



**P6 Reporting Database Installation and Configuration Guide
Release 3.0**

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Oracle Primavera P6 Reporting Database Installation and Configuration Guide

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Before You Begin

This section provides an overview of P6 Reporting Database and P6 Analytics.

- ▶ P6 Analytics provides customers with an in-depth and comprehensive method for analyzing and evaluating their project performance, project history, and resource assignments and utilization.
- ▶ P6 Reporting Database works with the P6 EPPM database to provide a robust and powerful reporting solution.

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About P6 Reporting Database

P6 Reporting Database works with the P6 EPPM database to provide a robust and powerful reporting solution. With P6 Reporting Database, you can create day-to-day operational reports based on all aspects of your P6 EPPM data, through use of the P6 EPPM Extended Schema and the Star Schema (Star).

About the P6 EPPM Extended Schema

The P6 EPPM Extended Schema, and related Publication Services, provide near real-time reporting. They enable users to exercise more control over what data is calculated and stored, and the frequency at which this is done.

The ODS and Star databases are populated directly from new logical views that are part of the P6 EPPM Extended Schema. The P6 EPPM Extended Views allow P6 Reporting Database users to access BI Publisher reports directly from the P6 EPPM database.

For a more detailed overview of the P6 EPPM Extended Schema, see the P6 EPPM documentation.

About the Star Database

The Star database enables an organization to perform advanced business analysis on project and portfolio data. It supplies a dimensional schema that organizes P6 EPPM hierarchical relationships.

P6 Analytics enables the highest level of query efficiency and flexibility in data analysis. The Star database is designed to accumulate Project, WBS, and Activity data over time. This provides organizations with historical data for tracking trends and for advanced business intelligence.

About the Operational Data Store (ODS)

Note: The ODS became an optional component of P6 Reporting Database when the P6 EPPM Extended Schema was introduced in P6 EPPM R8.1. Oracle recommends using the P6 EPPM Extended Schema. You should use the ODS only when users do not require near real-time reporting, or if you need to move operational reporting from the transactional database to a data repository used strictly for reporting purposes.

The Operational Data Store portion of P6 Reporting Database is an optional relational database that supplies day-to-day, easy to understand operational views of the P6 EPPM database data.

Though the ODS is optional, it can still be used for supporting third-party reporting tools, off-line analysis, and consolidation of P6 data into larger corporate data warehouses.

P6 Reporting Database users can view the same Operational Breakdown Structure (OBS), project, cost, and resource data in ODS as they can in P6 EPPM.

The ODS database is populated from the P6 EPPM Extended Views.

About the STARETL Process

The STARETL process provides data movement between the P6 EPPM Extended Schema and STAR schema.

Use one of the following to run the STARETL process:

- ▶ staretl.bat (in a Microsoft Windows environment)
- ▶ staretl.sh (in a unix or Linux based environment)

This can be run manually, or scheduled to run as you require. See "About Scheduling" in the *P6 Reporting Database Installation and Configuration Guide* for more information about scheduling the processes to run.

About Data Sources

P6 Reporting Database 3.0 can collect and store data from multiple P6 database sources. P6 Reporting Database 3.0 supports P6 EPPM R8.1 or R8.2 as a primary data source. It also supports ODS 2.1; however, you cannot use ODS 2.1 as the primary data source. When you use P6 EPPM R8.1 or R8.2 as the data source, use the PX Reporting user (e.g., PxRptUser) as the account where the data source will extract data from P6 EPPM.

See **Multiple Data Sources in the Star Database** (on page 43) for more information.

About Scheduling

Decide when and how often to update the databases from the P6 EPPM extended schema. The database will undergo a full refresh when it is updated, but the historical trend data from previous periods will not refresh.

The process for updating the ODS and Star databases can be launched in the following ways:

- ▶ Manually when required.
- ▶ Scheduled to occur one time in the future.
- ▶ Scheduled to recur during regular intervals.

The files that launch the database refresh process are:


- ▶ `odsetl.bat` and `staretl.bat` on a Windows platform.
- ▶ `odsetl.sh` and `staretl.sh` on a non-Windows platform. For information on supported non-Windows platforms, see the *Tested Configurations* document.

They reside in the following folders of your P6 Reporting Database installation folder:

- ▶ `<installation folder>\ods`
- ▶ `<installation folder>\star`

To ensure that your P6 Reporting Database system has the latest data from the P6 EPPM extended schema, it is recommended that you run the data refresh process daily during non-peak hours.

Note: Allow sufficient time to complete the scheduled run of the database refresh process; this applies to multiple data source environments as well. Do not overlap the ETL processes; run only one ETL process at a time. Overlapping can cause unexpected results. This includes multiple data source environments. Only one ETL process should run at a time, regardless of the data source.

Any mechanism can be used to either launch, or schedule the launch, of the `odsetl.bat` (or `odsetl.sh` on a non-Windows system) and `staretl.bat` (or `staretl.sh` on a non-Windows system) files. The Windows AT command, Task Scheduler, or Unix CRON are all viable options.  The user who initiates the database refresh process needs read/write access to the P6 Reporting Database installation folder.

About History Fact Trending

When `staretl.bat` (or `staretl.sh` on a non-Windows system) is run, it updates the Star database with the latest data from the P6 EPPM Extended Schema.

The Star can retain Project, WBS, and Activity level data from any previous run of staretl.bat (or staretl.sh), so it can accumulate multiple sets of Project, WBS, and Activity level data.

Preserving history data is an important step for ensuring the Star data warehouse is successful. Ensure your organization has a backup and restore policy for the Star schema history tables.

About Dimensions

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).

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

Prerequisites

This section describes the prerequisites for installing and using P6 Reporting Database. It includes required database instances, supported databases, and disk storage space requirements.

