-main-registry -i3-user <user>
-i3-clear-password <password> -registry-path
/registry/products/insight/hosts/<server>
```
- **UNIX**

```
./infra/bin/psin_cli.sh -action update-main-registry -i3-user<user>
-i3-clear-password <password> -registry-path
/registry/products/insight/hosts/<server>
```

Post-installation tasks for Tuxedo Tier agents in active/passive configurations

Installing Tuxedo Tier agents in active/passive configurations requires manual post-installation tasks.

When trying to find the Tuxedo shared memory address to attach during initialization, the Insight Savvy for Tuxedo uses the physical server name. If the logical server name is used during the installation, this may cause connection issues. To prevent connection issues, you need to configure the shared memory address in the registry file by adding the `<tux_shmkey>` parameter. This parameter takes on the hexadecimal value of the shared memory address as defined in the Tuxedo configuration file. For example:

```
*RESOURCES
IPCKEY 100100
```

In this example, 100100 is the decimal string for the hexadecimal value 0x18704. The following is a complete Tuxedo configuration example from the Precise registry:

```
<simple>
<tux_dir>/vip/Tuxedo71/sun4</tux_dir>
<tux_version>71</tux_version>
<tux_config>/vip/Tuxedo71/sun4/samples/atmi/simpapp/
tuxconfig</tux_config>
<tux_uid>7101</tux_uid>
<tux_shmkey>0x18704</tux_shmkey>
<network>
  <ports>
    <child_1>
      <port>0</port>
    </child_1>
  </ports>
</network>
</simple>
```

To perform post-installation tasks for Tuxedo Tier agents

1. Log in to the passive server and change to the `<Precise_root>/products/insight` folder.
2. Configure the shared memory address in the registry file to prevent connection issues, as follows:
 - a. To prevent connection issues, configure the shared memory address in the registry file, as follows:
 - i. Open the `<Precise_root>\products\i3fp\registry\instances\tuxedo\logical server name\instance name.xml` file.
 - ii. Under `<instance_name>`, add the line:

```
<tux_shmkey>0xXXXXXX</tux_shmkey>
```
 - iii. Sync the registry changes by running the following command on the FocalPoint where you've updated the registry files:
 - **Windows**

```
infra\bin\psin_cli.bat -action update-main-registry -i3-user <user>
```

```
-i3-clear-password <password> -registry-path
/registry/instances/tuxedo/<server>/<instance>
```

- **UNIX**

```
./infra/bin/psin_cli.sh -action update-main-registry -i3-user <user>
-i3-clear-password <password> -registry-path
/registry/instances/tuxedo/<server>/<instance>
```

- On Windows only, change to the <Precise_root>/products/insight/host folder and run the following command:

```
echo<Precise_root> "<precise_root>"|..\install\i3_general.exe -install
Do not type blanks between <precise_root> and the | character.
```

Installing the Oracle Tier agents in active/passive configurations

Installing Oracle Tier agents in active/passive configurations requires the following preconditions:

- The monitored Oracle database is installed on both servers with the same instance ID.
- Both databases share the same Oracle data via a shared file system and shared disks.
- Oracle instances and servers are accessible using the logical name of the cluster.
- Because only one database is active at a time, the Precise for Oracle agents monitor only the active instance at any given moment.

Pre-installation and installation tasks are not required, but post-installation tasks are mandatory if the Insight Savvy for Oracle is installed.

Post-installation tasks for Oracle Tier agents in active/passive configurations

If you have installed the Insight Savvy for Oracle, you need to perform manual post-installation tasks.


To perform post-installation tasks for Oracle Tier agents

1. Log in to the passive server and change to the <precise_root>/products/insight folder.
2. On Windows only, change to the <Precise_root>/products/insight/host folder and run the following command:

```
echo "<Precise_root>"|..\install\i3_general.exe -install
Do not type blanks between <Precise_root> and the | character.
```

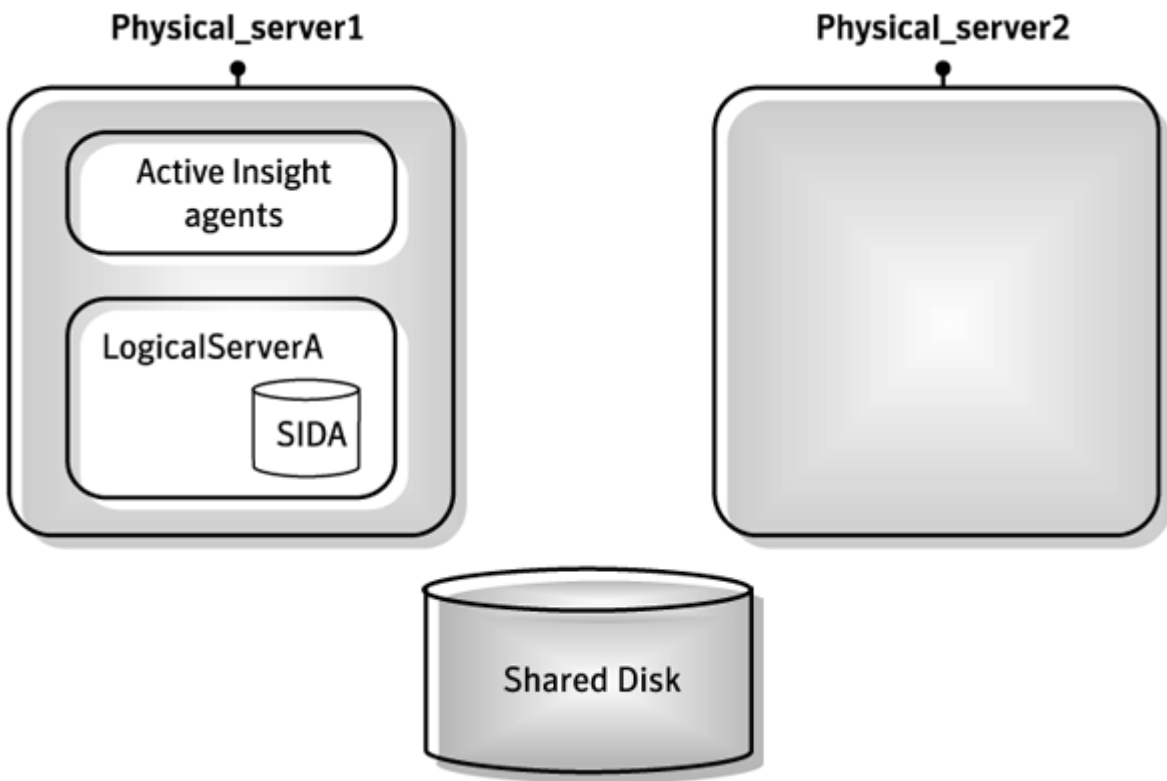
What happens in a failover situation (active/passive)

When the monitored application fails over to the standby server, all Precise agents must fail over, too. It is recommended that you add Precise shutdown and startup scripts to your automatic failover procedure. For more information, see [Generating Precise startup and shutdown scripts](#).

 AdminPoint shows the status for Precise agents that run on the active server. Precise agents on the standby server are not represented.

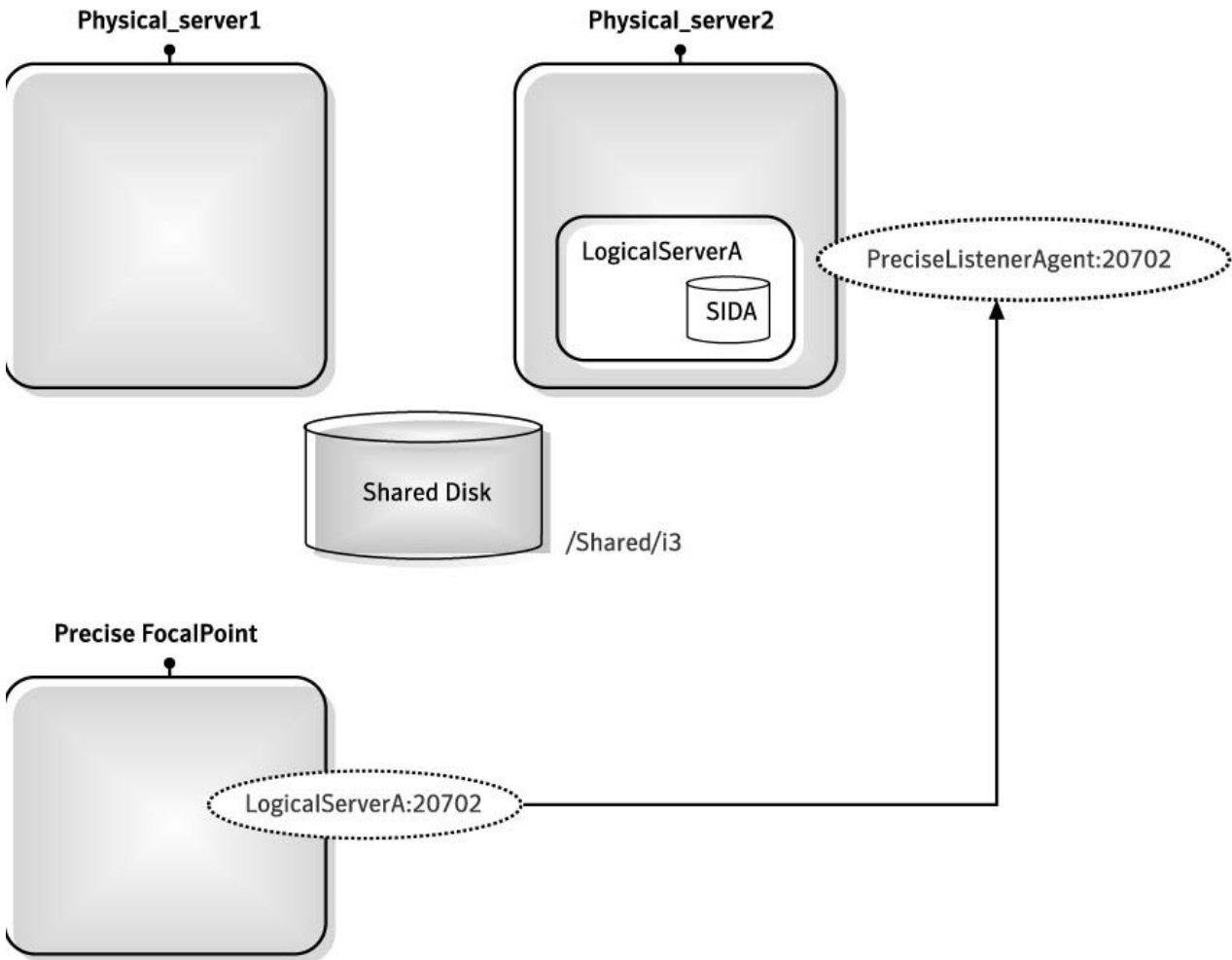
The following figure illustrates the live standby configuration before a failover.

Figure 1 Live standby configuration before a failover



The following figure illustrates the live standby configuration after a failover.

Figure 2 Live standby configuration after a failover



Failover tasks in active/passive configurations

If you added the Precise shutdown and startup scripts to your automatic failover procedure, you do not need to perform any tasks when a failover occurs. Otherwise, you need to perform the following task.

To perform failover tasks in active/passive configurations

1. Log in to the servers that failed (if still alive) and stop all Precise agents.
2. Start all Precise agents on the now active server.

i Upon failover, you must stop all services before starting them on the active server. Verify that you stop the sentry service first.

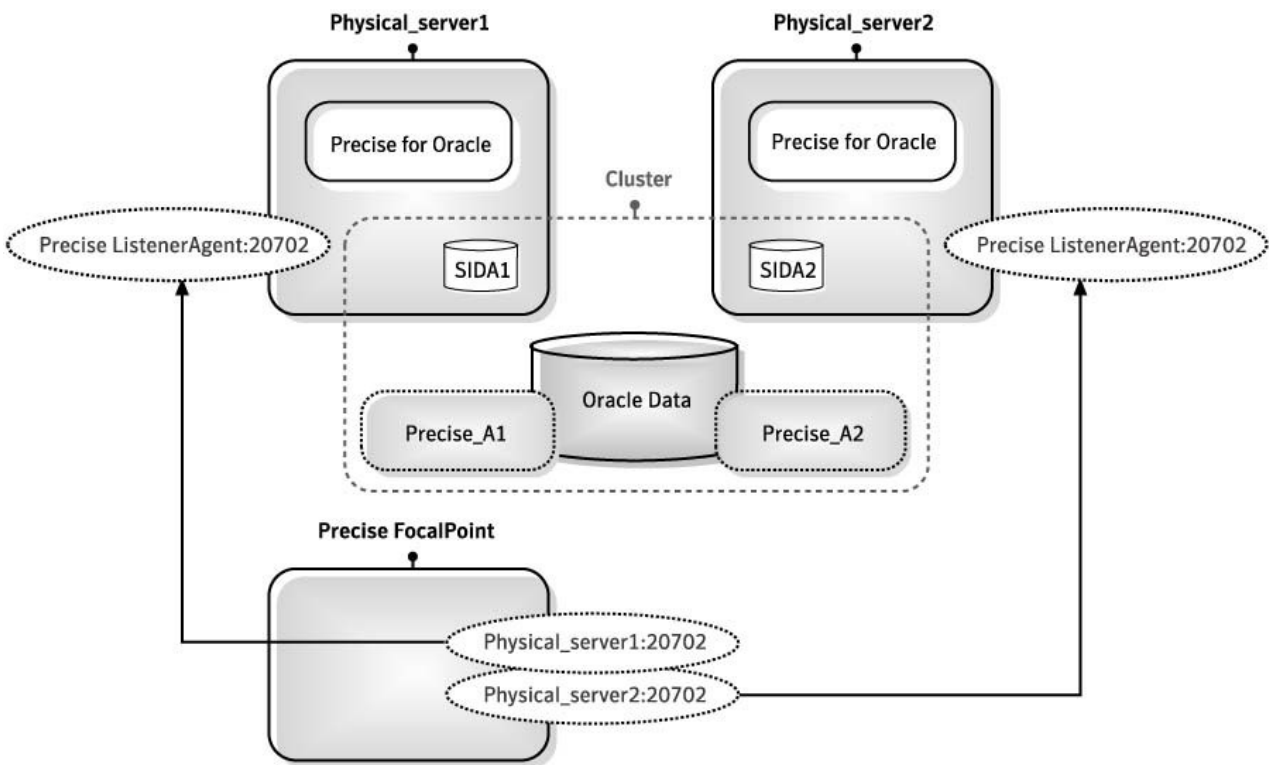
Installing parallel partitions configurations

In a parallel partitions cluster (such as Oracle RAC/OPS), an application can run concurrently on more than one server. The different instances either do not share anything or are designed for parallel access of shared resources.

As with other cluster configurations, clients connect to the application by a logical name, and load balancing software or hardware distributes the workload to the multiple servers.

In this configuration, Precise refers to each server - and each instance on this server - by its physical name. That is, each server is defined as a Precise server machine, and each monitored instance on each server is defined separately in Precise Agent Installer.

Figure 3 Parallel partitions configuration in an Oracle application



Preparing servers for Precise in parallel partitions configurations

To install Precise components in parallel partitions configurations, you first have to prepare the involved servers. Before you prepare the servers, verify that you can connect from the Precise FocalPoint server to the physical server by using its physical name and IP address.

To prepare servers for Precise in active/active configurations, in Precise Installer, in the New Server dialog box, use the physical server name.

Installing the Oracle Tier agents in parallel partitions configurations

Before installing Oracle Tier agents in parallel partitions configurations, verify that you can perform SQL connect from the physical server and from the PMDB FocalPoint server to each database node by using the physical name and the node name.

Generating Precise startup and shutdown scripts

You can add Precise startup and shutdown scripts to your automatic failover procedure by running a command:

- **Windows**

