Oracle® Primavera® P6™ Reporting Database R2 and P6™ Analytics R1

Administrator's Guide

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Preface

In this preface

The P6 Reporting Database application enables customers to generate two types of databases that can be used to extract and transform data from the Primavera P6 Project Management database. This data can then be used to create reports via third party reporting products. The two types of databases are the Operational Data Store (ODS) and the Star Schema Database (Star).

This guide describes how to install and configure the P6 Reporting Database application, and explains how to generate the ODS and Star databases.

Using the Administrator's Guide

This guide is a step-by-step guide to installing and configuring the ODS and Star databases. This guide is organized as follows:

Part 1: Before You Begin Provides an overview of the P6 Reporting Database application. Lists and describes the prerequisites for installing and using the P6 Reporting Database application. Provides an overview of the P6 Analytics application, which provides an interactive way of viewing, analyzing, and evaluating your Project Management data

Part 2: P6 Reporting Database Installation and Configuration Provides instructions for installing and configuring P6 Reporting Database software for Oracle and Microsoft SQL Server systems.

Part 3: Administrative Tasks Provides information about the administrative tasks for the ODS and Star databases. Also describes the tasks for installing Oracle Business Intelligence Publisher, for installing and configuring Oracle Business Intelligence, for running the Configuration Utility, and provides troubleshooting information.

P6 Reporting Database Documentation

You can access the P6 Reporting Database documentation from the physical media or download location. Double-click the applicable PDF file to view the information in Adobe Acrobat Reader. The following table describes the available documentation.

Title	Description
Oracle P6 Reporting Database Administrator's Guide	Explains how to: ■ Install and configure the P6 Reporting Database application, and how to generate ODS and Star databases. ■ Configure Oracle Business Intelligence Publisher to work with P6 Reporting Database. ■ Install and configure the Oracle Business Intelligence software. ■ Use the P6 Reporting Database Configuration Utility.
Oracle P6 Reporting Database User's Guide	Provides information about: ■ Using ODS and Star with the P6 Project Management module to extract data that can be used to create reports. ■ Using Oracle Business Intelligence Publisher to create reports. ■ Oracle Business Intelligence Dashboards and Answers

Contacting Customer Support

If you have a question about using Oracle Primavera products that you or your network administrator cannot resolve with information in the documentation or Help, contact Customer Support.

For instructions on how to submit a service request for technical support for your products, go to:

http://www.oracle.com/primavera/support.html

This page provides the latest information for contacting support and the support renewals process.

Part 1

Before You Begin

In this part

Read this part to learn more about the P6 Reporting Database application, and to learn what the prerequisites are for installing it.

Overview provides an overview of the P6 Reporting Database application.

Prerequisites lists and describes what you need to have in order to install and use the P6 Reporting Database application.

Overview

In this chapter

This chapter provides a general overview of the P6 Reporting Database application, including the Extract, Transform, and Load (ETL) process, and scheduling updates from the Project Management database. It describes the Operational Data Store (ODS) and the Star Schema (Star), setting data warehouse date ranges, dimensions for tables in the Star database, and calculated fields.

It also provides an overview of P6 Analytics. P6 Analytics provides customers with an in-depth and comprehensive method for analyzing and evaluating their project performance, project history, resource assignments and utilization.

Overview of the P6 Reporting Database Application

The P6 Reporting Database application works with the Project Management module to provide a robust and powerful reporting solution. P6 Reporting Database application enables customers to create the following types of reports for portfolios and projects:

- Day-to-day operational reports using the Operational Data Store (ODS)
- Business intelligence analysis using the Star Schema (Star).

Operational Data Store (ODS) This portion of the P6 Reporting Database application is a relational database that supplies day-to-day, easy to understand operational views of the Project Management database data.

Persisting and transforming all of the data found in the Project Management database enables customers to create unique reports on any project or portfolio. The ODS provides the most granular view of the Project Management database data. It applies P6 Integration API formulas for many types of calculated data that otherwise would not be visible in the Project Management database by using a direct query (for example, percent complete, variances, earned value, and WBS spreads).

Defined P6 Reporting Database users can view the same OBS, project, cost, and resource data in the ODS as they can in P6 Project Management.

Star The Star database enables an organization to perform advanced business analysis on project and portfolio data. It supplies a dimensional schema that organizes Project Management database data into hierarchical relationships.

The Star Schema design enables the highest level of query efficiency and flexibility in data analysis. The Star database is designed to accumulate project data over time. This provides organizations with baselines for tracking trends and for advanced business intelligence.

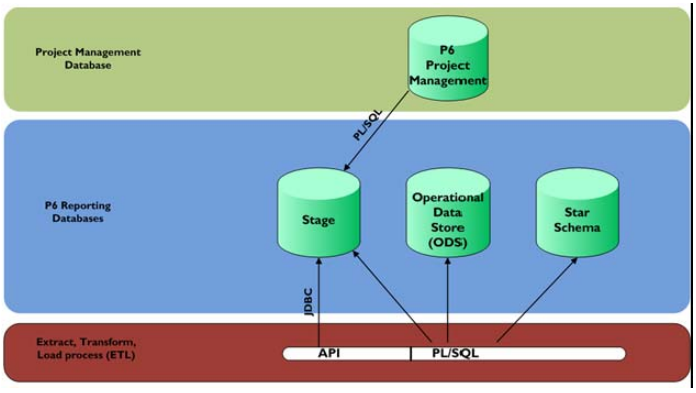
Extract, Transform, Load (ETL) process An ETL process provides data movement between the Project Management database and the ODS and Star reporting databases. Part of the ETL process is to de-normalize the Project Management database into the reporting databases. The de-normalization process attempts to optimize database performance.

Project Management data is extracted, calculations applied in a staging area, and the data is loaded into the ODS and Star databases. ETL scheduling provides cyclical refresh capabilities down to the day, and an on-demand refresh capability for up-to-date data freshness. The ETL process requires an intermediate staging database to perform calculations before delivering the data to the ODS and Star databases.

The ETL process:

- Ensures that data is optimized for analytical reporting
- Fulfills the schedule refresh window
- Accommodates on-demand refreshes
- Implements P6 security model at the database level

The following figure illustrates the ETL process:



In the preceding figure:

- The Stage schema is created with an exact copy of the P6 Project Management data (Full ETL process).
- The Stage schema contains not only an exact copy of the P6 Project Management data, but also denormalized and persisted calculated Project Management fields.

- During the full or incremental ETL process, a combination of PL/SQL statements and the Integration API is used to populate the denormalized and persisted calculated P6 Project Management fields.
- After API process is completed, PL/SQL is used to distribute physical, calculated, and denormalized data to the ODS and Star schemas.

Security Overview

See "ODS Security Configuration" on page 83, and the "ODS Security" chapter of the *P6 Reporting Database and P6 Analytics User's Guide*.

The ODS maintains similar security as P6 Project Management. The security being maintained consists of Project/Cost security, Resource security, and OBS security. See the "ODS Security" chapter of the *P6 Reporting Database and P6 Analytics User's Guide* for more information.

See "Setting Up Star Security" on page 91.

The Star maintains similar security as P6 Project Management. The security being maintained consists of Project/Cost security, Resource security, and OBS security. See the "Setting Up Star Security" later in this guide for more information.

ETL Data Process Details

Integration API At the scheduled time, the ETL process launches the P6 Reporting Database Integration API, which calculates changes to underlying data in the P6 Project Management database since the last time that the ETL process was run.

When the API calculation has completed, stored procedures are called that perform the transformation processing (for example, calendar calculation and hierarchical referencing).

When transformation processing completes, distribution occurs from the Stage database to the ODS database and Star database.

Scheduling Overview

Once the ODS and Star databases are fully installed, you decide when and how often to update the databases from the Project Management database. These updates will be performed in an incremental fashion. This means that only the data that has changed in the Project Management database since the last time the ETL process was run will be transferred. The process for updating the ODS and Star databases can be launched in the following ways:

- Manually when required
- Scheduled to occur exactly once sometime in the future
- Scheduled to recur during regular intervals

For information on scheduling the database update, see "Scheduling the Incremental Database Update" on page 80.

For information on manually launching the database update, see "Manually Launching the Incremental Database Update" on page 81.

The file that launches the ETL process is:

- incremental.bat for Oracle on a Windows platform
- incremental.sh for Oracle on a non-Windows platform

The incremental.bat or incremental.sh file resides in the following subfolder of your P6 Reporting Database installation folder:

<installation folder>\p6rdb\scripts

To ensure that your Reporting Database system has the latest data from the Project Management database, perform the ETL data refresh process once every 24 hours during off hours.

Allow sufficient time to complete the scheduled run of the ETL process. The start of a process should not over-run the completion of another. This may cause unexpected results and is not recommended.

Any mechanism can be used to launch or schedule the launch of the incremental.bat (or incremental.sh) file. The Windows AT command, Task Scheduler, or Unix CRON are all viable options. The user who initiates the incremental process needs read/write access to the P6 Reporting Database installation folder.

History Fact Trending

When the incremental.bat (or incremental.sh) file is run, it updates both the ODS and the Star database with the latest data from Project Management database.

In addition, the Star has the ability to retain Project level data from any previous run of the ETL process, so that multiple sets of Project level data can be accumulated within the Star database.

Dimensions

For a list of the Dimension tables, see the "Tables in the Star Database" section of the "Star Schema (Star)" chapter in the *Primavera P6 Reporting Database and P6 Analytics User's Guide*.

Dimensions are a functionality of the Star schema, and describe how a business views and analyzes its data. For example, actual project cost results might be analyzed (or grouped and sorted) by the time dimension (when they were planned or when they were actually incurred), and by the project dimension.