P6 EPPM must already be installed, and a P6 EPPM database already created.

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P6 EPPM and JRE Requirements

P6 EPPM must be installed, and a P6 EPPM database must already be created.

The current versions of the P6 Reporting Database R3.0 and P6 Analytics R2.0 software are compatible with Oracle Primavera P6 EPPM version 8.1 or 8.2.

The appropriate version of JRE must be installed on the machine where the ETL process will be run. For information on the specific JRE versions and supported operating system configurations, refer to the testedcfg.html document on the release media or download.

The ODS and Star databases must be in an Oracle instance. If the P6 EPPM database is a Microsoft SQL Server database, the Oracle Gateway application must be used to connect the P6 EPPM database to the Oracle server. Using Microsoft SQL Server for ODS and Star is no longer supported. See **Oracle Gateway Installation Requirements** (on page 15) for more information.

Securing Project Superuser

You must run the **ProjectSuperUserUpdate.sql** file before you run the ETL process for the Star Schema. Run the following script to populate project superuser security data:

- 1) Go to *<installation directory>\<Operating System>\STAR\scripts*.
- 2) On the P6 EPPM database, run the **ProjectSuperUserUpdate.sql** file as the administrative user (e.g., admuser).

Note: Run this script before you run the P6 security service that populates the extended schema.

P6 EPPM Extended Schema Requirements

The P6 EPPM Extended Schema, and related Publication Services, provide near real-time reporting. They enable users to exercise more control over what data is calculated and stored, and the frequency at which this is done.

The ODS and Star databases are populated directly from logical views that are part of the the P6 EPPM Extended Schema.

For the P6 Reporting Database ETL process to access P6 EPPM data, you must configure and run the P6 EPPM publication services before running the staretl or odsetl processes.

To configure the P6 EPPM publication services:

- 1) Login to P6.
- 2) Click the **Administer** ▼ menu and select **Application Settings**.
- 3) On the **Application Settings** pane, click **Services**.
- 4) On the **Services** page, in the **Publication** section set how much and how often data is updated to the P6 EPPM Extended schema. The ODS and Star reporting databases use the:
 - ▶ **Start date** to determine the start date for all time distributed data published.
 - ▶ **Finish Date** to determine the rolling end date for all time distributed data published.
 - ▶ **Time distributed interval** (Day or Week) for the spread data bucket types.
- 5) Select the **Enable Publish Projects** option and adjust the remaining options in this section as necessary for your data.

Once you've enabled publication, projects that qualify for publication based on your settings will begin to publish to the P6 EPPM Extended Schema.
- 6) Once all necessary projects publish, run the P6 EPPM Global Scheduled Services:
 - a. Click the **Administer** ▼ menu and select Global Scheduled Services.
 - b. Set each service to run immediately.

See the *P6 Help* for more information on the P6 Publication Services.

Note: You must run the publication services before you set up the ODS or Star reporting databases.

Oracle Gateway Installation Requirements

If your P6 EPPM database is a Microsoft SQL Server database, you must first install and configure the Oracle Gateway. Go to one of the following web sites, based on your corresponding Oracle database version, for information about installing the Oracle Gateway:

- ▶ For Oracle Gateway 10g, go to the following web site:
For Release 1, go to <http://www.oracle.com/technetwork/documentation/gateways10g-097489.html>.
For Release 2, go to <http://www.oracle.com/pls/db102/gateways>.
- ▶ For Oracle Gateway 11g, go to the following web site:
http://download.oracle.com/docs/cd/B28359_01/gateways.111/b31043/toc.htm

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

After you install the Oracle Gateway, you must configure it to use the P6 EPPM database. See **Configuring the Oracle Gateway for a Specific Microsoft SQL Server Database** (on page 21).

Oracle Database 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

Oracle tnsnames.ora File Requirements

Ensure that the **tnsnames.ora** file contains references to the P6 EPPM database, the ODS database, and the Star database, before configuring these databases. The **tnsnames.ora** file must be on the machine where you installed P6 Reporting Database.

Required Database Instances, Collation Requirements, Character Sets, and Database Locations

This section provides information regarding the required database instances, the collation requirements, the recommended character sets, and recommended locations for the ODS and Star database instances.

Required Database Instances

The following database instances must already exist:

- ▶ A database instance for the ODS database.
- ▶ A database instance for the Star database.

These schemas can be in the same instance or separate instances.

Database Collation Requirements

The database collation that you set when you create the ODS and Star database instances must be the same for each. The collation must match the database collation set for the P6 EPPM database when it was created.

Recommended Database Instance Locations

It is recommended that the ODS and Star database instances reside on different physical machines from the P6 EPPM database. This minimizes the impact that the P6 Reporting Database has on the performance of the P6 EPPM database server.

Operating System User Permissions



To install P6 Reporting Database and run the ETL process, the users for Windows or non-Windows platforms must have full read/write access to the P6 Reporting Database installation directory. They also need access to the Oracle Client Files (such as `tnsnames.ora` and `sqlloader`) and Java.

odsetl.bat (or odsetl.sh) and staretl.bat (or staretl.sh) Requirements

An Oracle database client must be installed on the server where the `odsetl.bat` (or `odsetl.sh` on a non-Windows system) and `staretl.bat` (or `staretl.sh` on a non-Windows system) will run.

Note: You must install SQLLDR. To do this install the full Oracle Client. If you cannot install the full Oracle Client, you must install SQLLDR manually before you begin installing P6 Reporting Database.

In a Linux or Unix environment, both the `ORACLE_HOME` and `PATH` must be manually set on the server where the `odsetl.bat` (or `odsetl.sh`) and `staretl.bat` (or `staretl.sh`) will run. `PATH` should be the `ORACLE_HOME\bin` folder.