```
cd <Precise installation folder>
infra\bin\psin_infra.exe -handle-agents (stop|start)
```

- **UNIX**

```
cd <Precise installation folder>
nohup ./infra/bin/psin_infra -handle-agents (stop|start) &
```

Configuring Precise services for Precise for SQL Server failovers

When installing Precise for SQL Server in a cluster application, you can choose between the following cluster configurations:


- **Precise for SQL Servers as part of the cluster**

In this configuration, Precise for SQL Server is installed as one of the cluster applications. The cluster software is responsible for starting and stopping the processes in case of a failover situation so that the data gathered will remain available.

This configuration is suitable for active/passive applications.

- **Precise for SQL Server as a standalone application**


In this configuration, Precise for SQL Server is installed locally on each node of the cluster. In a failover situation, the data gathered will not be available.

 Only the Precise Collector on the active node will sample the instance. Other nodes will remain in recovery mode, until failover occurs.

- **Precise for SQL Server on remote servers (using the virtual instance name of the cluster)**

Precise for SQL Server is installed on a third server and sampling through the network. The product is not aware that this is a cluster application.

In a failover situation, the data gathered will be available.

 This configuration is only suitable for the cluster active/passive configuration.

The following procedures explain how to set up Precise for SQL Server as part of a cluster (option 1). In this option, you need to configure the following Precise services in Microsoft Cluster Manager so that they start automatically whenever a failover situation occurs:

- Precise for SQL Server Collector service (including an additional service if Precise for Storage is installed)
- Precise Listener service

Verify that you have already installed these services on each of the nodes in the cluster. See [Installing live standby configurations \(active/passive\)](#).

To add the Precise for SQL Server Collector service

1. Add a new resource called SQL Server to the SQL Server group.
2. In the New Resource dialog box, in the Name and Description text box, type:
Precise for SQL Server Collector <instance name>
3. From the drop-down lists, select the values as follows:
 - **Resource type.** Generic service
 - **Group.** SQL server <cluster_name>

Verify that the "Run this resource in a separate Resource Monitor" check box is clear.

4. In the Possible Owners dialog box, move all nodes on which Precise can run to the Possible owners table.
5. In the Modify Dependencies dialog box, move the resources Network Name and Physical Disk to the Resource dependencies table. These are the resources that the Precise for SQL Server Collector depends on.

6. In the Generic Service Parameters dialog box, in the Service name text box, type: `PssMSSql{instance-name}80 <Listener_unique_ID>`
This is the name of the Precise for SQL Server Collector service. You can see the name by opening the Services window in the Control Panel, right-clicking the service, and selecting **Properties** from the pop-up menu.
7. Click **Next**.
8. In the Registry Replication dialog box, click **Finish**.
9. In the Precise for SQL Server Collector Properties dialog box, on the Advanced tab, in the Restart area, clear the Affect the group check box.

To add the Precise SQL Server Storage Collector service (only if Precise for Storage is installed)

1. Add a new resource called SQL Server to the SQL Server group.
2. In the New Resource dialog box, in the Name and Description text boxes, type:
`Precise SQL Server Storage Collector <instance name>`
3. From the Resource type list, select **Generic Service**.
4. From the Group list, select **SQL Server <cluster_name>**.
5. In the Possible Owners dialog box, move all nodes on which Precise for SQL Server can run to the Possible owners table.
6. In the Modify Dependencies dialog box, move the resource SQL Server to the Resource dependencies table. This is the resource that the Storage Collector depends on.
7. In the Generic Service Parameters dialog box, in the Service name text box, type:
`PssMSSqlStorage{instance name}80 <Listener_unique_ID>`
This is the name of the Precise for SQL Server Storage Collector service. You can see the name by opening the Services window in the Control Panel, right-clicking the service, and selecting **Properties** from the pop-up menu.
8. In the Precise for SQL Server Storage Collector Properties dialog box, on the Advanced tab, in the Restart area, clear the Affect the group check box.

To add the Precise Listener service

1. Add a new resource called SQL Server to the SQL Server group.
2. In the New Resource dialog box, in the Name and Description text boxes, type:
`Precise Listener`
3. From the Resource type list, select **Generic Service**.
4. From the Group list, select **SQL Server <cluster_name>**.
5. In the Possible Owners dialog box, move all nodes on which Precise for SQL Server can run to the Possible owners table.
6. In the Modify Dependencies dialog box, move the resources Network Name and Physical Disk to the Resource dependencies table. These are the resources that the Precise Listener agent depends on.
7. In the Generic Service Parameters dialog box, in the Service name text box, type:
`psin_listener_v8.7`
This is the name of the Precise Listener service. You can see the name by opening the Services window in the Control Panel, right-clicking the service, and selecting **Properties** from the pop-up menu.
8. In the Precise Listener Properties dialog box, on the Advanced tab, in the Restart area, clear the Affect the group check box.

Configuring a secured Precise system

This section includes the following topics:

- [About secured Precise systems](#)
- [Installing new servers](#)
- [Configuring a secured Precise system](#)
- [Verifying Precise login credentials using an external password repository](#)
- [Running Precise services on Windows with a non-Administrative user](#)
- [Configuring the Single Sign On feature for Precise](#)
- [Configuring LDAP to authenticate Precise users](#)

About secured Precise systems

Precise systems can provide a high level of protection against external and internal intruders, restricting access to the sensitive information that Precise uses and monitors.

This information includes the following:

- Passwords used by Precise to access the monitored instances
- Data sent between the various Precise agents on the different servers
- Data sent between the Web-based Precise user interface client and the various Precise agents

Installing new servers

When installing a new server, a communication security key is transferred to the new server. To ensure secure transfer of the key, see [Securing communication key transfer to a new server](#).

Configuring a secured Precise system


Configuring a secured Precise systems involves setting file permissions and enabling Precise security mechanisms, such as the Advanced Encryption Standard (AES) and password encryption.

The communication encryption mechanism and the password encryption mechanism support Advanced Encryption Standard (AES) which is used by default. For higher security, it is recommended to use the Precise Web-based user interface client using the Secure Socket Layer (SSL) protocol.

In general, it is recommended to update all the mechanism encryption keys (including SSL) every so often.

Setting file permissions

Verify that only the Precise users and group have access to files under the Precise root folder. You can change the entire files permissions to have 770 permissions.

 Some monitored instances also require access to the file, so the Precise user should be part of these monitored instances user groups as well.

To set file permissions on Windows

- Verify that the Precise installation folder is not shared and grants access to required users only.

About configuring AES communication

By default, Precise communicates using a symmetric key encryption algorithm called Advanced Encryption Standard (AES).

Replacing the encryption key on the Precise FocalPoint server

To replace the communication AES key

1. Log in to the Main Precise FocalPoint.
2. Run the following command from the `<Precise_root>` folder:
 - **Windows**