The time dimension can also provide comparison (for example, the previous year results versus the current year results).

Calculated Fields

Calculated fields are elements that are not visible in the Project Management database. They are processed, and then calculated by the API application. For example, the **actual hours** measure shows how many hours each resource charged to a given project or WBS. The Project Management application contains units (for example: counts, hours, quantity), dates, durations, and cost measures.

Calculated fields apply to both ODS and Star, and are not stored as physical fields in the Project Management database. Instead, stored values are loaded by applications, and calculations are applied in memory. The calculations are extracted by the ETL process, and the results are stored as physical fields in ODS and Star.

Overview of P6 Analytics

P6 Analytics provides an in-depth and comprehensive method for analyzing and evaluating project performance, project history, resource assignments and utilization.

Built upon the Oracle Business Intelligence suite (Dashboards and Answers), P6 Analytics delivers a catalog of Dashboards and Answers requests that provide an interactive way of viewing, analyzing, and evaluating Project Management data. In addition, P6 Analytics provides a Repository (RPD) file which contains the data mappings between the physical data and the presentation layer of OBI.

The dashboards provide detailed insight into your Project Management data, through the use of analytical charts, tables, and graphics. Dashboards have the ability to navigate to other requests, to provide precise root cause analysis. In Addition, you can configure individual requests with the P6 Action Link, which enables you to navigate directly to your P6 Web Access site for true “Insight to Action” capabilities. Reports created with Oracle BI Answers can be saved in the Oracle BI Presentation Catalog, and can be integrated into any Oracle BI home page or dashboard. Results can be enhanced through options such as charting, result layout, calculation, and drilldown features.

P6 Analytics provides an RPD file to be used with the Oracle Business Intelligence suite. The RPD file contains:

- A physical representation of the Star schema
- A business layer where customized calculations are performed
- A presentation layer that groups all of the Star database fields into logical subject areas.

The RPD delivers an extensive amount of Earned Value, Costs, Units, Percent Completes, and other key performance indicators. It enables data to be sliced by items such as time, project, eps, portfolios, activities, and resources.

P6 Analytics delivers a sample dataset (PMDB, Stage, ODS, and Star) from which the Dashboards and Answers requests in the catalog were built. This sample data can be used to view the power of dashboard and Answers requests delivered in the catalog, which will give the user an idea of how the catalog can be integrated with their data. For information on configuring the sample dataset, see the **SampleData.pdf** document that is incluced in the P6Analytics\Sample folder on your release media or download.

Prerequisites

In this chapter

This chapter describes the prerequisites for installing and using the P6 Reporting Database application.

The Project Management module must already be installed, and a Project Management database already created.

This chapter includes required database instances, supported databases, and disk storage space requirements.

Project Management and JRE Requirements

The Project Management application must be installed, and a Project Management database must already be created.

This version of the P6 Reporting Database R2 software is compatible with Oracle Primavera Project Management schema versions 6.2, 6.2.1, and 7.0.

See "Recommended locations for Stage, ODS, and Star" on page 30.

JRE 1.6.0_18 or above must be installed on the same machine where the Stage database is installed.

See "Install the Oracle Gateway" on page 27.

If the Project Management database is a Microsoft SQL Server database, the Oracle Gateway application must be used to connect the Project Management database (Microsoft SQL Server) to the Stage Database (Oracle). The Stage, ODS, and Star databases must be in an Oracle instance. (Using Microsoft SQL Server for Stage, ODS, and Star is no longer supported.)

Install the Oracle Gateway

If your Project Management database is a Microsoft SQL Server database, you must install the Oracle Gateway. Go to one of the following web sites for information about installing the Oracle Gateway:

- For Oracle Gateway 10g, go to the following web site:

  http://www.oracle.com/technology/documentation/gateways10g.html

- For Oracle Gateway 11g, go to the following web site:

  http://download.oracle.com/docs/cd/B28359_01/gateways.111/b31043/toc.htm

The URLs for the preceding web sites should each be on one line. Format restrictions of this document prevent them from appearing on one line.

See "Configure the Oracle Gateway for a Specific Microsoft SQL Server Database" on page 64.

After you install the Oracle Gateway, you must configure it to use the Project Management database.

Oracle Password Requirements

For information on Oracle password requirements, see the following web site:

http://download.oracle.com/docs/cd/B28359_01/server.111/b28337/tdpsg_user_accounts.htm#BEICECGF

The preceding URL should all appear on one line. Format restrictions of this document prevent it from doing so.

Oracle tnsnames.ora File Requirements

Ensure that the **tnsnames.ora** file contains references to the P6 Project Management database, the Stage database, the ODS database, and the Star database, before configuring these databases.

Required Database Instances and Supported Databases

Required database instances for Stage, ODS, and Star The following database instances must already exist:

- A database instance for the Staging database (Stage) used during the ETL process.
- A database instance for the ODS.
- A database instance for Star.

The database collation that you set when you create the Stage, ODS, and Star databases must be the same for each, and must match the database collation set for the Project Management database when it was created.

Oracle recommends using either UTF-8 or the WE8MSWIN1252 character set for P6 Reporting Database. The Oracle AL32UTF8 character set is not supported P6 Reporting Database.

Recommended locations for Stage, ODS, and Star It is recommended that the Stage, ODS, and STAR schemas reside on different physical machines from the Project Management database. This minimizes the impact that the P6 Reporting Database has on the performance of the Project Management database server.

The STAGE, ODS, and STAR schemas may reside on the same server or on different servers.

Operating System User Permissions

To install P6 Reporting Database and run the files, the user for Windows must have full read/write access to the P6 Reporting Database installation directory. The user for Solaris, Linux, HP-UX or AIX should also have full read/write access to the P6 Reporting Database installation directory, and is typically the Oracle Account.

Disk Storage Space Requirements

Stage and ODS disk storage space requirement The amount of disk storage space required for the Stage database is at least two times the size of the Project Management database.

The amount of disk storage space required for the ODS database is at most two times the size of the Project Management database.

Star disk storage space requirement The amount of disk storage space required for the Star database varies greatly, based on the granularity of periodic data being accumulated. On average, this is half the size of the Project Management Database.

Bulk File Load Requirements

When selecting a location for the bulk file load, ensure that several gigabytes of free space are available, since these files can become very large, depending on the size of your database.

Create the Tablespaces for Oracle

Log onto SQL Plus as System\<system password> to create the Oracle tablespaces before you install P6 Reporting Database.

See "Recommended locations for Stage, ODS, and Star" on page 30

Before creating the tablespace definitions, make sure that the Stage, ODS, and Star databases are in their proper locations.

When entering the tablespace definitions:

- The single quotation marks must be entered.
- You may change the path (c: in these tablespace definitions), depending on where Oracle tablespaces will be located.
- All other information in the tablespace definition must be entered exactly as shown.
- You must enter the semicolon at the end of the tablespace definition.

Create the Stage tablespace

1. Connect to the P6 Reporting Database Stage instance with a user that has create tablespace privileges.
2. Enter the following to create the Stage tablespaces (where <path> is the location of the Stage instance):

```
Create tablespace stage_dat1
    Datafile '<path>:\ stage_dat1.dbf'
    Size 32m
    Autoextend on
    Extent management local;
```

Create the ODS tablespaces

1. Connect to the P6 Reporting Database ODS instance with a user that has create tablespace privileges.
2. Enter the following to create the ODS tablespaces (where <path> is the location of the ODS instance):

```
Create tablespace ods_dat1
    Datafile '<path>:\ ods_dat1.dbf'
    Size 32m
    Autoextend on
    Extent management local;
```

Create the Star Tablespaces

1. Connect to the P6 Reporting Database Star instance with a user that has create tablespace privileges.
2. Enter the following to create the Star tablespaces (where <path> is the location of the Star instance):

```
Create tablespace star_dat1
    Datafile '<path>:\ star_dat1.dbf'
    Size 32m
    Autoextend on
    Extent management local;
```

Part 2

P6 Reporting Database Installation and Configuration

In this part

Read the chapters in this part to learn how to install, configure, and administer the P6 Reporting Database application.

Install the P6 Reporting Database Application describes how to install the P6 Reporting Database application for Microsoft SQL Server systems and for Oracle systems.

Configure the Software for Oracle Systems describes how to configure the P6 Reporting Database application for Oracle systems.

Configure the Software for Microsoft SQL Server Systems describes how to configure the P6 Reporting Database application for Microsoft SQL Server systems.

Install the P6 Reporting Database Application

This chapter describes the process for installing P6 Reporting Database software.

In this chapter

Before Installing P6 Reporting Database

Before installing the P6 Reporting Database software:

See *"Prerequisites"* on page 25.

- Be sure you have met the installation prerequisites.
- The Oracle database instance must already exist before running the installation.

See "*Required Database Instances and Supported Databases*" on page 30.

- The installation must be run on the machine where the Stage database is installed.
- For either a Windows or a non-Windows system, the Oracle utility **TNSPING** must be in the path of the user who is running the installation in order for P6 Reporting Database to install successfully.
- It is assumed that you are installing the software on the machine hosting the Stage instance.

Due to the global nature of the Oracle Universal Installer (OUI), the OUI online help is not applicable for installing or uninstalling P6 Reporting Database, nor for references to the documentation. Instead, refer to the "Installation Procedure" section that follows for installation instructions.