Disk Storage Space Requirements

For detailed information, refer to the *P6 Reporting Database Planning and Sizing Guide*.

Creating the Oracle Tablespaces

Before installing P6 Reporting Database, log onto SQL Plus as System\<system password> to create the Oracle tablespaces.

Before creating the tablespace definitions, make sure that the ODS and Star databases are in their proper locations. See **Recommended Database Instance Locations** (on page 16) for more information.

Related Topics

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Creating the ODS Tablespace

See **Creating the Oracle Tablespaces** (on page 17) before creating the ODS tablespace for important information about the code shown in the following procedure. After logging onto SQL Plus as System\<system password>, do the following to create the ODS tablespace:

- 1) Connect to the P6 Reporting Database ODS instance with a user that has create tablespace privileges.
- 2) Create tablespace ODS_DAT1. For example:

```
CREATE SMALLFILE TABLESPACE ODS_DAT1 DATAFILE '<path>/ods_dat1.dbf' SIZE 100M
AUTOEXTEND ON NEXT 100M MAXSIZE UNLIMITED LOGGING EXTENT MANAGEMENT
LOCAL UNIFORM SIZE 1M SEGMENT SPACE MANAGEMENT AUTO;
```

Note: In the preceding example, replace **<path>** with the actual path to the location of the Oracle tablespaces.

Oracle Database Partitioning

You should install Oracle Partitioning on the Star database, but it is not required. Oracle recommends that you use partitioning.

Note: You must have a license for the database partitioning option. Contact your Oracle representative to ensure you have the correct licenses.

Oracle Partitioning enables large tables and indexes to be split into smaller, more manageable components. If you deploy without partitioning, the following features are **not** supported:

- ▶ WBS-level or activity-level history transfer to the Star schema
- ▶ Multiple PMDB data sources

Tips

See the *P6 Reporting Database Planning and Sizing* guide for more information on partitioning requirements.

Adjusting Partition Ranges

The default for partition ranges is the current month +3 months. To adjust the range:

- 1) Go to the `<installation directory>\<Operating System>\STAR\scripts` folder.
- 2) Edit the **create_star_tables_part.sql**.
- 3) To extend or decrease the size of the partitions, change the numeric value for the amount of days you want to add or subtract.

The **w_project_history_f**, **w_wbs_history_f**, and **w_activity_history_f** have sections for partition R1, R2, and R3. The values represent a date (for example - LESS THAN (11748)).

Tips

You can add more partitions by increasing PARTITION R values. See the *P6 Reporting Database Planning and Sizing* guide for adding additional tablespaces.

Creating the Star Tablespace

See **Creating the Oracle Tablespaces** (on page 17) before creating the Star tablespace for important information about the code shown in the following procedure. After logging onto SQL Plus as System\<system password>, do the following to create the Star tablespace:

- 1) Connect to the P6 Reporting Database Star instance with a user that has create tablespace privileges.
- 2) Create tablespace star_dat1 with uniform extent size 1M and with blocksize 32K. For example:

```
CREATE SMALLFILE TABLESPACE STAR_DAT1 DATAFILE
'<path>\oracle\oradata\hoth\star_dat1.dbf' SIZE 100M AUTOEXTEND ON NEXT 100M
MAXSIZE UNLIMITED LOGGING EXTENT MANAGEMENT LOCAL UNIFORM SIZE 1M
SEGMENT SPACE MANAGEMENT AUTO;
```

Note: In the preceding example, replace **<path>** with the actual path to the location of the Oracle tablespaces.

- 3) Create tablespace star_hst1. For example:
CREATE SMALLFILE TABLESPACE STAR_HST1 DATAFILE
'<path>\oracle\oradata\hoth\star_hst1.dbf' SIZE 100M AUTOEXTEND ON NEXT 100M
MAXSIZE UNLIMITED LOGGING EXTENT MANAGEMENT LOCAL UNIFORM SIZE 1M
SEGMENT SPACE MANAGEMENT AUTO;

Note: In the preceding example, replace **<path>** with the actual path to the location of the Oracle tablespaces.

Creating Non-partitioned Deployments

While Oracle recommends that you use a partitioned environment, P6 Reporting Database also supports non-partitioned environments with Oracle Database Standard Edition or the Enterprise Edition.

If you deploy without partitioning, the following features are **not** supported:

- ▶ WBS-level or activity-level history transfer to the Star schema
- ▶ Multiple PMDB data sources

If you use an Oracle Standard Edition database, partitioning is not available. To setup a non-partitioned P6 Reporting Database and P6 Analytics environment, do the following before running **staretl**:

- 1) Rerun the **configStar** file from the <installation directory> and go back through the configuration and setup screens, making the same choices you made before.
- 2) Go to the <installation directory>\scripts folder.
 - a. Move the following files to a different directory:
 - **Create_star_indexes_part.sql**
 - **Create_star_tables_part.sql**
 - b. Rename the following scripts:
 1. Change **Create_star_indexes.sql** to **Create_star_indexes_part.sql**.
 2. Change **Create_star_tables.sql** to **Create_star_tables_part.sql**.

These changes cause the ETL process to use these scripts, which do not include partitioning, instead of the partitioned scripts.

Configuring the Oracle Gateway to Link to a P6 EPPM Database on a Microsoft SQL Server System

Note: If your P6 EPPM database is not located on a Microsoft SQL server, skip this section and move on to the instructions in the ***Installing and Configuring the ODS Database*** (on page 49) and ***Installing and Configuring the Star Database*** (on page 25) sections.

This section describes how to configure the Oracle Gateway to link a P6 EPPM database if it is located on a Microsoft SQL Server. You must install and configure the Oracle Gateway before installing P6 Reporting Database. See ***Oracle Gateway Installation Requirements*** (on page 15) for information about installing the gateway.