```
infra\bin\psin_cli.bat
-i3-user<user_name>
{-i3-encrypted-password<encrypted_password>|-i3-clear-password<clear_password>}
-action communication-key-change
-type aes
```
 - **UNIX**

```
./infra/bin/psin_cli.sh
-i3-user<user_name>
{-i3-encrypted-password<encrypted_password>|-i3-clear-password<clear_password>}
-action communication-key-change
-type aes
```

Distributing the new encryption settings to all servers

For the new encryption settings to take effect, you must distribute them to all servers, completing no later than 24 hours after you changed the encryption configuration on the Precise FocalPoint server.

The new encryption settings will be effective within 48 hours. If a server does not receive the new settings within 48 hours, it is no longer able to communicate with the Precise system. In this case, you need to perform an additional step to reestablish the communication.

 At the exact moment of key replacement, communication errors may occur in some of the active communication connections. You may encounter these errors in the user interface or in the log files. If they do not persist, ignore them.

To distribute the new encryption settings to all servers

1. Run the following command from the `<Precise_root>` folder on the Main Precise FocalPoint server:
 - **Windows**

```
infra\bin\psin_cli.bat
-i3-user<user_name>
{-i3-encrypted-password<encrypted_password>|-i3-clear-password<clear_password>}
-action communication-key-distribute
{-servers "<comma_separated_servers_list>" | -all-servers true}
[-manual true]
[-secure true -user-name<user_name>-password<password>]
[-user-name<user_name>]
[-password<password>]
```
 - **UNIX**

```
./infra/bin/psin_cli.sh
-i3-user<user_name>
{-i3-encrypted-password<encrypted_password>|-i3-clear-password<clear_password>}
```

```
-action communication-key-distribute
{-servers "<comma_separated_servers_list>" | -all-servers true}
[-manual true]
[-secure true -user-name<user_name>-password<password>]
[-user-name<user_name>]
[-password<password>]
```

Specify one: `-servers` and a comma separated list of specific servers to distribute the key to, or `-all-servers true` to distribute the key to all installed servers.

To use the secured mode transfer of the key, you need to specify `-secure true`, and supply the user name and password to use in SSH to connect to the servers.

Alternatively, specify `-secure true` and `-manual true` to use the manual mode to send the secured mode transfer of key. Note that this manual mode requires you to run the script manually on the related servers.


If you selected automatic distribution to servers, only servers with SSH or SCP protocols are supported.

2. If a server does not receive the new settings within 48 hours, do the following:
 - a. Copy all files from the `<precise_root>/infra/listener/etc/crypt` folder on the Precise FocalPoint server to the server that did not receive the new settings.
 - b. Restart all agents on that server.

Verifying encryption configuration on a server (optional)

You can verify that the encryption configuration has been updated on all servers. This procedure scans all of your Precise servers and checks if the server were successfully updated with the new encryption.

If one of the server reports an error, you need to redistribute the encryption settings. If you still encounter an error after redistributing the settings, contact Precise Customer Support.

 Run the verify command at least 48 hours after creating the new AES key. This will ensure that the protocol is secured with the new key.

See [Distributing the new encryption settings to all servers](#).

If the new encryption settings were successfully received on all servers, the scan results in an output like the following:

```
Server (aix1) ok
Server (aix2) ok
Server (aix3) ok
server scan done
```

If errors occurred on at least one of the servers, the scan results in an output like the following:

```
Server (aix1) ok
error on server (aix 2), see log file for details.
Server (aix3) ok
servers scan done
```

The encryption log is written to the following trace file:

```
<Precise_root>/logs/infra.i3fp.crypt.log
```

To verify encryption configuration on all servers

1. Run the following command from the `<Precise_root>` folder on the Main Precise FocalPoint server:
 - **Windows**

```
infra\bin\psin_cli.bat
-i3-user<user_name>
```

```
{-i3-encrypted-password<encrypted_password>|-i3-clear-password<clear_password>}
-action communication-key-verify
{-servers "<comma_separated_servers_list>" | -all-servers true}
```

- **UNIX**

```
./infra/bin/psin_cli.sh
-i3-user<user_name>
{-i3-encrypted-password<encrypted_password>|-i3-clear-password<clear_password>}
-action communication-key-verify
{-servers "<comma_separated_servers_list>" | -all-servers true}
```

Specify one: `-servers` and a comma separated list of specific servers to distribute the key to, or `-all-servers true` to distribute the key to all installed servers.

About encrypting passwords

Precise uses an Advanced Encryption Standard (AES) to encrypt the passwords that its different components require to access the monitored instances (such as passwords for databases or Java application servers). These passwords are then saved in internal configuration files.

By default the password encryption is AES.

Replacing the password encryption key on the Precise FocalPoint server

You can replace the password encryption key on the Precise FocalPoint server by using the Precise Command Line Interface (CLI) installation utility. For information on how to deploy this utility, see the [Precise CLI Utility Reference Guide](#).

To replace the password encryption key on the Precise FocalPoint server

1. Verify that the CLI installation utility is deployed.
2. Run the following command from the `<Precise_root>` folder on the Precise FocalPoint server:

- **Windows**

```
infra\bin\psin_cli.bat
-i3-user<user_name>
{-i3-password encrypted-password
| -i3-clear-password clear-password}
-action encrypt-update
-type [aes-key]
```

- **UNIX**

```
./infra/bin/psin_cli.sh
-i3-user user-name

{-i3-password encrypted-password
| -i3-clear-password clear-password}
-action encrypt-update
-type [aes-key]
```

Table 1 Configuring password encryption type elements on the Precise FocalPoint server

Element	Description
<code>-i3-user</code>	See Authenticate to CLI Utility .
<code>-i3-encrypted-password</code>	See Authenticate to CLI Utility .

Element	Description
-action	Always: encrypt-update Mandatory: Yes
-type	Always: aes-key Mandatory: Yes AES-based encryption that uses a random symmetric key. It is recommended to update this key once a year. Security level: high

For example:

```
./infra/bin/psin_cli.sh
-i3-user user-name

{-i3-password encrypted-password
| -i3-clear-password clear-password}
-action encrypt-update
-type aes-key
```

Distributing the new password encryption settings to all servers

For the new password encryption settings to take effect, you must distribute them to all servers by using the Precise CLI installation utility. This procedure depends on the Precise Listener being up and running on all servers; otherwise, the agents on the servers will not be able to function.

To distribute the new encryption settings to all servers

1. In AdminPoint, verify that the Precise Listener is up and running on all servers.
2. Run the following command from the <Precise_root> folder on the Precise FocalPoint server:

- **Windows**

```
infra\bin\psin_cli.bat
-i3-user user-name

{-i3-password encrypted-password
| -i3-clear-password clear-password}
-action encrypt-distribute
```

- **UNIX**

```
./infra/bin/psin_cli.sh
-i3-user user-name

{-i3-password encrypted-password
| -i3-clear-password clear-password}
-action encrypt-distribute
```

Table 2 Distributing new password encryption element settings to all servers

Element	Description
-i3-user	See Authenticate to CLI Utility .

Element	Description
-i3-encrypted-password	See Authenticate to CLI Utility .
-action	Always: encrypt-distribute Mandatory: Yes

Configuring the Precise Apache Tomcat to work in HTTPS mode (SSL)


The Precise user interface is based on an Apache Tomcat server. You can configure it to work in HTTPS mode. This mode uses the Secure Socket Layer (SSL) protocol to encrypt the data that is sent from the Web browser to the Tomcat server.

To configure Precise Apache Tomcat to work in HTTPS mode

1. Create a certificate keystore on the Apache Tomcat server. This file is saved in the folder `<Precise_root>\products\gui\website` as a certificate .keystore file.
 - a. Before you create the .keystore file, delete the alias Tomcat if it already exists. To delete the alias Tomcat, run the following command from the `<Precise_root>` folder on the Precise FocalPoint:

- **Windows**

```
java\JRE\bin\keytool -delete -alias tomcat -keystore
products\gui\website\.keystore
```

 For the password, use "changeit." For the question "What is your first and last name," provide the server name used in the URL for the Precise GUI as the answer.

- **UNIX**

```
java/JRE/bin/keytool -delete -alias tomcat -keystore products/gui/
website/.keystore
```


- b. To create your own certificate, run the following command from the `<Precise_root>` folder on the Precise FocalPoint:

- **Windows**