Installation Procedure

To install the P6 Reporting Database application, do the following:

1. From the P6 Reporting Database physical media or download location, run one of the following depending on your system type:
   - If you are installing on a Microsoft Windows system,

     windows\Disk1\install\setup.exe

   - If you are installing on a non-Microsoft Windows system,

     <Operating System>\Disk1\install\runInstaller

     Where <Operating System> is either AIX, HP-UX, Linux, or Solaris.
2. On the **Welcome** window, click **Next**.
3. On the **Specify Home Details** window:
   a) Enter an appropriate name for the P6 Reporting Database application in the **Name** field.
   b) Click the Browse button next to the Path field to specify the installation location for the P6 Reporting Database application.
   c) Click **Next**.
4. On the **Java Runtime** window, click the Browse button to specify the location of JRE version 1.6.0_18. Click **Next** to continue.
5. Read the summary information that explains where P6 Reporting Database will be installed, what features will be installed, and the total size, and click **Install**.
6. Prior to installation completion, the P6 Reporting Database configuration utility will launch in a separate window.
   - For Oracle systems, see "Configure the Software for Oracle Systems" on page 43.
   - For Microsoft SQL Server systems, see "Configure the Software for Microsoft SQL Server Systems" on page 63 for information about configuring the gateway to connect P6 Project Management on an MS SQL Server system to P6 Reporting Database on an Oracle Instance.

7 After completing the P6 Reporting Database configuration utility, the **End of Installation** window displays. Click **Exit** to finish the installation.

Configure the Software for Oracle Systems

In this chapter

This chapter describes the process for configuring the P6 Reporting Database software for Oracle systems.

During the configuration phase, some of the dialog boxes may be pre-filled with data. Check the data, and change it as necessary.

Configure the Oracle Connection

See "Before Installing P6 Reporting Database" on page 40.

In the P6 Reporting Database utility, you will start with the PMDB tab, which will enable you to enter your Oracle connection information for your Project Management database instance.

To see a description of the type of data a field requires, use your mouse to hover over the field.

Enter the Project Management database instance connection information In the Connection Settings section:

1. Enter the **Host Name**. This is the machine name or IP Address of the Oracle server where the Project Management database instance resides.
2. Enter the **Port Number**. This is the port number of the Oracle server where the Project Management database instance resides. The default is 1521.
3. In the **Service Name** field, enter the Oracle TNS Service Name of the Project Management database instance.
4. The **JDBC URL** field is automatically filled in based on the information you entered in the previous steps of this section. You cannot edit this field.
5. The **TNS Name** field is automatically filled in based on the information you entered in the previous steps of this section. You cannot edit this field.

Enter the privileged username and password In the Privileged section:

1. Enter the Oracle privileged username. This is the Oracle user who can access and read from the Project Management database instance tables. The default username is **PRIVUSER**.
2. Enter the password for the Oracle privileged user. This is the password for the Oracle user who can access and read from the Project Management database instance tables. The default password is **PRIVUSER**.

See "Configure the Oracle Stage Database Connection" on page 45.

3. Click **Next** to go to the **Stage** tab. Use the fields on that tab to configure the Stage database connection settings, and Oracle connection settings for the Stage database.

Configure the Oracle Stage Database Connection

You should now see the Stage tab, which will enable you to configure the Oracle connection settings for the Stage database instance.

If your database instance is setup for case sensitive passwords, be sure to follow this convention for all passwords in the P6 Reporting Database configuration utility.

Enter the connection information for the Stage database In the Connection Settings section:

1. Enter the **Host Name**. This is the name or IP address of the Oracle server where the Stage database resides.
2. Enter the **Port Number**. This is the port number of the Oracle server where the Stage database resides. The default is **1521**.
3. In the **Service Name** field, enter the Oracle TNS Service Name of the Stage database. The Service Name is used to connect to the database via JDBC.
4. The **JDBC URL** field is automatically filled in based on the information you entered in the previous steps of this section. You cannot edit this field.
5. The **TNS Name** field is automatically filled in based on the information you entered in the previous steps of this section. You cannot edit this field.

Enter the Oracle system username and password In the System section:

1. Enter the DBA Username. This is the username of the user who has DBA privileges for the Stage database. The default name is **SYSTEM**.
2. Enter the **DBA Password**. This is the password of the user who has DBA privileges for the Stage database.

Enter the Oracle table owner username and password In the Owner section:

1. Enter the **Stage Username**. This is the username name of the user who will own the Stage tables. This username does not currently exist. You must enter it to create it. The default is **STAGEUSER**.

2 Enter the **Stage Password**. This is the password of the user who will own the Stage tables.

3 In the **Confirm Password** field, enter the same password that you entered in step 2 to confirm the password.

4 Click Next to go to the ODS tab. Use the fields on this tab to configure the ODS database connection settings.

See "Configure the Oracle ODS Database Connection" on page 47.

Configure the Oracle ODS Database Connection

You should now see the ODS tab, which will enable you to configure the Oracle connection settings for the ODS database instance.

Enter the connection information for the ODS database In the Connection Settings section:

1. Enter the **Host Name**. This is the name or IP Address of the Oracle server where the ODS database resides.
2. Enter the **Port Number**. This is the port number of the Oracle server where the ODS database resides. The default is **1521**.
3. In the **Service Name** field, enter the Oracle TNS Service Name of the ODS database. The Service Name is used to connect to the database via JDBC.
4. The **JDBC URL** field is automatically filled in based on the information you entered in the previous steps of this section. You cannot edit this field.
5. The **TNS Name** field is automatically filled in based on the information you entered in the previous steps of this section. You cannot edit this field.

Enter the Oracle system username and password In the System section:

1. Enter the DBA Username. This is the username of the user who has DBA privileges for the ODS database. The default name is **SYSTEM**.
2. Enter the **DBA Password**. This is the password of the user who has DBA privileges for the ODS database.

Enter the connection information for the table owner In the Owner section:

1. Enter the **ODS Username**. This is the username name of the user who will own the ODS tables. This username does not currently exist. You must enter it to create it. The default is **ODSUSER**.
2. Enter the **ODS Password**. This is the password of the user who will own the ODS tables.
3. In the **Confirm Password** field, enter the same password that you entered in step 2 to confirm the password.

See "Configure the Oracle Star Database Connection" on page 49.

4 Click **Next** to go to the **STAR** tab. Use the fields on that tab to configure the Star database connection.

Configure the Oracle Star Database Connection

This section describes the steps for configuring the Star database for Oracle.

Configure the Star database connection settings To configure the connection information for the Star database, do the following:

1. Enter the **Host Name**. This is the name or IP Address of the Oracle server where the Star database resides.
2. Enter the **Port Number**. This is the port number of the Oracle server where the Star database resides. The default is **1521**.
3. In the **Service Name** field, enter the Oracle TNS Service Name of the Star database. The Service Name is used to connect to the database via JDBC.
4. The **JDBC URL** field is automatically filled in based on the information you entered in the previous steps of this section. You cannot edit this field.
5. The **TNS Name** field is automatically filled in based on the information you entered in the previous steps of this section. You cannot edit this field.

Enter the Oracle Username and Password In the System section:

1. Enter the DBA Username. This is the username of the user who has DBA privileges for the Star database. The default name is **SYSTEM**.
2. Enter the **DBA Password**. This is the password of the user who has DBA privileges for the Star database.

Enter the connection information for the table owner In the Owner section:

1. Enter the **Star Username**. This is the username name of the user who will own the Star tables. This username does not currently exist. You must enter it to create it. The default is **STARUSER**.
2. Enter the **Star Password**. This is the password of the user who will own the Star tables.
3. In the **Confirm Password** field, enter the same password that you entered in step 2 to confirm the password.

See "Configuring Database Links" on page 51.

4 Click **Next** to go to the **LINKS** tab. Use the fields on that tab to configure the database links.

Configuring Database Links

Use the LINKS tab to enter the names of the database links to be created and used by the ETL process. A database link is a pointer that defines a one-way communication path from an Oracle Database server to another database server. The ETL process leverages the use of private database links to facilitate data transfer and to share information from one database to another.

The fields are pre-filled with the default values, which you can change if necessary. The following table shows the database links and their default values.

Database Link	Default Value
STAGE to PMDB	stage2pmdb
STAGE to ODS	stage2ods
STAGE to STAR	stage2star
STAR to STAGE	star2stage
ODS to STAGE	ods2stage

See "Configuring Java Virtual Machine, Bulk File Load, and Logging Settings" on page 52.

Click **Next** to go to the **Settings** tab. Use the fields on this tab to configure general settings for the P6 Reporting Database.

Configuring Java Virtual Machine, Bulk File Load, and Logging Settings

Use the **Settings** tab to choose the locations for the Java Virtual Machine (JRE path), the Bulk File Load files, and to select the level of logging.

Choose the Java Virtual Machine location and Maximum Java Heap Size In the Java Virtual Machine section:

1. Enter the path to the Java Virtual Machine (JRE path). Oracle recommends Sun JRE 1.6.0_18. The path must refer to a location on the local machine, where the P6 Reporting Database is installed.
2. Enter the Maximum Java Heap Size (MB) parameter. This value maps to the JVM –Xmx setting in the Java Runtime Environment settings. The default value is 1,024 MB. The minimum value is 512MB.

When changing this setting, the values must be in 512 MB increments.

Choose the Bulk File Load location In the Bulk File Load section, manually enter the path to the location for P6 Reporting Databases bulk load files, or use the Browse button to select its location.

The bulk load file location is the location where P6 Reporting Database stores files needed during processing. These files contain hierarchy and spread bulk load data. It is recommended that read and write privileges only be granted to users who will run the ETL or Incremental process.

When selecting the location, ensure that several gigabytes of free space are available, since these files can become very large, depending on the size of your database.

Choose the Logging Detail Level In the Logging section, use the drop-down list to choose the level of logging detail that you want to use. The following table lists and describes the logging detail level from which you can choose.