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Configuring the Oracle Gateway for a Specific Microsoft SQL Server Database

If your P6 EPPM database is a Microsoft SQL Server database, do the following to configure the Oracle Gateway to use that database:

See ***Oracle Gateway Installation Requirements*** (on page 15) for information on installing the Oracle Gateway.

- 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.

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)  
)
```

- 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)  
)  
)
```

- 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. 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

- 8) When configuring your Oracle Gateway, set HS_LANGUAGE for the Oracle character set of your instance:
- a. On the gateway machine, go to the gateway install directory (for example, C:\product\11.1.0\tg_2\dg4msql\admin)
 - b. 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

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

Before Installing and Configuring P6 Reporting Database

Before installing the P6 Reporting Database software:

- ▶ Be sure you have met the installation prerequisites. See **Prerequisites** (on page 13).
- ▶ The Oracle database instances must already exist before running the installation. See **Required Database Instances** (on page 16).

Note: Due to the global nature of the Oracle Universal Installer (OUI), you cannot use the *OUI Help* to install or uninstall P6 Reporting Database. See **Installing the ODS Database** (on page 49) and **Installing the Star Database** (on page 25) instead for installation instructions.

If you are upgrading from a previous version of P6 Reporting Database, see **Upgrading P6 Reporting Database to the Latest Version** (on page 59) before proceeding.

Installing P6 Reporting Database involves installing the ODS and the Star databases. When installing P6 Reporting Database, you can:

- ▶ Install the ODS database without installing the Star database.
- ▶ Install the Star database without installing the ODS database.
- ▶ Install both the ODS and Star databases.

Note: If you are installing both the ODS and Star databases, it does not matter in which order you install them.

Installing and Configuring the Star Database

This section describes how to install and configure the Star database.

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Installing the Star Database

Caution: The Star database portion of P6 Reporting Database **must** be installed in a **new** directory. Do **not** install the Star database in the same directory where a previous version of P6 Reporting Database is installed.

Use the following procedure to install the Star database portion of P6 Reporting Database:

- 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\Star\Disk1\install\setup.exe
 - ▶ If you are installing on a non-Microsoft Windows system:
<Operating System>\Star\Disk1\Install\runInstaller
where **<Operating System>** is a supported non-Windows platform. For information on supported non-Windows platforms, see the Tested Configurations document (testedcfg.htm) on the release media or download.
- 2) On the **Welcome** screen, click **Next**.
- 3) On the **Specify Home Details** screen:
 - a. In the **Name** field, enter or verify the name for the Star database.
 - b. In the **Path** field, verify or browse to the installation location for the Star database.
 - c. Click **Next**.
- 4) On the **Java Runtime** screen:
 - a. Click the **Browse** button to specify the location of the JRE version (for example, c:\Program Files\Java\jre1.6.0_27).

This must be a JRE location, not a JDK location.

Note: The appropriate version of JRE must be installed on the machine where staretl.bat (or staretl.sh on a non-Windows system) will be run. For information on the specific JRE versions and supported operating system configurations, refer to the testedcfg.html document on the release media or download.

If the location is a JDK location, select the JRE subfolder.

- b. Click **Next**.
- 5) On the **Summary** screen:
 - a. Read the summary information that explains where the Star database will be installed, the product languages, the space requirements, and what is being installed.
 - b. Click **Install** to install the Star database.
- 6) Prior to installation completion, the P6 Reporting Database Configuration Utility will launch in a separate window.
 - a. On the **Welcome** screen, click **Next** to begin.
 - b. See **Configuring the Star Database** (on page 26).
- 7) After completing the P6 Reporting Database configuration utility, the **End of Installation** window displays. Click **Exit** to finish the installation.

Configuring the Star Database

This section describes how to configure the Star database portion of P6 Reporting Database. The Configuration Utility launches after the installation of the Star database completes.

Note: During the configuration phase, some fields might already contain data. Check the data and change it as necessary.

Start with one of the following sections:

- ▶ If the P6 EPPM database is on an Oracle instance, see **Configuring the P6 EPPM Database Connection for Star on an Oracle Instance** (on page 26).
- ▶ If the P6 EPPM database is on a Microsoft SQL Server, see **Configuring the Microsoft SQL Server Connection If the P6 EPPM is on a Microsoft SQL Server** (on page 27)

Configuring the P6 EPPM Database Connection for Star on an Oracle Instance

Use the fields on the **Reporting Database Configuration Utility - [STAR]** configuration wizard to configure the Star database with the P6 EPPM database. If your P6 EPPM database is on a Microsoft SQL Server, follow the steps in **Configuring the Microsoft SQL Server Connection If the P6 EPPM is on a Microsoft SQL Server** (on page 27) instead of the steps in this section.

On the **EPPM Reporting Database Connection** screen:

- 1) For the **Database Type** option, choose **Oracle**.
 - 2) In the **Oracle Database Connection** section:
 - a. In the **Host Name** field, enter the server machine name or IP address where you installed the P6 EPPM database.
 - b. In the **Port Number** field, enter or verify the port number for your database.
The default for Oracle is 1521.
 - c. Choose the Service Name or SID option. Enter the Service Name or SID.
 - 3) In the **Reporting User** section:
 - a. In the **Username** field, enter or verify your reporting database name (for example, PxRptUser).
 - b. In the **Password** field, enter the password for the reporting database user.
 - 4) Click **Next**.
- When you click next, the wizard will test that the connection is valid. If the test fails, ensure you have entered all the information correctly and try again.
- Follow the steps in the **Configuring the Oracle Star Database Connection** (on page 28) section.

Configuring the Microsoft SQL Server Connection If the P6 EPPM is on a Microsoft SQL Server

Use the instructions in this section only if your P6 EPPM database is on a Microsoft SQL server. You must have already installed the Oracle Gateway software before installing the Primavera P6 Reporting Database software. See **Oracle Gateway Installation Requirements** (on page 15) for information about installing the gateway.