```
java\JRE\bin\keytool -genkey -alias tomcat -keyalg RSA -keystore
products\gui\website\.keystore -validity 3000
```

- **UNIX**

```
java/JRE/bin/keytool -genkey -alias tomcat -keyalg RSA -keystore products/gui/
website/.keystore -validity 3000
```

 For the password, use "changeit." Also, use the host as displayed in the url for the name.

2. In the file `<Precise_root>\products\gui\website\conf\server.xml`
 - a. Add comment tags around the non-SSL `<Connector>` tag, where the preliminary remark is "`<!-- Define a non-SSL HTTP/1.1 ...-->`."
 - b. Remove the comment tags around the SSL `<Connector>` tag, where the preliminary remark is "`<!-- Define a SSL Coyote HTTP/1.1 ...-->`."
3. Restart the Precise FocalPoint process on the UNIX server. Restart the Precise FocalPoint service and the Precise user interface service on the Windows server.
4. Open the Precise application using HTTPS.
For example:
`https://<host>:<port>`

i After restarting the Precise FocalPoint, the SSL port changes to the default port added by the user during installation. If you want to use a different port, you can change the port as described in the Change GUI server port section in the [Precise CLI Utility](#).

When first launching Precise in a client, a security alert is displayed with the certificate details. You should sign your certificate with a trusted root authority (such as VeriSign). Alternatively you can install the certificate on each client server that uses the Precise GUI.

5. In AdminPoint, click the Setup tab and click on **Nodes** in the drop-down menu
6. In the Nodes tab, click **Edit** to update the URL of the node for which you configured the SSL, according to step 4. In addition, if you are working with the Precise Custom Portal, the following configuration must be performed.

To configure Precise Apache Tomcat to work in HTTPS mode with the Precise Custom Portal

1. Export the certificate:

```
<i>java\jre\bin\keytool -export -alias tomcat -file <file_name>.crt
-keystore <i>products\gui\website\.keystore
```
2. Import the certificate:

```
<i>java\jre\bin\keytool -import -file <file_name>.crt -alias tomcat
-storepass <changeit> -keystore <i>\java\JRE\lib\security\cacerts
```

i Verify that the same `<file_name>.crt` is used for exporting and importing the certificate.

i For the password, use "changeit."

To install a certificate

1. When you get the certificate warning, click **View certificate**.
2. Click **Install certificate**.
3. Click **Next**.
4. Select **Place all certificates in the following store**.
5. Click **Browse**.
6. Check **Show physical store**.
7. Select **Local Computer** under Trusted root certification Authorities.
8. Click **OK, Next**, and then **Finish**.
9. Close and restart the Precise GUI, and verify that the warning for the certificate does not re-appear.

For general information regarding configuring HTTPS mode, see Apache Tomcat server instructions found at this site: <http://tomcat.apache.org/tomcat-4.1-doc/ssl-howto.html>

For information regarding configuring J2EE to work in HTTPS mode, see the [Precise for J2EE User Guide](#).

Changing the session timeout for an Apache Tomcat server

For an Apache Tomcat server, you can configure the Tomcat session timeout.

To change the session timeout for an Apache Tomcat server


1. Open the following file in a text editor:

```
<Precise_root>\products\gui\website\webapps\i3\web.xml
```
2. Change the default session timeout (180) to the required minutes. For example:

```
<session-config>
  <session-timeout>180</session-timeout>
</session-config>
```

- Restart the Precise FocalPoint server.

Verifying Precise login credentials using an external password repository

 Configuring the Precise login mechanism is not required to secure a Precise system.

Precise FocalPoint confirms the Precise authentication credentials by using the Java Authentication and Authorization Service (JAAS). The JAAS runs a login module that authenticates the password according to an internal Precise roles' table.

Because the JAAS is a common Application Programming Interface (API), you can also configure it to run a custom login module that authenticates a role's password against an external, centralized password repository. To do so, you must first define the respective role in AdminPoint. For more information on managing roles in AdminPoint, see the [Precise Administration Guide](#).

The login module is a Java class that implements the login module interface of the JAAS API. This API exists for the Java Runtime Application (JRE) version 1.4.2 and later. It is part of the `javax.security.auth.*` package.

When your own login module is ready for use, configuring the external password authentication involves the following tasks:

- Updating the Precise configuration to work with the new login module
- Adding the class of the new login module to the Precise CLASSPATH

To update the Precise configuration

- Log in to the Precise FocalPoint.
- Back up the following file:
`<Precise_root>/products/i3fp/login/jaas.config`
- In the original file, do the following:
 - Change the line.** `StartPoint{com.precise.infra.login.InfraDbLdapSupportLoginModule required};;`
 - To.** `StartPoint{new login module class required};;`
where new login module class is the class name of your custom login module.
- Save and close the file.

To add the new login module class to the Precise classpath


- Log in to the Precise FocalPoint.
- Back up the following file:
`<Precise_root>/products/i3fp/bin/psin_i3fp_init.xml`
- In the original file, append the path of the class of the new login module to the classpath section.
- Save and close the file.
- Restart Precise FocalPoint.

Running Precise services on Windows with a non-Administrative user

After you have finished installing all Precise components on a server, you may remove the user (used by the Precise services) from the Administrators group and either assigns it to the Power Users" group or Users group. In both cases the user should be set to have Login as service authorization. If the user is set to the Users group, you also need to grant access permissions to authenticated users for each Precise service on the machine. To do this, use the SC.exe utility from the Microsoft Resource Kit.

For example:

```
E:\Program Files\Resource Kit\sc.exe sdset psin_sentry_8.7
D:(A;;CCLCSWRPWPDTLOCRRC;;;SY)(A;;CCDCLCSWRPWPDTLOCRSDRCWDWO;;;BA)
(A;;CCLCSWRPWPDTLOCRRC;;;AU)(A;;CCLCSWRPWPDTLOCRRC;;;PU)
E:\Program Files\Resource Kit\sc.exe sdset psin_i3fp_8.7
D:(A;;CCLCSWRPWPDTLOCRRC;;;SY)(A;;CCDCLCSWRPWPDTLOCRSDRCWDWO;;;BA)
(A;;CCLCSWRPWPDTLOCRRC;;;AU)(A;;CCLCSWRPWPDTLOCRRC;;;PU)
E:\Program Files\Resource Kit\sc.exe sdset psin_gui_8.7
D:(A;;CCLCSWRPWPDTLOCRRC;;;SY)(A;;CCDCLCSWRPWPDTLOCRSDRCWDWO;;;BA)
(A;;CCLCSWRPWPDTLOCRRC;;;AU)(A;;CCLCSWRPWPDTLOCRRC;;;PU)
```

 This is only an example. Do not copy and paste it in your application. The commands may be different in different Windows versions. The general idea is to use `sdshow` to show the service permissions and then to use `sdset` to copy the Power User group permissions (represented as PU) to the Authenticated Users group permissions (represented as AU). For more details, see the `sc.exe` help file in the Microsoft Resource Kit.

Configuring the Single Sign On feature for Precise

Support of the Single Sign On feature means adding the capability to Precise to be an integrated part of an enterprise application. It also allows the enterprise application users to log in to their systems only once, remembering the credentials and authorization used by the user, and then removing the need to log in again to each of the enterprise systems.

The prerequisites, installation, and configuration of this feature is described in the following sections:


- [About prerequisites](#)
- [Configuring the Apache Web server](#)
- [Installing the SiteMinder Web agent](#)
- [Configuring the SiteMinder Policy server](#)
- [Changing the Precise configuration](#)
- [Disabling the Precise integration with SiteMinder](#)

About prerequisites

Before you configure the Single Sign On feature it is best to define at least one user in Precise who also appears in the SiteMinder folder. This is important for security reasons.

To configure Precise and to enable it to operate using a Single Sign On feature, install and configure the following products:

- Apache Web server version 2.2.3 or higher
- SiteMinder Web agent version 6.00 Hotfix 05.03 or higher*

 Precise does not sell or provide CA SiteMinder®. This product should be acquired from Computer Associates.

- Precise version 8.2 and up.
- *At the moment of creation of this text, the Web agent for the following platforms could be downloaded:
- Web-Agent 6QMR5 CR002 certified with ASF Apache 2.2.3 Web server on the SPARC based Solaris 8/9/10 platforms.
 - Web-Agent 6QMR5 CR002 certified with ASF Apache 2.2.3 Web server on the RHAS 3.0 platform.
 - Web-Agent 6QMR5 CR002 certified with ASF Apache 2.2.3 Web server on the RHAS 4.0 platform.
 - Web-Agent 6QMR5 CR002 certified with ASF Apache 2.2.3 Web server on the Windows 2000 SP4 platform.

- Web-Agent 6QMR5 CR002 certified with ASF Apache 2.2.3 Web server on the Windows 2003 SP1 and Windows 2003 R2 platforms.
- Web-Agent 6QMR5 CR002 certified with ASF Apache 2.2.3 Web server on the AIX 5.2 and AIX 5.3 platforms.

Configuring the Apache Web server

The Precise Single Sign On feature works with Apache Web server v2.2.3 or higher. The Apache Web server should be configured to work as a reverse proxy server, which is installed using the Tomcat port of Precise.

To configure the Apache Web server for Windows

1. Open the `\conf\httpd.conf` file in the Apache installation folder.
2. Change the line with the Listen and port number to the GUI port of Precise (The port that the Precise Tomcat Web server listens to, in this example 20760). The information will become: Listen 20760
3. Change the line with the *ServerName* and port number (in this example 20760) to the required server and GUI port.
`ServerName GUI-TEST-INST.precise.com:20760`
4. Look for the following three lines with the proxy modules and remove the pound/hash marks (# sign) from them:
`LoadModule proxy_module modules/mod_proxy.so`
`LoadModule proxy_connect_module modules/mod_proxy_connect.so`
`LoadModule proxy_http_module modules/mod_proxy_http.so`
5. Change the port the Precise Tomcat Web server will listen to, for example to 20761 by adding the following entries at the end of the file, where the new port of the Tomcat is used (In this case 20761, see the following section about this port):
`<Proxy *>`
 Order deny,allow
 Allow from all
`</Proxy> ProxyRequests Off ProxyPreserveHost On`
`ProxyPass / http://gui-test-inst.precise.com:20761/`
`ProxyPassReverse / http://gui-test-inst.precise.com:20761/`
Verify that `http://gui-test-inst.precise.com:20761` is replaced with the fully qualified domain name and port of your Precise installation.
6. Open the `<Precise_root>/infra/setup.xml` file and edit the `<tomcat-port>` tag.
7. Change the port of the Precise Tomcat Web server to a port that is not open to the outside world, or is behind a firewall, to prevent direct access to it. In this example, the Tomcat port will be 20761.
8. Restart first the Tomcat service and then the Apache service.

The restart order is important because the Tomcat server has to release the port that the Apache server is configured to listen to.

To configure the Apache Web server for Linux

1. Change the port of the Precise Tomcat Web server to a port that is not open to the outside world, or is behind a firewall, to prevent direct access to it. In this example, the Tomcat port will be 20761. Remember to make the change in the Precise setup.xml file
2. Enable the `mod_proxy` feature in the Apache Web server. For example, on a Debian server it is done by symlinking some files:
`symsrv:/etc/apache2/mods-enabled# ls`
`cgid.conf cgid.load userdir.conf userdir.load`
`symsrv:/etc/apache2/mods-enabled# ln -s ../mods-available/proxy.* . symsrv:/etc/apache2/mods-enabled# ln -s`
`../mods-available/proxy_http.* .`
`symsrv:/etc/apache2/mods-enabled# ls`
`cgid.conf cgid.load proxy.conf proxy.load proxy_http.conf proxy_http.load userdir.conf userdir.load`

3. Configure the mod_proxy feature by creating a configuration file snippet, conf.d/symi3, as described in the following code:

```

symsrv:/etc/apache2/mods-enabled# cd ../conf.d
symsrv:/etc/apache2/conf.d# cat > symi3
<Proxy *>
    Order deny,allow
    Allow from all
</Proxy>
ProxyRequests Off
ProxyPreserveHost On
ProxyPass / http://gui-test-inst.precise.com:20761/ ProxyPassReverse / http://gui-test-inst.precise.com:
20761/
teacup:/etc/apache2/conf.d#

```

Verify that http://gui-test-inst.precise.com:20761 is replaced with the fully qualified domain name and port of your Precise installation.

Installing the SiteMinder Web agent

For installing the SiteMinder Web agent you need to have SiteMinder installed on your application and a user name and password for access to the SiteMinder support site to download the SiteMinder Web agent.

To install the SiteMinder Web agent

1. Before downloading and installing the SiteMinder Web agent, perform the steps described in the procedure, [To make changes on the System tab in Configuring the SiteMinder Policy server](#).
2. Download and install the latest SiteMinder Web agent for Apache Web servers. Verify that the version you download supports the Apache Web server version that we support – in this case, version 2.2.3 and that you download the file for the platform on which your Apache Web server is installed.
 - a. Download the agent from <https://support.netegrity.com>.
 - b. Insert your user name and password.
 - c. Select **Tools** in the left pane.
 - d. Choose **Download Manager**.
 - e. Select **SiteMinder Web Agent** in the Download a product drop-down menu.
 - f. Choose **SiteMinder 6.x QMR's**.
 - g. Choose the agent to be downloaded.
3. After installing the SiteMinder Web agent, configure it according to the SiteMinder's *Web agent Installation and Configuration guide*.
4. Open the WebAgent.conf file in the \Program Files\Apache Software Foundation\Apache2.2\conf folder, and then set EnableWebAgent="YES".
5. Add the Apache Web server as a protected resource to the SiteMinder's protected resources.
6. Restart the machine after you have installed the Web Agent.

Configuring the SiteMinder Policy server

The SiteMinder Policy server is used to configure the policy server to protect Precise.

To configure the Policy server

1. Log in to the Policy server management application.
2. Define the protection on the Precise application by performing steps on two of the three main tabs (System, Domains, Global Policies) on the main window of the Policy server management application as described in separate procedures.

To make changes on the System tab

1. Define a new Web agent under the Agents item.
2. Define a new Host Configuration Object under the Host Conf Objects item.
3. Duplicate the DefaultHostSettings object, give it a name, and replace the complete <IPAddress> with the Policy Server IP address.
4. Define a new Agent Configuration Object under the Agent Conf Objects item.
5. Duplicate the ApacheDefaultSettings configuration object, give it a name, and configure the following items so that they have the values as described in the table:
 - **PersistentCookies.** Yes
 - **IgnoreExt.** Add the following extensions: .xml and .css
 - **ForceFQHost.** Yes
 - **DefaultAgentName.** Verify that this contains the name of the new Web agent defined in the Agents item.
 - **AgentName.** Verify that this contains the name of the new Web agent defined in the Agents item.
 - **CookieDomain.** Add the domain the agent is working in. For example: .precise.com

To make changes on the Domains tab

1. In the domain tab, add a domain and give it a name, such as precise.
2. Add the user directories to the related Precise domain. See the SiteMinder documentation for further instructions.
3. Under the Precise domain, add a realm and give it a name, such as precise-Realm. This realm will protect Precise.
4. Configure the Precise-Realm in the realms subfolder.
5. Under the Precise-Realm, create a rule and give it a name, such as Precise-rule.
6. Add a new response under the Precise/Responses entry.
7. Add a new policy under the Precise/Policies entry:

To configure the Precise-Realm

1. Open the Realms subfolder by clicking the + icon next to the Realms folder under the Precise domain
2. Double click the Precise-Realm folder.
3. On the Resource tab, verify that the following items have the following values:
 - **Agent.** Add the Web agent that is installed on the Precise Web server.
 - **Resource filter.** /i3/Login
 - **Authentication scheme.** Basic authentication
 - **Default resource protection.** Protected
4. On the Session tab, verify that the following items have the following values:
 - **Maximum Time Out Enabled.** Check 2 hours, 0 minutes Idle.
 - **Time Out Enabled.** Check 2 hours, 0 minutes.
 - **Persistent Session.** Choose No Persistent Session.
 - **Synchronous Auditing.** Should be unchecked.
5. On the Advanced tab, perform the following steps:
 - a. Configure the Directory Mapping to the location of the user folder.
 - b. Select the Process Authentication Events checkbox.
 - c. Select the Process Authorization Events checkbox.
6. Click **Apply**, and the click **OK**.

To create and name a rule under the Precise-Realm

1. Right-click in the tree on the Precise-Realm and choose **Create Rule** under Realm.
2. In the Rules Properties dialog box provide a name for the rule, such as Precise-Rule.
3. Clear the Perform Regular Expression checkbox.
4. Under the Action group, select the Web Agent actions and Get and Post.
5. Under the Allow/Deny and Enable/Disable group, select the Allow Access radio button.
6. Under the Allow/Deny and Enable/Disable group, select the Enabled checkbox.

To add a new response under the Precise/Responses entry

1. Give a name to the response, such as Precise-response.
2. Select SiteMinder's Web agent response type option.
3. Click **Create** and create the response attribute.
4. Select the User Attribute radio button.
5. Create a cookie called Precise-SiteMinderUser. That returns the FullName if it is the NT domain name. If you are working with a different folder, choose the property in the folder that holds the user name. This user name should be defined also in the Precise application in the Precise AdminPoint.
6. Select the Recalculate value every xx seconds checkbox and give it a value of 15.

To add a new policy under the Precise/Policies entry

1. Give a name to the policy, such as Precise-policy.
2. Verify that the policy is enabled.
3. In the Rules tab, insert the Precise-rule and the Precise-response with the values you set in the previous procedures.
4. In the Users tab, define the relevant users.

Changing the Precise configuration

The Precise configuration needs to be changed to connect it to SiteMinder and activate the Single Sign On feature. To connect SiteMinder and activate the Single Sign On feature to Precise.

1. Edit the SiteMinder.htm file located in:
`<Precise_root>\products\gui\website\webapps\i3\Login`
2. Set the bSiteMinderActive variable to True (bSiteMinderActive = true;).
3. Save the file.
4. Edit the products\i3fp\login\jaas.config file so that its content looks like:
`StartPoint{com.precise.infra.login.SiteMinderLoginModule required};`
5. Stop and then restart the Precise FocalPoint.

Disabling the Precise integration with SiteMinder

To disable the integration between SiteMinder and Precise, two procedures need to be performed: one to roll back the Precise configuration changes and one to roll back the Apache Web agent configuration changes.

To roll back the Precise configuration changes

1. Edit the siteMinder.htm file located in:
`<Precise_root>\products\gui\website\webapps\i3\Login`
2. Set the bSiteMinderActive variable to False (bSiteMinderActive = false;).
3. Edit the products\i3fp\login\jaas.config file so that its content looks like:
`StartPoint{com.precise.infra.login.InfraDbLoginModule required};`
4. Stop and then restart the Precise FocalPoint.

To rollback the SiteMinder configuration changes

1. Shut down the Web Agent installed on Precise Web server machine. For more information on how to shut down the Web agent, see the SiteMinder documentation.
2. In the Apache installation folder, open the WebAgent.conf file which is located in:
 - **Windows.** \Program Files\Apache Software Foundation\Apache2.2\conf
 - **Linux.**
`web_server_home/conf`
 where `web_server_home` is the location of the installed Web server.
3. Change EnableWebAgent to No (EnableWebAgent="NO").

4. Restart the Apache service.

Configuring LDAP to authenticate Precise users

Precise can integrate with Lightweight Directory Access Protocol (LDAP). LDAP is a better option than JAAS. The following section describes how to configure LDAP.


Best practices for LDAP configuration

Once integrated with LDAP, Precise gets all users and groups from the LDAP and synchronizes them into its own database. Login passwords are authorized by LDAP, thus preventing the need to keep (and verify) the users' passwords within Precise.

LDAP provides access for management and browser applications that provide read/write interactive access to the X500 folder. Setting up an LDAP configuration will reduce Users/Roles management in Precise; it also uses the already managed LDAP repository for Precise.

Pay close attention to your organizational structure in the LDAP repository before setting up the LDAP configuration for Precise. You must understand the current LDAP structure to determine the data needed from existing LDAP repository entities for Precise.

Map a set of users and roles to a Precise domain. While synchronizing the LDAP data to Precise, the relevant users/roles will be identified by the given domain. For login, the domain name will be the user.

 It is preferable to set the domain name as the enterprise domain, and the Users/Roles root as the relevant LDAP branch which contains the domain users.

Setting up the Precise system to work with LDAP blocks all user/role management operations in the Precise system, except for permissions management. The LDAP synchronization process deletes all Precise users and roles from the Precise system which are not also found in the LDAP repository, except for user "admin" and role "Precise manager."

Map a set of users and roles to the Precise domain. After synchronizing the LDAP data to the Precise system, the domain will identify relevant users or roles. The domain name will be user-defined for login purposes. Set the domain name as the enterprise domain, and the users/roles root as the relevant LDAP branch that holds domain users.

To enable synchronization of Users and Roles from the LDAP repository into the Precise database, configure the LDAP as described below.

To configure LDAP

1. Update the ldap file (as specified below) in the main Precise FocalPoint machine under:
`<precise_root>\products\i3fp\registry\products\infrastructure\login\ldap.xml`
2. Delete the ldap.xml.status file (in the same folder as ldap.xml)
3. Update the roles file in the main Precise FocalPoint server under:
`<precise_root>\products\i3fp\registry\products\infrastructure\roles\settings.xml` by updating ignore-last-role-on-delete to true:
`<ignore-last-role-on-delete>true</ignore-last-role-on-delete>`
4. Delete the settings.xml.status file (in the same folder as settings.xml)
5. Restart the Precise FocalPoint.

Connection details

Enter the following connection information:

- <host> to specify the host name/IP of the LDAP repository server
- <port> to specify the port on which the LDAP repository server is listening on
- <bind-user> to specify the LDAP user name for binding in the synchronization process
- <bind-password> to specify the password of the bind user

i The <bind-password> will be supplied encrypted. Use the "encrypt" CLI action to encrypt. If <use-ldap-authentication> is "false," the password setting must be an encrypted empty string. For more details on how to encrypt a password, see the [Precise CLI Utility Reference Guide](#).

Mapping information

The domain element holds information for the domains that are required to synchronize. You can specify one or more domain elements. Enter the following mapping information:

- <domain-name> A unique name for the domain, to be concatenated to the imported users or roles name. The user name of such user is: domain-name\user-name.
- <root-group> To specify an LDAP group DN. The import process will take all members (users and groups) of this group. (Use this when <domain-root-method> is 'single'.)
- <users-root> To specify an LDAP object DN. The import process will take all users under this object. (Use this when <domain-root-method> is 'multiple'.)
- <groups-root> To specify an LDAP object DN. The import process will take all groups under this object. (Use this when <domain-root-method> is 'multiple'.)

i The names <root-group>, <users-root>, and <groups-root> may have multiple entries under each domain entry.

General information

Enter the following general information:

- <user-object-class> Indicates the object class name in the LDAP for the user entity.
- <group-object-class> Indicates the object class name in LDAP for the group entity.
- <user-name-attribute> Indicates the attribute name in the LDAP for the user name.
- <group-name-attribute> Indicates the attribute name in the LDAP for the group name.
- <user-dn-attribute> Indicates the attribute name in the LDAP for the user entity DN.
- <user-login-attribute> Indicates the attribute name in the LDAP for the user login ID.
- <group-members-attribute> Indicates the attribute name in the LDAP for the group members list.
- <max-users> Indicates the maximum number of users allowed to import into Precise.
- <max-groups> Indicates the maximum number of groups allowed to import into Precise.
- <domain-root-method> Indicates whether to use the <root-group> or the <users-root>/<groups-root> configuration for the entities mapping. Specify single or multiple.
- <paging-size> Indicates the number of entities per page in the result set from the LDAP. If zero (0) is specified, the paging mechanism is not used.
- <use-ldap-authentication> Indicates whether the LDAP authentication mechanism is used. Specify true or false.
- <use-ldap-management> If <use-ldap-authentication> is set to true, this parameter specifies whether users/roles management is by LDAP or by the Precise user interface. Specify true or false.
- <use-case-sensitive> If <use-case-sensitive> is set to true, the LDAP sync user will be set to case sensitive.

Example of a registry entry

Below is a registry entry example for the ldap.xml file.