Logging Level	Description
Errors Only	Only logs errors and no other information.
Errors and Warnings	Only logs errors and warnings and no other information.
General Information	This is the default value. This logs errors, warning, and informational messages on the progress of each step.
Extra Debug Information	Provides all general information, errors and warnings. It provides more fine grained information on each step and scripts being executed.
Debug and Trace Information	Provides all general information, errors and warnings, and detailed output of each script, query, and connection being executed.

See "Configuring Date Range, Project Trend, and Fiscal Year Start Options" on page 54.

Click **Next** when finished to go to the **Options** tab. Use the Options tab to configure the Date Range, Project Trend, and Fiscal Year Start options.

Configuring Date Range, Project Trend, and Fiscal Year Start Options

Use the **Options** tab to configure the Data Range, Project Trend Interval, and Fiscal Year Start for your P6 Reporting Databases.

The date range sections allows users to specify the start and end date for the detailed spread data within your P6 Reporting Databases. The start date corresponds to the date your spread data will begin.

Any data that occurs outside of the start date will be lump summed on your start date. (For example, if the start date is set for January 1, 2010 any data in the Project Management database that occurs prior to January 1, 2010, will be lump summed on January 1, 2010.)

The end date is a "rolling" window that corresponds to a future date based on the date the ETL or Incremental process is run. (For example, if the end date is set to 1 year and Incremental update is executed on April 9, 2010, any data in my Project Management database that occurs after April 9, 2011 will be lump summed and placed on April 9, 2011.

Choose the Start and End Date options In the Date Range section:

1. Use the calendar icon next to the **Start Date** field to select the date on which you want your spread data to start.
2. For **End Date**, select a rolling interval based upon the date the ETL or Incremental process is run.

Choose the Project Trend Interval In the Project Trend section, choose the Interval from the drop-down list. This can be one of the following:

- Week
- Month
- Quarter
- Year
- Financial Period 1 (this is the Financial Period from the Project Management Database)
- Financial Period 2 (this is a custom Financial Period)
- Financial Period 3 (this is a custom Financial Period)

In order to use one of the Financial Periods, these must already have been defined.

The Project Trend interval corresponds to the interval in which your project history data is collected.

If you do not run your incremental process at the end of the interval, any data that occurred since the last time you ran the incremental process will be collected into the next interval.

For example, if you select Month as your Project Trend interval, and execute the incremental process on November 20, all project data from your previous incremental run, up to and including November 20, would be stored in the November interval. If you do not run your incremental process again until December 8th, all the data from November 21 through December 8th will appear within the December interval. It will not appear in the November interval, because there is no retrospective process for putting it into a previous interval.

Choose the Fiscal Year Start By setting the Fiscal Year Start, users can view data by Fiscal Year. If Fiscal year is not used, leave Fiscal Year Start at the default value of January 1.

In the **Fiscal Year Start** section:

1. Use the **Month** drop-down list to choose the month in which the Fiscal Year starts.
2. Use the **Day** drop-down list to choose the day in the month on which the Fiscal Year starts.

After you choose the Fiscal Year Start, click **Next** to go to the **Codes** tab. Use that tab to add Activity, Project, or Resource codes.

Configure Activity, Project, and Resource Codes

Use the Codes tab to choose the Oracle Business Intelligence (OBI) Activity, Project, and Resource dynamic code mappings that you will use for P6 Reporting Database. This tab has three subordinate tabs:

- Activity
- Project
- Resource

A maximum of 20 code mappings is allowed for each code type. For information on how these codes work, see the "Overview" section of the "Dynamic Codes" chapter in the *Oracle Primavera P6 Reporting Database User's Guide*.

Choose the Activity Codes Use the Activity tab to choose the Activity codes you want to use with P6 Reporting Database. These codes must already exist in the Project Management Database (PMDB).

Because activity codes can be defined for different areas of you Project Management database (Global, EPS, and Project), P6 Reporting Databases allows you to define the Scope in which these activity codes are used. The Activity tab has the following fields:

Field	Description
Code	Contains the Activity code number. When you choose an Activity code, this is assigned sequentially starting with number 1.
Scope	Use the drop-down list to choose one of the following: ■ Global ■ Global, EPS ■ Global, Project ■ Global, EPS, Project ■ Global, Project, EPS ■ EPS ■ EPS, Global ■ EPS, Project ■ EPS, Global, Project ■ EPS, Project, Global ■ Project ■ Project, EPS ■ Project, Global ■ Project, EPS, Global ■ Project, Global, EPS

Field	Description
Matching Criteria	This field can be used to select a code value from the Project Management database. In addition, this field allows the use of regular expression syntax for a more flexible code definition, if necessary
Name	This field corresponds to the code value in the Project Management database. If you leave this field blank, it automatically populates with an initial value. This field can be edited.
Description	This field corresponds to the Activity code description in the Project Management database. If you leave this field blank, it automatically populates with an initial value. This field can be edited.

To choose Activity codes:

1. Click **Add** on the Activity tab, and then click in the **Matching Criteria** column.
2. Choose the Activity code from the drop-down list.
3. Click **Scope**, and then choose the scope for the Activity code from the drop-down list.
4. Repeat steps 1 through 3 to add other Activity codes.

Choose Project Codes Use the Project tab to choose the Project codes you want to use with P6 Reporting Database. These codes must already exist in the Project Management Database (PMDB). Project codes are not global, and have no scope.

The Project tab has the following fields:

Field	Description
Code	Contains the Project code number. When you choose a Project code, this is assigned sequentially starting with number 1.
Matching Criteria	This field can be used to select a code value from the Project Management database. In addition, this field allows the use of regular expression syntax for a more flexible code definition if necessary.
Name	This field corresponds to the Project Code value in the Project Management database. If you leave this field blank, it automatically populates with an initial value. This field can be edited.
Description	This field corresponds to the Project Code description in the Project Management database. If you leave this field blank, it automatically populates with an initial value. This field can be edited.

To choose Project codes:

1. Click **Add** on the Project tab, and then click in the **Matching Criteria** column.
2. Choose the Project code from the drop-down list.
3. Repeat steps 1 and 2 to add other Project codes.

Choose Resource Codes Use the Resource tab to choose the Resource codes you want to use with P6 Reporting Database. These codes must already exist in the Project Management Database (PMDB). Resource codes are not global, and have no scope.

The following table describes the fields on the Resource tab.

Field	Description
Code	Contains the Resource code number. When you choose a Resource code, this is assigned sequentially starting with number 1.
Matching Criteria	This field can be used to select a code value from the Project Management database. In addition, this field allows the use of regular expression syntax for a more flexible code definition if necessary.
Name	This field corresponds to the Resource code value in the Project Management database. If you leave this field blank, it automatically populates with an initial value. This field can be edited.
Description	This field corresponds to the Resource code description in the Project Management database. If you leave this field blank, it automatically populates with an initial value. This field can be edited.

To choose Resource codes:

1. Click **Add** on the Resource tab, and then click in the **Matching Criteria** column.
2. Choose the Resource code from the drop-down list.
3. Repeat steps 1 and 2 to add other Resource codes.

After you are finished After you finish choosing Activity, Project, and Resource codes, click **Next** to go to the **Complete** tab.

Finishing the Configuration

On the Complete tab, click **Finish** to complete the configuration.

All the settings configured with the P6 Reporting Database configuration utility will be stored in the following location:

<installation path>\p6rdb\res\erdb.properties

This file is a Java properties file, which is a simple key = value storage file. For example:

db.stage.application.username=STAGEUSER

Execute the RUNETL file to Complete the Installation

After you complete all the installation and configuration tasks, execute the RUNETL.bat (or RUNETL.sh) file to complete the installation. To do this:

1. Go to the <installation directory name> directory.
2. Click RUNETL.bat (or RUNETL.sh) to execute the file.

Configure the Software for Microsoft SQL Server Systems

In this chapter

This chapter describes how to configure the Oracle Gateway to link the PMDB located on the Microsoft SQL Server.

It describes the process for configuring the Project Management database connection information when the PMDB is on a Microsoft SQL Server.

Configure the Oracle Gateway for a Specific Microsoft SQL Server Database

If your Project Management database is a Microsoft SQL Server database, do the following to configure the Oracle Gateway to use that database:

For information on installing the Oracle Gateway, see "Install the Oracle Gateway" on page 27.

1 Go to the <Oracle Gateway install directory>\dg4msql\admin folder.

- <Oracle Gateway install directory> is the directory where you installed the Oracle Gateway.
- The dg4msql\admin folder was created when you installed the Oracle Gateway.

2 Open the initdg4msql.ora file and edit the **HS_FDS_CONNECT_INFO=** parameter to be in the format:

HS_FDS_CONNECT_INFO=<servername>/<instancename>/<pmdbdatabase>

Where the < > brackets indicate the variables that you enter. Do not enter the brackets as part of the variable name.