On the **EPPM Reporting Database Connection** screen:

- 1) For the **Database Type** option, choose **SQL Server**.
- 2) In the **SQL Server Connection** section:
 - a. In the **Host Name** field, enter the server machine name or IP address where you installed the P6 EPPM database.
This is the SQL Server instance name of the Microsoft SQL Server where the P6 EPPM database resides. For example, `SQLServerName\databaseInstanceName`.
 - b. In the **Port Number** field, enter or verify the port number for your database.
The default for Microsoft SQL Server is 1433.
 - c. In the **Database Name** field, enter the name of the P6 EPPM database. This database must already exist.
- 3) In the **Oracle Gateway Connection** section:
 - a. In the **Host Name** field, enter the machine name or IP address where you installed the Oracle Gateway.
 - b. In the **Port Number** field, enter the Service name where you installed the Oracle Gateway.

- c. Choose the Service Name or SID option. Enter the Service Name or SID.
- 4) In the **Reporting User** section:
 - a. In the **Username** field, enter or verify your reporting database name (for example, PxRptUser).
 - b. In the **Password** field, enter the password for the reporting database user.
- 5) Click **Next**, and follow the steps in one of the following sections:
 - ▶ If you are configuring the ODS database, see **Configuring the Oracle ODS Database Connection** (on page 52) for information on configuring the ODS database connection.
 - ▶ If you are configuring the Star database, see **Configuring the Oracle Star Database Connection** (on page 28) for information on configuring the Star database connection.

Configuring the Oracle Star Database Connection

On the **Star Database Connection** screen, configure the Star database connection to the P6 EPPM database:

- 1) In the **Oracle Database Connection** section:
 - a. In the **Host Name** field, enter the server machine name or IP address where you installed the database.
 - b. In the **Port Number** field, enter or verify the port number for your database. The default for Oracle is 1521.
 - c. Choose the Service Name or SID option. Enter the Service Name or SID.
- 2) In the **Database Administrator Account (DBA)** section:
 - a. In the **Username** field, enter or verify your DBA user name that has DBA privileges for the Star database. The default name is **SYSTEM**.
 - b. In the **Password** field, enter the password for the DBA user.
- 3) In the **Create STAR user account** section:
 - a. In the **Username** field, enter or verify your Star user name. This user will own the Star tables.
 - b. In the **Password** and **Confirm Password** fields, enter a password for the STAR user.
- 4) Click **Next**.
See **Configuring ETL Settings for Star** (on page 28).

Configuring ETL Settings for Star

On the **ETL Settings** screen:

- 1) In the **JVM Location** field, enter or verify the path to the Java Virtual Machine (JRE path).

- ▶ The appropriate version of JRE must be installed on the machine where the ETL process will run. For information on the specific JRE versions and supported operating system configurations, refer to the `testedcfg.html` document on the release media or download.
 - ▶ The path must refer to a location on the local machine, where the P6 Reporting Database configuration utility is installed.
- 2) In the **Max Java Heap Size (MB)** field, enter parameter for the Java Heap Size. 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 512 MB.
 - ▶ When changing the Maximum Java Heap Size setting, the values must be in 512 MB increments.
 - 3) In the **Log Detail Level** field, choose the level of logging detail that you want to use. The following are the logging detail levels you can choose:
 - ▶ **Errors and Warnings** – Logs errors and warnings.
 - ▶ **General Information** – This is the default value. This logs errors, warnings, and informational messages on the progress of each step.
 - ▶ **Debug and Trace Information** – Provides all general information, errors and warnings, and detailed output of each script, query, and connection being executed.
 - ▶ **Errors Only** – Logs only errors and no other information.
 - ▶ **Extra Debug Information** – Provides all general information, errors and warnings. It provides more fine grained information on each step and scripts being executed.
 - 4) In the **General Thread Count** field, choose the number of threads the ETL process will run. Extraction and Load processes are multi-threaded.
Oracle recommends keeping the default (5) for this setting.
 - 5) In the **Index Building Thread Count** field, choose the number of threads that will build the index. It specifies how many threads to run for building indexes for the ODS or Star database.
 - 6) Oracle recommends keeping the default (5) for this setting.
 - 7) Click **Next**.
See **Configuring Codes for Star** (on page 29).

Configuring Codes for Star

Use the Codes screen to choose the Project, Activity, and Resource level P6 EPPM Codes that will migrate to the STAR database. For information on how these codes work, see the "Dynamic Codes" section of the *P6 Analytics User's Guide*.

On the **Codes** screen:

- 1) Move the **Activity**, **Project**, and **Resource** codes that you want to use from the available column to the selected column.

Note: Project, Activity, and Resource codes must exist in P6 EPPM for them to appear in the available codes list.

2) Click **Next**.

See **Configuring User Defined Fields for Star** (on page 36).

Activity Code Descriptions

The **Activity** list has the following fields:

Field	Description
Name	This field corresponds to the code's display name in the P6 EPPM database. If you leave this field blank, it automatically populates with an initial value. This field can be edited.

Field	Description
Scope	<p>Because activity codes can be defined for different areas of your P6 EPPM database (Global, EPS, and Project), P6 Reporting Database enables you to define the Scope in which these activity codes are used.</p> <p>The scope order is important because it determines a tie-breaker if there is a code with the same name at different levels. For example, if there is a global code called MyCode, and a project has a code called MyCode, the scope setting used would determine which code value is used. If you select Global, Project, then the global MyCode value will be used. If you select Project, Global as the scope setting, then the project level MyCode value will be used.</p> <p>Use the scope list to choose one of the following:</p> <ul style="list-style-type: none"> ▶ 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
ID	Contains the Activity code's ID number. When you choose an Activity ID, this is assigned sequentially starting with number 1.