```
<ldap>
  <!-- Indicator for using Ldap authentication true/false -->
  <use-ldap-authentication>true</use-ldap-authentication>
  <!-- Indicator for using Ldap for managing users/roles, true will block I3 GUI operations -->
  <use-ldap-managment>true</use-ldap-managment>
  <!-- Ldap server host name -->
  <host>pss-dc01</host>
  <!-- Ldap server port -->
  <port>389</port>
  <!-- Ldap paging size -->
  <paging-size>500</paging-size>
  <!-- Ldap bind user name -->
  <bind-user>CN=i4dcf,OU=APM Service Users & Groups,DC=precise,DC=com</bind-user>
  <!-- Ldap bind user password, encrypted!! -->
  <bind-password>_EncryptI3_A_1_F10EEB2FC3B6F88E</bind-password>
  <!-- in case there is only on domain the user can configure not to type the domain in the login -->
  <use-domain-in-login>false</use-domain-in-login>
  <domains>
    <domain>
      <domain-name>development</domain-name>
      <!-- Ldap group to import its members -->
      <root-group>CN=BU_RnD,OU=R&D,OU=APM,DC=precise,DC=com</root-group>
      <!-- Ldap group to import its members -->
      <root-group>CN=GRP_Integration,OU=Unknown users & groups,OU=APM Service Users &
Groups,DC=precise,DC=com</root-group>
    </domain>
    <domain>
      <domain-name>QA</domain-name>
      <!-- Ldap group to import its members -->
      <root-group>CN=BU_RnD,OU=R&D,OU=APM,DC=precise,DC=com</root-group>
    </domain>
  </domains>
  <!-- Ldap objectClass of the Users to sync -->
  <user-object-class>person</user-object-class>
  <!-- Ldap objectClass of the Roles to sync -->
  <group-object-class>group</group-object-class>
  <!-- Ldap attribute name of the User name -->
  <user-name-attribute>name</user-name-attribute>
  <!-- Ldap attribute name of the User distinguished name -->
  <user-dn-attribute>distinguishedName</user-dn-attribute>
  <!-- Ldap attribute name of the User login name -->
  <user-login-attribute>sAMAccountName</user-login-attribute>
  <!-- Ldap attribute name of the Role member list -->
  <group-members-attribute>member</group-members-attribute>
  <!-- Ldap attribute name of the Role name -->
  <group-name-attribute>name</group-name-attribute>
  <!-- I3 max users -->
  <max-users>500</max-users>
  <!-- I3 max roles -->
  <max-roles>500</max-roles>
```

```
<!-- Parameters handling method: single/multiple -->  
<domain-root-method>single</domain-root-method>  
<!-- Ldap sync user set as case sensitive -->  
<use-case-sensitive>>false</use-case-sensitive>  
</ldap>
```

For more information on running LDAP-sync command, see the [Precise CLI Utility Reference Guide](#).

Detailed action items for removing tiers

This section contains the following topics

- [Action Items for removing tiers](#)
- [Detailed action items for J2EE](#)
- [Detailed action items for Oracle](#)
- [Detailed action items for Siebel](#)

Action Items for removing tiers

Some Tiers require action items to complete the un-installing or removal of the Tier. Usually, the action items are listed online, but some Tiers have detailed action items that are fully documented below.

Detailed action items for J2EE

Before you remove J2EE Tier Collectors, you should remove the Precise for J2EE configuration that was added when you performed post-installation tasks. To remove the configuration, shutdown the JVM, remove the configuration from the startup script, and then restart the JVM.

For more information, see [J2EE Post installation action items](#).

i If you want to retain the instance or Tier history data, verify that the PMDB Maintenance (Weekly) process parameter is cleared. You are then able to view the data by installing a new instance using the same ID of the instance you deleted. For more information on the procedure for reusing an instance ID, see the [Installing an uninstalled, old instance_id parameter](#) section in the [Precise CLI Utility Reference Guide](#).

Detailed action items for Oracle

After removing the Oracle Tier Collectors, you need to perform the following task.

To completely remove the Oracle Tier Collectors

1. Log in to the server where the Precise for Oracle FocalPoint service is running as the Precise user.
2. Open a command line window and go to Precise installation folder.
3. Run the following command to drop the Precise for Oracle schema:

- **Windows**

```
products\oracle\install\uninstall_schema.bat \
-h host -s sid -u
```

```
oracle-user -p password \
-t oracle-port -v oracle-version \
-i i3 installation directory
```

- **UNIX**