*The **HS_FDS_CONNECT_INFO=** parameter should be all on one line. Because of the format restrictions of this document, it is shown on multiple lines.*

For example:

HS_FDS_CONNECT_INFO=win2k2/sqlserver/pmdb

The following example shows the parameter when an instancename is not specified:

HS_FDS_CONNECT_INFO=serverSQL//proj_pmdb

3 In the <Oracle Gateway install directory>, go to the ADMIN folder, and add a new TNSnames entry for each new SQLServer Gateway. For example:

dg4msql =

(DESCRIPTION=

(ADDRESS=(PROTOCOL=tcp)(HOST=<server name>)(PORT=1521))

(CONNECT_DATA=(SID=dg4msql))

(HS=OK)

)

dg4msql1 =

(DESCRIPTION=

(ADDRESS=(PROTOCOL=tcp)(HOST=ServerName)(PORT=1521))

(CONNECT_DATA=(SID=dg4msql1))

(HS=OK)

)

4 In the same directory, edit Listener.Ora, and add information for each necessary gateway. For example:

(SID_LIST=

(SID_DESC=

(SID_NAME=dg4msql)

(ORACLE_HOME=C:\product\11.1.0\tg_1)

(PROGRAM=dg4msql)

)

(SID_DESC=

(SID_NAME=dg4msql1)

(ORACLE_HOME=C:\product\11.1.0\tg_1)

(PROGRAM=dg4msql)

)

(SID_DESC=

(SID_NAME=dg4msql2)

(ORACLE_HOME=C:\product\11.1.0\tg_1)

(PROGRAM=dg4msql)

)

)

5 Stop any existing Listeners on the Oracle Gateway server.

6 If you need to connect to other Oracle instances, you must configure the TNS Names in the directory where you installed the Oracle Gateway.

7 Start the Gateway Listener.

Gateway Parameters

The necessary Stage tablespace size is 30 GB, while allowing an extent size of uniform 2MB. The following Initialization parameters were set for the Gateway:

HS_RPC_FETCH_SIZE=1000000

HS_ROWID_CACHE_SIZE=10000

HS_FDS_ROW_SIZE=50000

For a dataset with similar statistics:

TASK - 6 million rows

TASKACTV - 15 million rows

TASKRSRC - 9 million rows

UDFVALUE - 3 million rows

RSRCHOUR - 50 million rows

PROJWBS - 2 million rows

Configuring the Oracle Gateway for your Oracle character set

When configuring your Oracle Gateway, set HS_LANGUAGE for the Oracle character set of your instance:

1. On the gateway machine, go to the gateway install directory.

   (for example, C:\product\11.1.0\tg_2\dg4msql\admin)

2. Edit the initdg4msql ini file, and add the following parameter specific to your Oracle dataset. Depending on your character set, either add the following or adjust for UTF8:

   HS_LANGUAGE=american_america.WE8ISO8859P15

   or add all of the following:

   HS_NLS_LENGTH_SEMANTICS=CHAR

   HS_FDS_CHARACTER_SEMANTICS = TRUE

   HS_KEEP_REMOTE_COLUMN_SIZE=ALL

3. Save the initdg4msql ini file, and restart the Gateway listener.

Configure the Microsoft SQL Server Connection

See "Install the Oracle Gateway" on page 27.

Use this section if your PMDB is on a Microsoft SQL server. You must have already installed the Oracle Gateway software before installing the Primavera P6 Reporting Database software.

Enter the Project Management Database connection settings In the Connection Settings -(Oracle Gateway) section:

1. Mark the **PMDB is on SQL Server** checkbox.
2. Enter the **Host Name** (in the field at the top of the dialog box). This is the machine name or IP address of the Oracle server on which you want to create the Oracle Gateway.
3. Enter the **Port Number** (in the field at the top of the dialog box). enter the Service name of the Oracle server on which you want to create the Oracle Gateway.

The JDBC URL and TNS fields at the top of this dialog box are read-only fields.

4. Enter the **Database Name**. This is the name of the PMDB on the Microsoft SQL Server. This database must already exist.
5. Enter the **Host Name**. This is the full SQL Server instance name of the Microsoft SQL Server where the Project Management database resides. For example:

   SQLServerName\databaseInstanceName

If there is a named database instance, both the server name and the instance name must be included.

6. Enter the **Port Number**. This is the port number of the Microsoft SQL Server where the Project Management database resides. The default is **1433**.
7. The **JDBC URL** field is read-only. You cannot edit this field.

In the Privileged section:

1. In the **Username** field, enter the Privileged user logon name for the PMDB on the Microsoft SQL Server.
2. In the **Password** field, enter the Privileged user logon password for the PMDB on the Microsoft SQL Server.

See "Configure the Oracle Stage Database Connection" on page 45.

3 Click **Next** to go to the **Stage** tab. Use the fields on that tab to configure the Stage database connection settings, and Oracle connection settings for the Stage database. From this point on, follow the steps described in the Configure the Software for Oracle Systems chapter, starting with the Configure the Oracle Stage Database Connection section.

Upgrade P6 Reporting Database to the Latest Version

In this chapter

This chapter describes the process for upgrading to P6 Reporting Database R.2 from P6 Enterprise Reporting Database 6.1, 6.2, or 6.2.1 for Oracle 10g and 11g.

There is no upgrade path if P6 Reporting Database is installed on a Microsoft SQL Server system.

Upgrade Installation If the Previous Version Included Star

Use the following procedure to upgrade to the latest version if the previous version of P6 Reporting Database was installed to include Star.

See "Install the P6 Reporting Database Application" on page 39.

See "Configure the Software for Oracle Systems" on page 43.

1. Follow the installation procedures in the "Install the P6 Reporting Database Application" chapter, and install P6 Reporting Database to the same location where your previous version is installed.
2. Follow the steps in the "Configure the Software for Oracle Systems" on page 43 to configure the P6 Reporting Database for Oracle.

There is no upgrade path if P6 Reporting Database is installed on a Microsoft SQL Server system.

3. Drop the following user:

   Drop user prmcdc cascade;

4. When the installation is complete, go to the **\scripts** folder, and run **upgrade.bat** (or **upgrade.sh** when upgrading from a non-windows system) to upgrade your Oracle schema for P6 Reporting Database to the latest version.
5. Go to the **\scripts** folder, and run **upgrade_star.bat** (or **upgrade_star.sh** when upgrading from a non-windows system).
6. In the **\scripts** folder, run **incremental.bat** (or **incremental.sh** when upgrading from a non-windows system).

Upgrade Installation If the Previous Version Did Not Include Star

Use the following procedure to upgrade to the latest version if the previous version of P6 Reporting Database was installed without including Star.

See "Create the Star Tablespaces" on page 35.

1 Create the Star Tablespaces.

See "Install the P6 Reporting Database Application" on page 39.

2 Follow the installation procedures in the "Install the P6 Reporting Database Application" chapter, and install P6 Reporting Database to the same location where your previous version is installed.

See "Configure the Software for Oracle Systems" on page 43.

3 Follow the steps in the "Configure the Software for Oracle Systems" on page 43 to configure the P6 Reporting Database for Oracle.

There is no upgrade path if P6 Reporting Database is installed on a Microsoft SQL Server system.

4 Drop the following user from wherever the PRMCDC instance was set up:

```
Drop user prmcdc cascade;
```

5 When the installation is complete, go to the **\scripts** folder, and run **create_star.bat** (or **create_star.sh** when upgrading from a non-windows system) to create the staruser and database links.

6 In the **\scripts** folder, run **upgrade.bat** (or **upgrade.sh** when upgrading from a non-windows system) to upgrade your Oracle schema for P6 Reporting Database to the latest version.

7 In the **\scripts** folder, run **loadstar.bat** (or **loadstar.sh** when upgrading from a non-windows system).

8 In the **\scripts** folder, run **incremental.bat** (or **incremental.sh** when upgrading from a non-windows system).

Part 3

Administrative Tasks

In this part

Read the chapters in this part to learn how to perform the administrative tasks for the P6 Reporting Database. Administrative Tasks describes limiting access to the ERDB.Properties file, clear and refresh data, scheduling or manually launching the incremental update. ODS Security Configuration describes ODS security configuration. Star Security Configuration describes Star security configuration, including changing adding a new Star user, setting up Star security, and filtering out inactive resources. BI Publisher Administration Tasks describes configuring the JDBC connection, and how to configure BI Publisher Security. Install and Configure OBI describes how to install and configure OBI to use rpd, and for use with the Catalog. Install and Configure Financial Periods describes how to install and configure multiple Financial Periods. Run the Configuration Utility describes how to run the configuration utility to reconfigure Settings, Options, and Codes after P6 Reporting Database is installed and configured. Utility Tables, Log Files, and Troubleshooting describes using Stage database utility tables to track the ETL process, and describes log files. Uninstalling P6 Reporting Database describes how to uninstall P6 Reporting Databases.

Administrative Tasks

In this chapter

Describes the general administrative tasks, including how to secure the ERDB.properties file, how to clear and refresh data, and how to schedule or manually launch an incremental database update.

Securing the ERDB.properties file

Ensure that only the user running the P6 Reporting Database scripts or processes has access to the ERDB.properties file, which is located in the following folder:

<installation path>\p6rdb\res

Only trusted users should have access to these files or folder.

File system protection can be set on all of the supported operating systems. Based on the settings applied, the **\res** folder can be password protected or hidden. A new user can be created with the least amount of permissions to this file and folder. Do not give any other user access to this location.

For options for operating system-specific security, either contact your local administrator or search for file system security for your specific operating system.

Clear and Refresh the Data

There are times when it may be necessary to clear and refresh all the data in the Stage, ODS, and Star databases. It is not necessary to uninstall and reinstall the P6 Reporting Database application to accomplish this task.

Login to the P6 Reporting database instance with a user account that has the **Drop User** system privilege (such as System), and run the following commands:

```
drop user stageuser cascade;

drop user odsuser cascade;

drop user staruser cascade;
```

The preceding assumes that you chose the default usernames (STAGEUSER, STARUSER, and ODSUSER) during the installation. If you choose different names, substitute those names for the defaults.