Project and Resource Code Descriptions

Project and Resource codes are not global, and have no scope. The **Project and Resource** list has the following fields:

Field	Description
Name	This field corresponds to the code's display name in the P6 EPPM database. If you leave this field blank, it automatically populates with an initial value. This field can be edited.
ID	Contains the code's ID number. When you choose a code, this is assigned sequentially starting with number 1.

Configuring Dynamic Codes

This section provides an overview of Dynamic Codes, and describes how to add additional code mappings. Dynamic Codes include Activity Codes, Project Codes, and Resource Codes. Users can select the codes that will be displayed in OBI for organizing data based on those code values.

P6 Analytics is shipped with 20 default code mappings for each code type (Activity, Project, and Resource). You can add unlimited code mappings for each code type as long as you can still add a column to the corresponding dimension table (W_ACTIVITY_D, W_PROJECT_D, W_RESOURCE_D).

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Dynamic Codes Overview

During the set up process, you can define Dynamic Codes for the following:

- ▶ Activity Codes (EPS, Global, Project)
- ▶ Resource Codes
- ▶ Project Codes

Defining dynamic codes enables these codes to be available in the Oracle Business Intelligence (OBI) Answers and Dashboards applications. When defined, these codes can be used for grouping and analyzing data.

P6 Analytics is shipped with 20 default code mapping columns for each code type (Activity, Project, and Resource). You can add additional code mapping columns for each code type by adding columns to the dimensional tables (the database has a limit for the number of columns you can add). If you select five columns, then only five columns will be available in Star.

Note: Oracle has a limit of 1,000 columns in a table.

To add additional code mapping columns, use the following syntax:

```
alter table
    w_table_d
add
    (
        code_value_<#> varchar2(4000 char),
        code_descr_<#> varchar2(120 char)
    );
```

Where:

table is the table you want to alter. You can replace table with project, activity, or resource.

<#> is the next available column increment.

Both the **code_value_<#> varchar2(4000 char)** and **code_descr_<#> varchar2(120 char)** are required.

For example, to add bucket mapping column 21 to the **w_project_d** dimension table, execute the following as STARUSER:

```
alter table
    w_project_d
add
(
    code_value_21 varchar2(4000 char),
    code_descr_21 varchar2(120 char)
);
```

Where:

21 is the number of the next available column, because it is the next column added after column 20.

Note: The columns should be added in succession. Do not skip column numbers. For example, to add another column after column 20, the column number should be 21. To add another column after column 21, the column would be defined as **code_value_22 varchar2(4000 char)** and **code_descr_22 varchar2(120 char)**.

An optional priority setting is available for Activity Codes. An activity code can be an EPS, Global, or Project Code. There can also be an activity code with the same name for each of these different subject areas. During setup, you can specify which subject area to search for first when selecting an activity code.

For example, suppose you have an activity code called Location, and also have EPS, Global, and Project codes that each have the name Location. In dynamic Activity codes, if the activity code that you want to search for first is the Global version of Location, followed by Project second, and EPS third, you can order the search to use the Global Location activity code first. The setting in the configuration utility (config) for Activity dynamic codes, Scope would be:

- ▶ Global
- ▶ Project
- ▶ EPS

In this example, the search will look for the Global Location activity code first, and will populate those assignments. After that, the search will continue to the Project scope level, and will populate those assignments. Finally, the search will continue to EPS and will populate those assignments.

If you only want to search for the Project level activity code, then only the scope should be set for that level during setup. For Project codes and Resource codes there is no scope level.

Dynamic codes are defined in the configuration utility by defining the code, scope (activity codes only), regular expression (usually, this is the name of the code), name (the display name for the code name label in OBI), and description (the display name for the code value label in OBI).

Configuring Additional Code Mappings

To configure additional code mappings, do the following:

- 1) Add additional code mapping columns, using the syntax described in **Dynamic Codes Overview** (on page 33).
- 2) Edit the **xlat.<LANG_CODE>.csv** file located in <STAR_HOME>/star/res/xlat/ (LANG_CODE is your language code. For example, **xlat.en.csv**).
 - a. Copy this line:
"en","CN_Primavera - Activity_Codes - (Project)_Project_Code_Description_20","Code Description","Y"
 - b. Paste it over this line in the csv file:
"en","CN_Primavera - Activity_Codes - (Project)_Project_Code_Description_21","Code Description 21","Y"
 - c. Copy this line:
"en","CD_Primavera - Activity_Codes - (Project)_Project_Code_Description_20","Description for the project code.,"Y"
 - d. Paste it over this line in the csv file:
"en","CD_Primavera - Activity_Codes - (Project)_Project_Code_Description_21","Description for the project code 21.,"Y"
- 3) Edit the OraclePrimaveraAnalytics.rpd to include any new columns added in Step 1.
 - a. Any new columns added in Step 1 need to be manually added to the OraclePrimaveraAnalytics.rpd.
 - b. Edit the OraclePrimaveraAnalytics.rpd using the Oracle BI Administration Tool, and add the columns added in Step 1 to each layer of the rpd file (Physical, Business Model and Mapping and Presentation). For example, in the 'Presentation' layer, any additional activity code bucket (the 21st) column should be added as 'Activity Code Value 21' and 'Activity Code Description 21'.

Note: Be sure to follow the entry values naming convention (adjusting only the bucket number) used for the pre-existing code (1-20) bucket columns in each layer.

Configuring User Defined Fields for Star

Use the User Defined Fields screen to choose the Project, WBS, and Activity level UDF fields from P6 EPPM that will migrate to the Star database. P6 Reporting Database supports Cost, Integer, and Number UDF types.