```
./products/oracle/install/uninstall_schema.sh \
-h host -s sid -u oracle-user -p password \
-t oracle-port -v oracle-version
```

where *oracle-version* is 81, 90, or 100.

The uninstall script does not stop the Collector. It also does not drop the Precise Oracle user and its tablespaces. You may drop them using SQL*Plus.

4. Remove the following folder:
 - **Windows.** products\oracle\fp\host\sid
 - **UNIX.** ./products/oracle/fp/host/sid

To drop the Precise Oracle user and its tablespaces

1. Log in to the server machine where the Oracle Tier Collector is running as the Precise user.
2. Open a command line window and go to the Precise installation folder.
3. Run the following command to stop the Oracle Tier Collector:
 - **Windows.** products\oracle\install\uninstall_sys_obj.sql
 - **UNIX.** ./products/oracle/install/uninstall prod.sh sid
4. If no other Oracle Tier Collectors are installed on this instance, it is recommended to connect as system administrator and perform the following tasks:
 - a. Edit the uninstall_sys_obj.sql file and replace the parameters according to the instructions in the file.
 - b. Save the uninstall_sys_obj.sql file.
 - c. Run the SQL script using SQL*Plus:
 - **Windows.** products\oracle\install\uninstall_sys_obj.sql
 - **UNIX.** ./products/oracle/install/uninstall sys_obj.sql

Detailed action items for Siebel

When the Siebel Tier Collectors have been removed, you can delete the Precise Interpoint Project from the Siebel Repository File (SRF). These tasks differ slightly depending on whether Interpoint is installed for a SQL Server or an Oracle database. See [Deleting the Precise Interpoint project from the SRF \(Oracle\)](#) and [Deleting the Precise Interpoint project from the SRF \(SQL Server\)](#).

Deleting the Precise Interpoint project from the SRF (Oracle)

Deleting this project from the SRF involves the following tasks:

- Removing changes in the Application_PreNavigate() function
- Removing the business object
- Removing the CX_VTS_SBL table
- Removing the Precise project

To remove changes in the Application_PreNavigate() function

1. In Siebel Tools, go to View > Options.
2. In the Development Tools Options dialog box, on the Object Explorer tab, select the Application Server Script check box to display this application on the Types tab in the Object Explorer.
3. In the Object Explorer, on the Types tab, select Application > Application Server Script.
4. In the Application Server Scripts panel, select the script called Application_PreNavigate.
5. From the Edit menu, choose **Delete Record**.

If you want to make additional changes to your application, you first need to close and then reopen Siebel Tools.

To remove the business object

1. In Siebel Tools, in the Object Explorer, on the Types tab, select **Business Object**.
2. In the Business Object panel, select the Business Object called VERITAS_SBL.
3. On the Types tab, select Business Object > Business Object Component.
4. In the Business Object Component panel, right-click the component called VERITAS_SBL and select **Delete Record**.

To remove the CX_VTS_SBL table

1. In Siebel Tools, in the Object Explorer, on the Types tab, select **Table**.
2. In the Table panel, right-click the table called CX_VTS_SBL. and select **Delete Record**.
3. Log in to the Siebel database with the Siebel user.
4. Run the following command:
`select * from user_views where view_name = 'CX_VTS_SBL';`
5. If a row is returned, run the following command:
`drop view CX_VTS_SBL;`
6. Run the following command:
`select * from user_tables where table_name = 'CX_VTS_SBL_TAB';`
7. If a row is returned, run the following command:
`drop table CX_VTS_SBL_TAB;`

To remove the Precise Interpoint project

1. In Siebel Tools, in the Object Explorer, on the Types tab, select **Project**.
2. In the Projects panel, search for the Precise Interpoint project.
3. Make the project inactive.

Deleting the Precise Interpoint project from the SRF (SQL Server)

Deleting this project from the SRF involves the following tasks:

- Removing changes in the Application_PreNavigate() function
- Removing the business object
- Removing the CX_VTSSPID table
- Removing the Precise project

To remove changes in the Application_PreNavigate() function

1. In Siebel Tools, go to View > Options.
2. In the Development Tools Options dialog box, on the Object Explorer tab, select the Application Server Script check box to display this application on the Types tab in the Object Explorer.
3. In the Object Explorer, on the Types tab, select Application > Application Server Script.
4. In the Application Server Scripts panel, select the script called Application_PreNavigate.
5. On the Edit menu, choose **Delete Record**.

If you want to make additional changes to your application, you first need to close and then reopen Siebel Tools.

To remove the business object

1. In Siebel Tools, in the Object Explorer, on the Types tab, select **Business Object**.
2. In the Business Object panel, select the Business Object called VTS_SPID.
3. On the Types tab, select Business Object > Business Object Component. The Business Object Component panel for the VTS_SPID Business Object opens.
4. In the Business Object Component panel, right-click the component called VTS_SPID and select **Delete Record**.

To remove the CX_VTSSPID table

1. In Siebel Tools, in the Object Explorer, on the Types tab, select **Table**.
2. In the Table panel, right-click the table called CX_VTSSPID and select **Delete Record**.
3. Log in to the Siebel database with the Siebel user.
4. Run the following command:
`select * from user_views where view_name = 'CX_VTSSPID';`
5. If a row is returned, run the following command:
`drop view CX_VTSSPID;`

6. Run the following command:

```
select * from user_tables where table_name = 'CX_VTSSPID_TAB';
```

7. If a row is returned, run the following command:

```
drop table CX_VTSSPID_TAB;
```

To remove the Precise Interpoint project

1. In Siebel Tools, in the Object Explorer, on the Types tab, select **Project**.
2. In the Projects panel, search for the Precise Interpoint project.
3. Make the project inactive.

Configuring Precise to run without System Administrator privileges

 This section is only relevant for instances of SQL Server 2005 and higher.

When installing Precise for SQL Server, in a Precise version prior to version 8.0, you are asked to use a login account that has System Administrator privileges. Although it is strongly recommended to run Precise for SQL Server with a System Administrator user, in Precise version 8.0 and higher, it is also possible to use a less powerful login account.

In any case there are a few privileges that you need to grant to that login account:

- The privilege to alter a trace.
- The privilege to view any definition.
- The privilege to control the server.

Take into consideration, that when you run Precise for SQL Server with a login account that is not System Administrator, you will miss the following functionality:

- **DBCC TRACEON.** This may increase the number of sessions that have a NULL batch handle and therefore increase the amount of Text N/A batches.
Workaround: You can add DBCC TRACEON 2861 in the starting parameter of the SQL Server instance (-T 2861).
- **DBCC INPUTBUFFER (if needed by the internal collector logic).** This may limit the ability to retrieve the statement/batch text when the system encounters some known bugs in SQL Server.
- **Metrics for not responding transactions.** You will get an error in Alerts.
- **Show statistics and Show config views enabled in index/table entities in the Objects tab.** They will stop working.
- **Recommendations.** This may limit to get recommendation for objects and statements.


For more information, see [Start and Use the Database Engine Tuning Advisor](#) on the MSDN website.

Describing regular expressions

This section includes the following topics:

- [Describing regular expression used in assertions](#)
- [Describing regular expression used in masking](#)
- [Describing groups and structure](#)
- [Describing characters](#)
- [Describing character classes](#)
- [Describing atomic zero-width matches](#)
- [Describing quantifiers](#)
- [Describing lazy quantifiers](#)

Precise provides an extensive set of regular expression tools that allow you to efficiently validate strings for assertions as well as to mask different sub-strings for usage in variables. The set of tools is almost identical for both needs.

 The descriptions in this section do not cover all regular expressions.

Describing regular expression used in assertions

The regular expressions that are used in assertions are used to verify that an asserted text has a certain "structure" to it. To achieve that, no capture group is needed (see the Groups and Structures table for the definition of a capture group).

The text is matched using the regular expression rules, and the result may be "Matching" or "Not Matching."

Examples:

1. "Hello". The text Hello should be anywhere within the asserted text. Asserting "Hello World" text with this regular expression will succeed.
2. "\AHello\z". The text Hello should be the entire asserted text (between the starting point \A to the ending point \z). Asserting "Hello World" text with this regular expression will fail. The only string that can match it is "Hello" itself.
3. "[0-9]{1,2}\.[0-9]{1,2}\.[0-9]{4}". Text should include a date in the form "xx.xx.xxxx" (where the day and the month may be also one digit). For example, a possible match may be "12.5.2007".

Describing regular expression used in masking

These regular expressions are used in component variables to mask a portion of a text for use as variable value. To achieve that a capture group is needed (see the Groups and Structures table for the definition of a capture group). If several capture groups exist, only the first group's capture is used as a mask. When a capture group exists, all regular expressions within it (inside the regular parenthesis) are selected, and all outside expressions are only used for reference.

Examples:

1. "(Hello)". Captures the text Hello (if exists).
2. "([\w\W]*)". The default expression. Captures the entire text.
3. "(?:[\w\W]+?\s+){8}([\w\W]+?)\s+". Captures the 9th word. The first parenthesis (with the "?:" symbol) is a non-capturing group. The expression inside it is grouped for quantity needs (adding the "{8}" outside), but it will not be captured. The entire expression means. pass 8 words (followed by space characters), capture a word, and finish with space characters (non-captured). The question marks that follow the quantifiers are used to capture the minimal amount of characters that fulfill the quantifier rules.

Describing groups and structure

Groups allow you to capture sub expressions to increase the efficiency of regular expressions using quantifiers for groups, and supply you the method of selecting a sub expression for regular expression masking. The following table shows the list of groups.

Table 1 Groups

Construct	Matches
(X)	The capture group. For regular expression masking, there must be one and only one capture group, matching the selected masked expression. For regular expression assertions the capture group acts the same as the non-capturing group.
(?:X)	A non-capturing group. Any quantifier placed after it refers to the entire group X. For example, "index(?:aj)sp" matches index.asp and index.jsp.
XY	X followed by Y.
X Y	Logical OR (alternation). Either X or Y, The left most successful match wins. Usually used in a group (with parentheses).

Describing characters

Most of the important regular expression language operators are single characters without the escape character. The escape character `\` (a single backslash) signals to the regular expression parser that the character following the backslash is not an operator. For example, the parser treats an asterisk (`*`) as a repeating quantifier and a backslash followed by an asterisk (`*`) as the Unicode character 002A. The following table shows a list of characters used in regular expressions.

Table 2 Characters

Construct	Matches
x	The character x.
\\	The backslash character.
\xhh	The character with hexadecimal value 0xhh.
\uhhhh	The character with hexadecimal value 0xhhhh.
\cx	The control character corresponding to x. For example, <code>\cM</code> matches the carriage return character. If x is not in the range of A-Z or a-z, c is assumed to be the literal "c" character.
\t	The tab character (' <code>\u0009</code> '). Equivalent to <code>\cI</code> .
\n	The newline (line feed) character (' <code>\u000A</code> '). Equivalent to <code>\cJ</code> .
\r	The carriage-return character (' <code>\u000D</code> '). Equivalent to <code>\cM</code> .

Construct	Matches
\f	The form-feed character ('\u000C'). Equivalent to \cL.
\a	The alert (bell) character ('\u0007'). Equivalent to \cG.
\e	The escape character ('\u001B').

Describing character classes

A character class is a set of characters that will find a match if any one of the characters included in the set matches. The following table summarizes character matching syntax.

Table 3 Character classes

Construct	Matches
.	Any character (excluding the newline characters).
[chars]	Any single character included in the specified set of characters. For example, "f[ai]t" matches fat and fit but not fait.
[^chars]	Any single character not in the specified set of characters (negation). For example, "p[^oi]t" matches pat and put but not pot and pit.
[x-y]	Range. Matches any character in the specified range. "[a-z]" matches any lowercase character from a to z, "[A-Z]" matches any uppercase character from A to Z, "[0-9]" matches any integer between 0 and 9, and so on.
\p{name}	Matches any character in the named character class specified by {name}. Supported names are Unicode groups and block ranges. For example, Ll, Nd, Z, lsGreek, and so on.
\P{name}	Matches text not included in groups and block ranges specified in {name}.
\d	A decimal digit: [0-9].
\D	A non-digit: [^0-9].
\s	A whitespace character: [\t\n\r\f].
\S	A non-whitespace character: [^\s].
\w	A word character: [a-zA-Z_0-9].
\W	A non-word character: [^\w].

Describing atomic zero-width matches

The meta characters described in the following table do not represent characters. They simply cause a match to succeed or fail depending on the current position in the string. For example, `^` specifies that the current position is at the beginning of a line. Thus, the regular expression `^FTP` returns only those occurrences of the character string "FTP" that occur at the beginning of a line.

Table 4 Meta characters

Construct	Matches
<code>^</code>	The beginning of a line (any line in a multi-line input).
<code>\$</code>	The end of a line (before <code>\n</code> at the end of the line).
<code>\b</code>	A word boundary - that is, at the first or last characters in words separated by any non-alphanumeric characters.
<code>\B</code>	Not a <code>\b</code> boundary.
<code>\A</code>	The beginning of the input.
<code>\Z</code>	The end of the input (before <code>\n</code> at the end of the input, if exists).
<code>\z</code>	The end of the input.


Describing quantifiers

Quantifiers add optional quantity data to a regular expression. A quantifier expression applies to the character, group, or character class that immediately precedes it. When more than one match exists, it returns the maximum number of repetitions. The following table describes the quantifiers. The minimum number of repetitions is described in Lazy Quantifiers.

Table 5 Quantifiers

Construct	Matches
<code>X?</code>	X, once or not at all. For example, "potatoe?" matches "potato" and "potatoe". When this quantifier follows another quantifier, the result is a lazy quantifier. For more information, see the Lazy Quantifiers table.
<code>X*</code>	X, zero or more times. For example, "Gr*" matches G, Gr, Grr, Grrr, and so on (in this example the * defines that the "r" is either there or not).
<code>X+</code>	X, one or more times. For example, "Gr+" matches Gr, Grr, Grrr, and so on.
<code>X{n}</code>	X, exactly n times. For example, "(?:ab){2}" matches "abab".
<code>X{n,}</code>	X, at least n times. For example, "[1-4]{2,}" matches any 2+ digit number with the combination of numbers 1 through 4.

Construct	Matches
X{n,m}	X, at least n but not more than m times. For example, "mai{0,1}n" matches main and man.

 You cannot use quantifiers with atomic zero-width matches.

Describing lazy quantifiers

Lazy quantifiers behave the same as quantifiers, except that instead of searching the maximum number of repetitions, it searches for the minimum number of repetitions. The following table describes the lazy quantifiers.

Table 6 Lazy quantifiers

Construct	Matches
X??	X, not at all if possible, and once. Lazy X?.
X*?	X, zero or more times (with as few repeats as possible). Lazy X*.
X+?	X, one or more times (with as few repeats as possible). Lazy X+.
X{n}?	Equivalent to {n}.
X{n,}?	X, at least n times with as few repetitions as possible. Lazy X{n,}.
X{n,m}?	X, at least n but not more than m times, with as few repetitions as possible. Lazy X{n,m}.

For additional information about regular expressions, see the website http://en.wikipedia.org/wiki/Regular_expression.

SAP transports description

This section includes the following topics:

- [Overview](#)
- [Function Modules implementing core functionality](#)
- [Function Modules that pull lists from the SAP instance](#)
- [SAP Function Modules called by Precise](#)
- [List of obsolete objects](#)

Overview

This section is oriented toward customers who want to know more about the Function Modules required by this version of Precise for SAP. All Function Modules are part of the /PRECISE/ZLSC function group.

Function Modules implementing core functionality

The following function modules implement the core functionality of the Precise for SAP product:

`/PRECISE/READ_STAT_Vxxx`

The function is a wrapper around the SAP BAPI: SWNC_STATREC_READ.

It returns the contents of the stat file.

`/PRECISE/Z_LSC_SERVER_INFO2`

This function returns application server information from SAP.

`/PRECISE/Z_LSC_BATCH_ACTIVE`

This function returns data about active jobs that are currently running on the application server. It is executed whenever the "Current Batches" table is requested from the Precise for SAP UI.

Function Modules that pull lists from the SAP instance

The following functions return various lists from the SAP instance. The product uses the information in these lists to allow filtering SAP performance statistics. The statistics can be filtered on any entity that is included in these lists.

The lists are:

Table 1 Function Modules

List Type	Function Module
Programs	<code>/PRECISE/Z_LSC_PGM_LIST2</code>
T-Codes	<code>/PRECISE/Z_LSC_TRAN_LIST2</code>
Applications	<code>/PRECISE/Z_LSC_APP_LIST2</code>
Users	<code>/PRECISE/Z_LSC_USER_GETLIST</code> <code>/PRECISE/Z_LSC_USER_LIST2</code>
Clients	<code>/PRECISE/Z_LSC_CLIENT_LIST</code>

List Type	Function Module
Application Servers	/PRECISE/Z_LSC_SERVER_LIST2

SAP Function Modules called by Precise

In addition to the function modules delivered by Precise, the product also calls function modules delivered by SAP. These are:

- RFC_PING
- THUSRINFO
- SAPTUNE_GET_SUMMARY_STATISTIC
- GET_CPU_ALL
- GET_MEM_ALL
- STUM_WP_SERVER_ACTIVITY

List of obsolete objects

In past versions of the product, certain objects were installed that are obsolete, and are not used in version 9.6 and later. These objects will be removed in future versions.

The objects are:

Table 2 Obsolete Objects

Object Type	Object Name
Program	/PRECISE/ZLSCRIX1
Program	/PRECISE/ZLSCUSRL
Program	/PRECISE/ZLSCUSRL2
Function Module	/PRECISE/RESET_ALERTS_V4

SAP user authorizations

As described in the procedure, [To install Precise for SAP Function Modules in the SAP system](#) in [Installing Precise for SAP Function Modules in the SAP system](#), all authorizations in the Z_PRECISE Profile (for Basis 4.6C to 6.40) or in the Z_PRECISE Role (SAP Basis 7.x) have to be added to the SAP user. The minimum authorization information is presented in the following table:

Table 1 SAP User Authorization information

Object Class	Authorization Object	Authorization	Value
AAAB Cross-Application	S_RFC	ACTVT	*
AAAB Cross-Application	S_RFC	RFC_NAME	*
AAAB Cross-Application	S_RFC	RFC_TYPE	*
AAAB Cross-Application	S_RFC_ADM	ACTVT	36
AAAB Cross-Application	S_RFC_ADM	ICF_VALUE	*
AAAB Cross-Application	S_RFC_ADM	RFCDEST	*
AAAB Cross-Application	S_RFC_ADM	RFCTYPE	*
BC_A Basis: Administration	S_ADMI_FCD	S_ADMI_FCD	*
BC_A Basis: Administration	S_BTCH_ADM	BTCADMIN	*
BC_A Basis: Administration	S_CPIC	ABAPFORM	*
BC_A Basis: Administration	S_CPIC	ACTVT	*
BC_A Basis: Administration	S_CPIC	CPICDEST	*
BC_A Basis: Administration	S_CPIC	PROGRAM	*

Object Class	Authorization Object	Authorization	Value
BC_A Basis: Administration	S_CTS_ADMI	CTS_ADMFCT	*
BC_A Basis: Administration	S_C_FUNCT	ACTVT	*
BC_A Basis: Administration	S_C_FUNCT	CFUNCNAME	*
BC_A Basis: Administration	S_C_FUNCT	PROGRAM	*
BC_A Basis: Administration	S_DATASET	ACTVT	*
BC_A Basis: Administration	S_DATASET	FILENAME	*
BC_A Basis: Administration	S_DATASET	PROGRAM	*
BC_A Basis: Administration	S_PATH	ACTVT	*
BC_A Basis: Administration	S_PATH	FS_BRGRU	*
BC_A Basis: Administration	S_RZL_ADM	ACTVT	03
BC_A Basis: Administration	S_TABU_DIS	ACTVT	03
BC_A Basis: Administration	S_TABU_DIS	DICBERCLS	*
BC_A Basis: Administration	S_TOOLS_EX	AUTH	*
BC_A Basis: Administration	S_USER_AUT	ACTVT	03

Object Class	Authorization Object	Authorization	Value
BC_A Basis: Administration	S_USER_AUT	AUTH	*
BC_A Basis: Administration	S_USER_AUT	OBJECT	*
BC_A Basis: Administration	S_XMI_PROD	EXTCOMPANY	PRECISE SOFTWARE
BC_A Basis: Administration	S_XMI_PROD	EXTPRODUCT	PRECISE FOR SAP
BC_A Basis: Administration	S_XMI_PROD	INTERFACE	XAL, XBP
RS Business Information Warehouse	S_RS_ADMWB	ACTVT	03
RS Business Information Warehouse	S_RS_ADMWB	RSADMWBOBJ	WORKBENCH
RS Business Information Warehouse	S_RS_AUTH	BIAUTH	*
RS Business Information Warehouse	S_RS_COMP	ACTVT	16
RS Business Information Warehouse	S_RS_COMP	RSINFOAREA	*
RS Business Information Warehouse	S_RS_COMP	RSINFOCUBE	OTCT_*
RS Business Information Warehouse	S_RS_COMP	RSZCOMPID	*

Object Class	Authorization Object	Authorization	Value
RS Business Information Warehouse	S_RS_COMP	RSZCOMPTP	*
RS Business Information Warehouse	S_RS_DTP	ACTVT	03
RS Business Information Warehouse	S_RS_DTP	RSONDTPSRC	*
RS Business Information Warehouse	S_RS_DTP	RSONDTPTGT	*
RS Business Information Warehouse	S_RS_DTP	RSSTDTPSRC	*
RS Business Information Warehouse	S_RS_DTP	RSSTDTPGT	*
RS Business Information Warehouse	S_RS_DTP	RSTLDTPTGT	*
RS Business Information Warehouse	S_RS_DTP	RSTLDTPTGT	*
RS Business Information Warehouse	S_RS_MPRO	ACTVT	3
RS Business Information Warehouse	S_RS_MPRO	RSINFOAREA	*
RS Business Information Warehouse	S_RS_MPRO	RSMPRO	*

Object Class	Authorization Object	Authorization	Value
RS Business Information Warehouse	S_RS_MPRO	RSMPROOBJ	*
RS Business Information Warehouse	S_RS_RSTT	ACTVT	1
RS Business Information Warehouse	S_RS_RSTT	RSTTBOBJ	TRACE
RS Business Information Warehouse	S_RS_RSTT	USER	*