Dropping these users will remove all data from the P6 Reporting Database instance. You can rerun one of the following files to populate the Stage, ODS, and Star databases with the Project Management database information:

- runetl.bat (for Oracle on a Windows system)
- runetl.sh (for Oracle on a Linux, Solaris, or AIX system)

Caution: *Deleting the Star database will also delete the project History Fact data that was accumulated.*

Scheduling the Incremental Database Update

Using a system task scheduler to schedule recurring ETL jobs To keep the ODS and Star databases current, the incrremental ETL process must be run periodically. Typically, this is done nightly during off hours.

Schedules exist for both Windows and non-windows operating systems. For Windows operating systems, the Windows Task Scheduler can be used. For non-Windows operating systems, this is done through a cron job using the Crontab command. Please refer to your operating system documentation for specifics on how to configure incremental to run as a recurring job.

Caution: *When configuring the scheduler, it is recommended that you select the option to not start the next job until the previous job has completed.*

Manually Launching the Incremental Database Update

To launch the incremental database update for ODS and Star, execute one of the following files on the machine where Stage is installed:

- incremental.bat (Oracle on a Windows platform)
- incremental.sh (for Oracle on a non-Windows platform)

The account used to launch the file must have administrative privileges on the machine.

ODS Security Configuration

In this chapter

This chapter describes the ODS security configuration tasks. These include adding a new user and deleting an existing user.

Adding a New ODS User

User-level security and username restrictions In order for the ODS to properly implement P6 application-level project and cost access, a database-level user will be created in ODS if marked as a reporting user. The username must conform to the following restrictions:

- It must be 30 or less characters in length.
- It must only consist of alphabetic or numeric characters.
- It must not contain any special characters (such as @ # $ % , ^ & * . ( ) - + \ / : _ ; | < >, etc.).
- It must not contain any embedded spaces.
- It must start with a letter, not a number.

  User names created in Project Management for users who will also use P6 Reporting Database cannot start with a numeric character. They must start with an alphabetic character. User names that start with numbers cannot be used as database-level login names.

- It must have at least one character.

These restrictions are required because of the way security must be implemented in the ODS and applied to Oracle.

Database views are created that filter the users' access to only those tables, rows, and fields to which they should have access. Because these views must be owned by the actual database login name, the full view name includes the database login name.

Oracle does not allow a view to have an embedded space in the login name. Therefore, it is not possible to create a view for a user that has an embedded space in the name. If a user does have an embedded space in his or her login name, an ODS database level login will not be created. In that case, the user will not have access to the ODS database.

If the user is an application user in the P6 Project Management database, and set as a reporting user (report_user_flag='Y'), a database login for the user will be created in the Oracle instance of the ODS database. This user will have the same password as the application user in the P6 Project Management application.

See "User-level security and username restrictions" on page 84.

Adding the user When adding a new user, the username must conform to the format restrictions listed earlier in this section, under "User-level security and username restrictions."

To add a new user for the ODS, perform the following steps:

For information on adding a new Project Management user, see the *Project Management Administrator's Guide*, or the *Project Management Online Help*.

For detailed information on ODS security, see the *P6 Reporting Database User's Guide*.

1 Login to the Project Management database via Project Management client, and add a new user.

This username must start with an alphabetic character. It must also conform to the username format restrictions described in "User-level security and username restrictions" on page 84.

2 Verify that the new user was created in the Project Management database.

3 Run a query to use the Project Management database.

4 Execute the following query:

Update Users set report_user_flag = 'Y' where user_name = 'username'

*For Oracle, when setting report_user_flag = 'Y', the letter **Y** must be a capital (upper case) Y. If the letter Y is not an upper case Y, the user will not be created in ODS.*

*In the preceding query, replace the text **username** with the name of the user you are adding. Do not delete the single quotation marks around username.*

PMDB administrative user access is required to run the query.

These users will also be created automatically whenever the incremental process runs, as long as the report_user_flag has been set.

5 On the machine where the Stage database resides, run one of the following files:

- incremental.bat (for Oracle on a Windows platform)
- incremental.sh (for Oracle on a non-Windows platform)

This file is in the <P6 Reporting home>\p6rdb\scripts directory. This adds the user to the ODS database, creates Views for the user, and adds the user to Server Logins.

Modifying User Access in ODS

Users can only see the types of project-related data and resources in ODS to which they have access in the P6 Project Management database.

For example, a user's permission to view costs in the ODS is determined by whether their username in Project Management has the "View Project Costs/Financials" privilege. In the ODS, users who do not have this privilege will see the word *null* in place of the value in fields that contain cost information that is restricted by this privilege.

Use the following steps to give a user the ability to view cost information.

1. In the Project Management application, access the Admin, Security Profiles dialog box.
2. To provide access to cost information, ensure that the "View Project Costs/Financials" privilege checkbox is marked in the users project profile.
3. There is a global profile privilege that will enable users to view resources costs if the user has resource access. To enable this feature, ensure that the **View Resource and Role Costs** checkbox is marked.
4. On the machine where the Stage database resides, run one of the following files:
   - incremental.bat (for Oracle on a Windows platform)
   - incremental.sh (for Oracle on a non-Windows platform)

   This file is in the <P6 Reporting Database home>\p6rdb\scripts directory.

Deleting an ODS User

To delete a user from ODS, do the following:

For information on deleting a Project Management user, see the *Project Management Administrator's Guide*, or the *Project Management Online Help*.

For additional information on ODS security see the *P6 Reporting Database User's Guide.*

1. In the Project Management Database set the report_user_flag ='N'. Connect as the PMDB administrative user (ex. Admuser), and run update users set report_user_flag = 'N' where user_name = 'deleteUsersName' or if the user is no longer necessary it can be deleted from Project Management Database.
2. On the machine where the Stage database resides, run one of the following files:
   - incremental.bat (for Oracle on a Windows platform)
   - incremental.sh (for Oracle on a non-Windows platform)

   This file is in the <P6 Reporting Database home>\p6rdb\scripts directory. This will remove the user's Views from ODS.
3. The Oracle ODS user that was created will still exist in the ODS instance. This user will be disconnected from any views pertaining to ODS tables. This user can be dropped from the ODS instance by executing the following query as the Oracle Instance system account or a user with permissions to drop other database users:

   Drop user deleteUserName cascade;

Star Security Configuration

In this chapter

This section describes the Star security configuration. These include adding a new Star user, setting up security, and filtering out inactive resources.

Adding a New Star User

In P6 Project Management Do the following:

1. Add a new user, and give the user module access to any of the following modules. Be sure to grant the user the necessary OBS, cost, and resource access:
   - Project Management
   - Web Access Portfolios
   - Web Access Projects
   - Web Access Resources
2. Run the full ETL process or the incremental process.

In Oracle Business Intelligence (OBI) Do the following:

1. Open the OraclePrimaveraP6Analytics.rpd with the OBI Administration tool.

The default password for the OraclePrimaveraP6Analytics.rpd file is PMADMIN.

2. Add the matching user name by accessing **Manage**, **Security** and adding the users to the users section. The OBI password does not have to match P6 Project Management password, but the user name must match.

If OBI and P6 Project Management are both configured to use LDAP authentication, users do not need to be created manually. Only the LDAP server needs to be added to OraclePrimaveraP6Analytics.rpd by accessing Manage, Security. See the OBI documentation information about configuring LDAP for OBI.

Setting Up Star Security

In order for users to have access to the Star database, they must have module access rights configured in the Project Management module. OBI Users must already be configured in OBI.

The following table describes the Star security:

Type	Description
OBS Access	Users who have OBS access in the Project Management module will have OBS access in OBI.
View Project Costs/ Financials	Users who have access to projects in the Project Management module, and who have this privilege set, will have the same privilege in the Star database.
Resource Access	Resource access can be set to one of the following: ■ **All resource access** - The user will have unrestricted access to resources. ■ **None** - The user cannot access any resources. ■ **Specific resource access** - The user can only access a specific resource.

Filtering Out Inactive Resources

Filtering Out Inactive Resources By default, inactive resource are filtered out of the Star tables. If inactive resources were included, they would also be included in the spread data and in other dimension tables. It may not be necessary to process this extra resource assignment information.

If you do want to include inactive resources in the Star tables, update the following setting in the erdb.properties file, and set the =false parameter to =true:

Star.utilization.include.inactive.rsrc=false

BI Publisher Administration Tasks

In this chapter

This section describes how to configure the JDBC connection, and how to configure BI Publisher Security.

Overview

BI Publisher is a reporting utility that can be used with the ODS. For complete overview information about BI Publisher, go to the following web site:

http://www.oracle.com/technology/products/xml-publisher/index.html

Configure the JDBC Connection

Logon to the BI Publisher, and do the following:

1. Click the **Admin** tab.
2. Under Data Sources, click the **JDBC Connection** link.
3. Click the **Add Data Source** button.
4. Add the database connection information, and save the settings.

Configure BI Publisher Security

Logon to BI Publisher, and do the following:

1. Click the **Admin** tab.
2. Under Security Center, click the **Security Configuration** link.

Configure the Local Superuser Use the Local Superuser section to configure the name and password of the Local Superuser.

1. Mark the **Enable Local Superuser** checkbox.
2. In the **Superuser name** field, enter the Superuser's name.
3. In the **Password** field, enter the Superuser's password.

Configure the Security Model Oracle BI Publisher allows an administrator to setup a security model based on roles and permissions. These roles and permissions can be enforced on folders containing reports created from ODS data. For more information, see **Defining a Security Model** in the Oracle Business Intelligence Publisher online help.

Use the Security Model section to configure the type of security to use.

1. From the **Security Model** drop-down list, choose the model to use. This can be:
   - BI Publisher Security
   - Oracle BI Server
   - Oracle Database
2. Enter the **Connection String**. This is the connection string used to connect to the JDBC Data Source you previously configured.