Note: 'Number' and 'Integer' UDF types are displayed in the 'Non-Cost' folders in the configuration wizard.

Users can select the UDFs that will display in Oracle Business Intelligence (OBI) to organize data based on those UDF values.

P6 Analytics includes 20 default UDF mappings for each UDF area (Activity, Project, and WBS). You can add up to 100 UDF mappings for each UDF area as long as you add a column to the corresponding fact table (W_UDF_PROJECT_F, W_UDF_ACTIVITY_F, W_UDF_WBS_F).

On the **User Defined Fields** screen:

- 1) Move the **Project**, **WBS**, and **Activity** UDFs that you want to use from the available column to the selected column.
- 2) Click **Next**.

See ***Finishing the Configuration Wizard*** (on page 37).

Configuring Additional UDF Mappings

P6 Analytics includes 20 default UDF mapping columns for each UDF area (Activity, Project, and WBS). You can add up to 100 mapping columns for each area by adding columns to the fact tables.

To add additional UDF mapping columns:

- 1) Use one of the following syntax depending on which area you are changing:
 - ▶ Project has two types: number and cost. Depending on the type of UDF you are adding, edit one of the following:
 - `alter table w_udf_project_f add UDF_NUMBER_<#> NUMBER(10,0);`
 - `alter table w_udf_project_f add UDF_COST_<#> NUMBER(10,0);`
 - ▶ For Activity:
`alter table w_udf_activity_f add UDF_NUMBER_<#> NUMBER(10,0);`
 - ▶ For WBS:
`alter table w_udf_wbs_f add UDF_NUMBER_<#> NUMBER(10,0);`

where <#> is the next available column increment
- 2) Edit the **xlat.<LANG_CODE>.csv** file located in <STAR_HOME>/star/res/xlat/ (LANG_CODE is your language code. For example, **xlat.en.csv**).
 - a. Locate the recently incremented UDF fields.

- b. Copy this line:
`"en","CN_Primavera - _Project_User_Defined_Fields_Numbers_User_Defined_Field_Number_20","User Defined Field Number 20","Y"`
 - c. Paste it over this line in the csv file:
`"en","CN_Primavera - _Project_User_Defined_Fields_Numbers_User_Defined_Field_Number_21","User Defined Field Number 21","Y"`
 - d. Copy this line:
`"en","CD_Primavera - _Project_User_Defined_Fields_Numbers_User_Defined_Field_Number_20","20","Y"`
 - e. Paste it over this line in the csv file:
`"en","CD_Primavera - _Project_User_Defined_Fields_Numbers_User_Defined_Field_Number_21","21","Y"`
- 3) Edit the OraclePrimaveraAnalytics.rpd to include any new columns added in Step 1.
- a. Any new columns added in Step 1 need to be manually added to the OraclePrimaveraAnalytics.rpd.
 - b. Edit the OraclePrimaveraAnalytics.rpd using the Oracle BI Administration Tool, and add the columns added in Step 1 to each layer of the rpd file (Physical, Business Model and Mapping and Presentation). For example, in the 'Presentation' layer, any additional activity code bucket (the 21st) column should be added as "User Defined Field Number 21."

Note: Be sure to follow the entry values naming convention (adjusting only the bucket number) used for the pre-existing code (1-20) bucket columns in each layer.

Finishing the Configuration Wizard

To complete the configuration:

- 1) Choose whether you want to run the **Reporting Database Diagnostic Utility**. It will help you troubleshoot your configuration if you choose to run it.

Note: If you run the diagnostic utility now, you will get a fail message for the JDBC Star connection because the STARUSER has not been created yet. You can ignore the message. The STARUSER will be created when you run the staretl process.

- 2) Click **Finish**.

This generates all the scripts that go into the scripts directory.

All the settings configured with the Star database configuration utility will be stored in the following location:

<installation path>\star\res\staretl.properties

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

db.star.application.username=STARUSER

Star Security Configuration

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

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Adding or Updating a New Star User

This topic describes how to add or update a new Star user.

In P6, do the following:

- 1) Add a new user, and give the user module access to **P6 Analytics**. Be sure to grant the user the necessary Operational Breakdown Structure (OBS), cost, and resource access. If you are modifying a user, change that user's privileges. (See the *P6 Help* for more information.)
- 2) Click the **Administer** ▼ menu and select **Global Scheduled Services**.
- 3) Run the **Publish Security** service.

Note: You can schedule this service to run immediately or later, but it must finish running before you run the `staretl` file.

- 4) Run `staretl.bat` (or `staretl.sh` on a non-Windows system).

Including Inactive Resources in the Star Tables

By default, inactive resources 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 might 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 **staretl.properties** file, and set the **=false** parameter to **=true** in the following statement:

```
▶ star.utilization.include.inactive.rsrc=false
```

Modifying User Access in Star

Users given access to Star will only be able to access the data for which they have rights in the P6 EPPM database.

For example, if a user has the “Edit EPS Costs/Financials” privilege in the P6 EPPM database, then that user will be able to view project cost information in Star. Conversely, if a user does not have the “Edit EPS Costs/Financials” privilege in the P6 EPPM database, they would see the word **null** in place of the value in fields that contain cost information.

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

- 1) In P6, go to **Administer, User Access, Project Security Profiles**.
- 2) To provide access to cost information, ensure that the **Edit EPS Costs/Financials** privilege option is selected in the user's project profile.
- 3) If necessary, assign the **View Resource and Role Costs/Financials** profile to enable users to view resources costs if the user has resource access. It's a global security profile.
- 4) Run one of the following files to create the database user:
 - ▶ staretl.bat (on a Windows platform)
 - ▶ staretl.sh (on a non-Windows platform)

Deleting an Star User

Use the following procedure to delete a user from Star.