See "Configure the JDBC Connection" on page 95.

Install and Configure OBI

In this chapter

This section describes how to install and configure Oracle Business Intelligence (OBI). It also describes where to put the Primavera P6 Analytics files, for use with OBI.

Overview

Oracle Business Intelligence (OBI) is a comprehensive suite of Business Intelligence foundation and applications designed to enable the insight-driven enterprise. It integrates data from multiple enterprise sources, and transforms it into key insights that enable strategic decision-making, drive continual business process improvements, and promote alignment across the enterprise.

The Oracle Business Intelligence infrastructure consists of servers, programs, and tools used to build Oracle Business Intelligence applications. The Oracle Business Intelligence product includes an installer program that can install the complete OBI suite, or one or more OBI product components.

For information about the Business Intelligence & Data Warehousing Technology Center, go to the following web site:

http://www.oracle.com/technology/tech/bi/index.html

For information about the Business Intelligence & Data Warehousing documentation, go to the following web site:

http://www.oracle.com/technology/documentation/bi_ee.html

Installing OBI

For information on installing the Oracle Business Intelligence, go to the following web site:

http://www.oracle.com/appserver/business-intelligence/index.html

Configuring OBI to Use RPD

Install Oracle Business Intelligence, and then do the following:

1. Stop OBI Services (if running).
2. Add the stardw TNSNAMES.ORA entry that references your Star. This is in the form:

```
stardw.world=(DESCRIPTION =(ADDRESS_LIST =(ADDRESS =
(PROTOCOL = TCP)(HOST =##.###.###.##)(PORT=####)))
(CONNECT_DATA =(SID=@@@)))
```

   In the preceding entry:

   - The entry must start with **stardw.world**.
   - For **HOST=##.###.###.##**, enter the IP address for the Star database in place of ##.###.###.##.
   - For **PORT=####**, enter the port number where the Star database resides in place of ####.
   - For **SID=@@@**, enter the SID for the Star database instance in place of @@@.

3. If the Star schema username is the same as the default username (STARUSER), copy the P6 Analytics repository .rpd to the local repository by copying the following, and then go to step 5. Otherwise, proceed to step 4:

   \OraclePrimaveraP6Analytics.rpd

   To:

   \OracleBI\server\Repository\OraclePrimaveraP6Analytics.rpd

4. If the Star schema username is different than the default username (STARUSER), do the following:

   a) Open the OraclePrimaveraP6Analytics.rpd file using the Oracle BI Administration Tool.

   b) Access Manage, Variables.

   c) Under the 'Repository' Node, select 'Variables'.

   d) Locate the variable DW_USERNAME. Double click this variable and proceed with the checkout.

e) When the edit dialog opens, modify the Default_Initializer with the correct STAR user (for example, STARUSER_1).

5 Modify the NQSConfig.INI file as follows:

```
\OracleBI\server\Config\NQSConfig.INI
[ REPOSITORY ]
Star = OraclePrimaveraP6Analytics.rpd, DEFAULT;
[ CACHE ]
ENABLE = NO;
```

6 Start OBI Services.

7 Launch the following file:

\OracleBI\index_bi_ee.html.

Updating the OraclePrimaveraP6Analytics.rpd for P6 Web Access

If you are using P6 Web Access, and want to launch it from P6 Reporting Database, you must update the following file with the correct URL and context root for P6 Web Access:

OraclePrimaveraP6Analytics.rpd

The following steps are only necessary in that case.

1 Open OraclePrimaveraP6Analytics.rpd with the BI Administrator Tool.

2 Access manage, variables.

3 Under the **Repository Node**, select **Variables**.

4 Locate the variable **DW_P6_LINK_BASE_URL**, double click that variable, and proceed with the checkout.

5 When the edit dialog opens, modify the Default_Initializer with the correct P6 Web Access URL (for example, http://p6webaccess:7001/primaveraweb).

Configuring OBI with the Catalog

1. Stop all OBIEE Services (OC4j, Oracle AS, Oracle BI Presentation Server, Oracle BI Java Host, and Oracle BI Server).
2. Open the instanceconfig.xml located in \OracleBIData\web\config\
   a) Find the <CatalogPath> setting (for example: <CatalogPath>C:/OracleBIData/web/catalog/P6Analytics</CatalogPath>).
   b) Copy the Catalog to this location.
   c) Under the <CatalogPath> setting, add the following attributes:

      <DefaultStyle>oraclep6</DefaultStyle>

      <DefaultSkin>oraclep6</DefaultSkin>

      <DashboardMaxBeforeMenu>1</DashboardMaxBeforeMenu>
3. Copy the sk_oraclep6 and the s_oraclep6 folders to the following 2 locations:

   \OracleBI\oc4j_bi\j2ee\home\applications\analytics\analytics\res

   \OracleBI\web\app\res
4. Restart OBIEE services in the following order:
   - Oracle BI Presentation Server
   - Oracle BI Java Host
   - Oracle BI Server
   - OC4J

The following are the default Dashboards supplied with P6 Reporting Database:

- Main
- Portfolio Analysis
- Project Earned Value
- Project Health
- Resource

Install and Configure Financial Periods

In this chapter

This section describes how to install and configure multiple Financial Periods.

Installing Financial Periods

P6 Reporting Databases has the ability to use 2 additional financial periods. To add the additional Financial Periods to your P6 Reporting Databases, perform the following steps:

1. You must have previously run the full ETL process.
2. Connect to your STAR database instance with the STARUSER account.
3. Run the following query:

   ```
   update w_day_d set fin_period_2 = CHR(64 + cal_month)||'-
   '||cal_year;

   update w_day_d set fin_period_3 = CHR(64 + cal_month)||'-
   '||cal_year;
   ```

The preceding queries should each appear on one line. Format restrictions of this document prevent them from doing so.

4. Commit the above changes.
5. Run the Incremental ETL process.

Configuring the OBI RPD File for Financial Periods

Once you complete the above steps, you will need to configure your OBI RPD file to include the newly added Financial Periods. To configure your OBI RPD file, perform the following steps:

1. Open your OraclePrimaveraP6Analytics.rpd in the Oracle BI Administration Tool.
2. On the far right section (Physical), navigate to the W_DAY_D table.
3. Highlight the FIN_PERIOD_2 and FIN_PERIOD_3 fields, drag them into the middle section (Business Model and Mapping), and release them in the Dim – Date dimension.
4. After FIN_PERIOD_2 and FIN_PERIOD_3 appear in the Business Model and Mapping section under the Dim – Date dimension, you can drag them to the left section (Presentation) where you want them to appear in OBI. You can also rename them here, so they display as you require.
5. Save the OraclePrimaveraP6Analytics.rpd file.

Run the Configuration Utility

In this chapter

This section describes how to run the configuration utility to reconfigure Settings, Options, and Codes after P6 Reporting Database is already installed and configured.

Overview

This section describes where to find the information you need in order to change the following settings and options:

- Java Runtime Environment location
- Bulk file Load location
- Logging detail level
- Start and End dates
- Project Trend Interval
- Fiscal Year Start

After P6 Reporting Database is installed and configured, it may be necessary to do the following:

See "Resetting Options" on page 112.

- Change Java Runtime Environment, Bulk File Load, or Logging settings

See "Changing Settings" on page 111.

- Change the Date Range, Project Trend, or Fiscal Year Start options

See "Choosing Activity, Project, or Resource Codes" on page 113.

- Delete, or choose additional, Activity, Project or Resource codes.

These can be changed by running **config.cmd** (or config.sh in a non-Windows environment). When you run the utility, you will only be able to make changes to fields on the following tabs:

- Settings
- Options
- Codes

Fields on the PMDB, Stage, ODS, Star, and Links tabs will not be available for change.

Launching the Configuration Utility

The configuration utility should be access-control protected, and should be under administrative control.

To launch the configuration utility, do the following:

1. Locate the folder where P6 Reporting Database is installed.
2. Run the **config.cmd** command (or config.sh in a non-Windows environment). You should now see the **Settings** tab on the configuration utility.
3. If the Settings tab is not the one you want, click the appropriate tab (**Options** or **Codes**).

Running config.cmd to do a complete data refresh If it is necessary to do a complete refresh of all data, you can run the configuration utility from the command line in the following format:

```
config.cmd FULL
```

If you make changes to connections settings when running the configuration utility in FULL mode, it may require a full ETL run.

Changing Passwords

If you need to change the passwords for stageuser, odsuser, or staruser you must run the configuration utility in FULL mode (see “Launching the Configuration Utility” on page 109 for information on launching this utility).

See “Installation Procedure” on page 41 for information on running setup.exe.

You cannot change passwords by running config.cmd because all connection information fields cannot be edited in config.cmd.

Changing Settings

After launching the configuration utility, you should see the Settings tab. Use the fields on this tab to reset the following:

- Java Runtime Environment location
- Bulk File Load location
- Logging detail level

For information on using the Settings tab, see "Configuring Java Virtual Machine, Bulk File Load, and Logging Settings" on page 52.

After you finish changing options, you can do the following:

- Click the **Options** tab if you want to make changes for the Date Range, Project Trend, or Fiscal Year Start fields.
- Click the **Codes** tab if you want to change, or choose additional, global Activity codes, or Project or Resource codes.
- Click **Finish** if you are finished making changes.

Resetting Options

You can use the fields on the Options tab to reset the following:

- Start and End Dates.
- Project Trend Interval.
- Fiscal Year Start

For information on using the Options tab, see "Configuring Date Range, Project Trend, and Fiscal Year Start Options" on page 54.

After you finish changing options, do the following:

- Click the **Settings** tab if you want to changes the Java Virtual Machine or the Bulk File Load location, or change the Logging detail level.
- Click the **Codes** tab if you want to make changes for the global Activity codes, or for the Resource or Project codes.
- Click **Finish** if you are finished making changes.

Choosing Activity, Project, or Resource Codes

You can use the fields on the Codes tab to delete, or choose additional, global Activity codes, or Project or Resource codes.

For information on using the **Codes** tab, see **"Configure Activity, Project, and Resource Codes"** on page 56**.**

After you finish changing Activity, Project, or Resource codes, you can do the following:

- Click the **Settings** tab if you want to changes the Java Virtual Machine or the Bulk File Load location, or change the Logging detail level.
- Click the **Options** tab if you want to make changes for the Date Range, Project Trend, or Fiscal Year Start fields.
- Click **Finish** if you are finished making changes.

Utility Tables, Log Files, and Troubleshooting

In this chapter

This chapter describes how to use Stage database utility tables to track the ETL process. It describes P6 Reporting Database log files that can provide information about the installation and daily operation of P6 Reporting Database.

In case a problem occurs, it tells where to get help if the log files do not provide sufficient information.

Utility Tables in the Stage Database

During the ETL process, there are several tables that are generated in the Stage database that can be useful in tracking the progress of the current ETL. Because these tables always accumulate rows, they can also be useful in providing historical information about previous ETL runs. These tables reside in the Stage database only.

ETL_ProcessMaster Table This table (shown in the following example) provides the history of ETL process runs. The start date and end date are shown, as well as the type of process.

- ProcessType=FULL indicates the full ETL process
- ProcessType=INCR indicates the incremental ETL process.

Process ID	ProcessStartDate	ProcessEndDate	ProcessType
12345	2007-09-15 14:45:39.683	2007-09-15 16:11:10	FULL
12346	2007-09-17 09:46:37.183	2007-09-17 10:05:34	INCR

ETL_ProcessInfo Table This table (shown in the following example) provides the details of a particular ETL process run. For each step in the ETL process, an entry is logged to this table with an informational message. The ProcessId field in this table can be joined to the ProcessId in the ETL_ProcessMaster table.

The Rows column shows the number of rows that were processed.

ProcessID	InfoDate	ProcessName	InfoMsg	InfoType	TableName	Rows
4539	2007-09-15 15:51	ETLCalc	Full, API) DAO Completed without errors in 0.125 seconds	PROGRESS	PROJECT RISK	21
4540	2007-09-15 15:51	ETLCalc	Full, API) DAO Completed without errors in 0.406 seconds	PROGRESS	EPS	10
4541	2007-09-15 15:51	ETLCalc	(Full, API) DAO Completed without errors in 5.5 seconds	PROGRESS	WBS	96

ProcessID	InfoDate	ProcessName	InfoMsg	InfoType	TableName	Rows
4542	2007-09-15 15:51	ETLCalc	Full, API) DAO Completed without errors in 0.109 seconds	PROGRESS	RESOURCES	41
4543	2007-09-15 15:51	ETLCalc	Full, API) DAO Completed without errors in 0.094 seconds	PROGRESS	RESOURCE CURVE	12

Changes made between Incremental runs The logs capture changes that have made between Incremental runs. For changes made between Incremental runs, the logging system populates the InfoMsg column with the details on the update, example:

actv_code_id=>3500, Operation=>Insert,SKEY=>895

ETL_ProcessException Table This table shows exceptions (error) conditions that occurred during the ETL process. For each ETL run, any exceptions that occur will be logged into this table. The ProcessId field can be joined with the ProcessId of the ETL_ProcessMaster. The fields available in the ETL_ProcessException are:

Field	Description
ProcessId	The ID identifying the process,
ExceptionDate	The timestamp of when the exception occurred.
ProcessName	The name of the process that failed.
ExceptionDescription	The text description of exactly what failed within the process.
ExceptionLevel	The level of the exception.
PMDBTableName	The name of the PMDB table (if applicable) that was being processed.
ODSTableName	The name of the ODS table (if applicable), that was being processed
PKEY	The Primary key (if applicable) to the row being processed.
ProjectId	If the error occurred in the context of processing project rows, this will be Project Object Id of the project.

etl_projectChanges This table holds project IDs for all projects that have changed since the last update, and that need to be reprocessed.

etl_parameter This table stores settings used by the ETL process. The content of the erdb.properties file is also written into this table during a full or incremental run of the ETL process.

W_OBI_EVENT_S table In the NQSCONFIG.ini file, if [CACHE] ENABLE = YES, and an Answers request is created, the values are cached. If the values in the Answer request are changed in the Project Management database, the old values can remain in the Answers request. The Answers request will not reflect the changes made in the Project Management database. This is because the cache is still using the old values for the request.

The W_OBI_EVENT_S table tracks updates, and enables a cache clearing interval to be set. By default, an interval of 20 minutes is set. The W_OBI_EVENT_S table will clear the cache for data recently updated during an incremental run. The setting can be changed in the OBI administration by doing the following:

1. Log into the RPD, and go to Tools, Utilities, Oracle BI Event Tables, Execute.
2. Under Event Tables, select **W_OBI_EVENT_S**. You can then set the frequency for clearing the cache.

The queries being executed by this event can be viewed in the NQQuery.log file in the <Obi Installation directory>\server\log. This is where you can see the frequency being enforced.

Log Files

P6 Reporting Database creates extensive log files for each file that is run during the installation process and for each run of the incremental update. The log files are stored in a 'log' folder in the root of the P6 Reporting Database installation location.

The log files contain detailed information that you should inspect after running each file in the installation process, and after running the incremental process.

Log files The following lists the log files, identifies when they are created, and gives a brief description of their contents:

File	Description
ETLInit.log	Created when runetl.bat (or Runetl.sh) or Incremental.bat (or Incremental.sh) are run. Contains results of the DAO initialization at the beginning of the ETL Process.
ETLprocess.html	Created when runetl.bat (or Runetl.sh) is run. Contains results of the processes run to create the users, tables, and transfer of data. Derived from the ETL_Master, ETL_ProcessInfo, and ETL_Exception tables.
ETLprocess.log	Created when runetl.bat (or Runetl.sh) is run. Contains results of the processes run to create the users, tables, and transfer of data. There can be additional etlprocess.log-1 if runetl has been run multiple times without deleting original logs. New logs will be created, and old logs will be renamed.
Incremental.html	Created when Incremental.bat (or Incremental.sh) is run. Contains the details of the SQL commands run to perform the incremental updates. Derived from the ETL_Master, ETL_ProcessInfo, and ETL_Exception tables.
Incremental.log	Created when Incremental.bat (or Incremental.sh) is run. Contains the details of the SQL commands run to perform the incremental updates.

Troubleshooting

P6 Reporting Database logs all progress information in **.log** files in the "log" directory under the P6 Reporting Database root. These log files contain information about the installation, and also about the daily operation of P6 Reporting Database. If an error occurs, diagnostic information may be included with the log, which may help lead you to the resolution or to the file or process which caused the error.

To run the procedure files on Stage, Star, and ODS, run one of the following:

- Rebuildprocs.bat (in a Windows environment)
- Rebuildprocs.sh (in a non-Windows environment)

For detailed information about contacting Customer Support, see "Contacting Customer Support" on page 10.

If you have a question about using the P6 Reporting Database that you or your network administrator cannot resolve with information in the documentation or Help, please contact Customer Support.

Known issue with Oracle 10g - Row Counts in Incremental log are zero

If you are using Oracle 10g, there is an issue with row counts that are used in the ETL process. Because of this issue, some of the counts in the incremental log will appear to be zero, when in fact there are actually values. The dbms output that shows rows returned will always be zero when the bug is encountered.

In the incremental log, at the point when data is extracted, it shows how many rows were inserted or deleted. These will be zero, even if changes were made to the PMDB. New rows will be added during incremental process, but will not show any rows inserted or deleted.

This will not affect the integrity of the data in the data warehouse. This will only effect the logging. This issue has been fixed in Oracle 11g, and there is a patch available for Oracle 10g.

To see if there is a one off backport fix for your operating system, see Patch 4078618, Bug 4078618: SQL%ROWCOUNT% RETURNS ZERO WHEN THE TABLE IS IOT.

Uninstalling P6 Reporting Database

In this chapter

This chapter describes how to uninstall the P6 Reporting Database for Windows, HP-UX, Linux, Solaris, and AIX systems.

Uninstalling

To uninstall P6 Reporting Database, perform the following steps.

Due to the global nature of the Oracle Universal Installer (OUI), the OUI online help is not applicable for installing or uninstalling P6 Reporting Database or for references to the documentation. Instead, refer to the following for uninstalling instructions.

1 From the P6 Reporting Database physical media or download location, run one of the following depending on your system type:

- If you are uninstalling on a Microsoft Windows system,

  windows\Disk1\install\setup.exe

- If you are uninstalling on a non-Microsoft Windows system,

  <Operating System>\Disk1\install\runInstaller

  Where <Operating System> is either aix, HP-UX. Linux, or Solaris.

2 Click **Deinstall Products**.

3 Select the name that represents the P6 Reporting Database installation and click **Remove**.

You determined the name that represents the P6 Reporting Database installation when you installed the product.

4 If the name of the item to remove is correct, click **Yes** to confirm.

5 Click **Close**.

6 Click **Cancel** and then **Yes** to confirm.

7 If you are uninstalling on a Microsoft Windows system, delete the <*installation folder*>*p6rdb* folder,
where <*installation folder*> is the folder in which you installed P6 Reporting Database.

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