- 1) In the P6 application, remove P6 Analytics from the user's module access.
- 2) On the machine where the Star database resides, run one of the following files:
 - ▶ staretl.bat (on a Windows platform)
 - ▶ staretl.sh (on a non-Windows platform)

For information on deleting a P6 EPPM user, see the P6 online help.

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

Running the staretl.bat (or staretl.sh) File

After you complete the installation and all configuration tasks, execute the staretl.bat (or staretl.sh on a non-Windows system) file by doing the following:

- 1) Go to the <installation directory name> directory.
- 2) Click **staretl.bat** (or **staretl.sh**) to execute the file.
- 3) Go to <installation directory>\<Operating System>\STAR\Scripts and run the **STARSchemaStats.sql**.

Notes:

- You must run this script to ensure performance and gather statistics.
 - You will only need to run this script once after the initial installation.
-

Multiple Data Sources in the Star Database

If you want to pull data into Star from additional data sources, such as an 8.1 or 8.2 P6 EPPM Extended Schema, or 2.1 ODS data source, you can do so by following the steps in this section. Pulling data from additional data sources will make the data available through OBIEE analysis. OBI will use the data source values to make groupings. Multiple data sources allow you to group matching data (such as resources, codes, and other common attributes) from different data sources because they are part of the same Star schema. The tables have a "datasource_id" field that you can use to distinguish where the data came from.

Supported data sources are:

- ▶ P6 EPPM Extended Schema 8.1 (Oracle only)
- ▶ P6 EPPM Extended Schema 8.2 (Oracle and Microsoft SQL Server)

Note: Only the P6 EPPM Extended Schema SQL Server data source for 8.2 is supported; earlier versions of SQL Server are not supported.

- ▶ ODS 2.1 (Oracle only)

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Adding Three Additional Data Sources to the Star Database

If you need additional data sources, the Star database allows you to add up to three data sources by default. If you add three data sources and want to add more, see **Adding More than Three Data Sources to the Star Database** (on page 45). Follow the instructions below to add data sources.

Note: Before adding any of these data sources, you must run either the P6 EPPM Extended Schema services or the ODS ETL depending on your P6 EPPM version. These data sources must be up-to-date.

- 1) Validate that Oracle Partitioning is running for your instance. Run this command:
`select * from V$OPTION`
- 2) Verify this line in the **staretl.properties** shows "true":
`db.star.partitioned=true`

- 3) Continue to one of the following chapters: **Adding Up to Three Additional Data Sources to the 8.1 or 8.2 P6 EPPM Extended Schema** (on page 44) or **Adding ODS 2.1 Data Sources** (on page 44).

Adding Up to Three Additional Data Sources to the 8.1 or 8.2 P6 EPPM Extended Schema

- 1) Create a DB link for the new data source:

```
CREATE DATABASE LINK DSLINK#  
CONNECT TO "pxrptuser" IDENTIFIED BY "pxrptuser"  
USING  
' (DESCRIPTION= (ADDRESS= (PROTOCOL=TCP) (HOST=hostname) (PORT=portnumber)  
) ) (CONNECT_DATA= (SERVICE_NAME=servicename) ) ) '
```

where *hostname*, *portnumber*, and *servicename* are specific to your environment and # corresponds to number for the data source (for example, DSLINK02).

Note: The link name must be DSLINK#. Where # is the number that corresponds to the data source. For example, DSLINK03.

- 2) Verify DB link is working by running the following command:

```
select * from project@dslink#
```

where # is the number that corresponds to the data source. For example, DSLINK02.

- 3) Run the ETL process for the new data source:

```
staretl.bat "-s#"
```

where # is the number that corresponds to the data source. For example, "-s2".

- 4) Verify the row counts by running the following command:

```
select count(*) from w_project_dc
```

- 5) Repeat these steps for each additional data source you want to add. (You can add up to three).

- 6) Continue to **Updating the Data Source** (on page 45).

Adding ODS 2.1 Data Sources

- 1) Create a DB link for the new data source:

```
CREATE DATABASE LINK DSLINK#  
CONNECT TO "odsr8" IDENTIFIED BY "odsr8"  
USING  
' (DESCRIPTION= (ADDRESS= (PROTOCOL=TCP) (HOST=hostname) (PORT=portnumber)  
) ) (CONNECT_DATA= (SERVICE_NAME=servicename) ) ) '
```

where *hostname*, *portnumber*, and *servicename* are specific to your environment and # corresponds to number for the data source (for example, DSLINK02)

Note: The link name must be DSLINK#. Where # is the number that corresponds to the data source. For example, DSLINK03.

- 2) Verify DB link is working by running the following command:

```
select * from project@dslink#
```

where # is the number that corresponds to the data source. For example, DSLINK02.

- 3) Create a view line in **staretl.properties** file for the new data source.

```
star.project.filter.ds#=personal_view
```

where # is the number that corresponds to the data source (for example, ds2) and *personal_view* is the name of your view.

- 4) Create a view to populate the object ID for the projects that will be included in the Star database. The *fill_project_list* will look for a view if specified in the properties file or *enable_publication* flag on a project for later versions.

```
CREATE OR REPLACE VIEW PERSONAL_VIEW AS Select ObjectId from Project  
where isbaseline = 'N'
```

where *PERSONAL_VIEW* is the name of your view

Note: Your filter must include criteria to eliminate baselines;
otherwise, baseline projects will transfer into the view.

- 5) Create an additional view in the ODS schema (run as ODSUSER):

```
CREATE OR REPLACE FORCE VIEW PSVIEW AS SELECT u.objectid rdbmsuserid,  
ps.projectobjectid, ps.costflag FROM projectsecurity ps INNER JOIN  
users u ON ps.rdbmsuserid = u.rdbmsuserid;
```

- 6) Run the ETL process with the following file:

```
staretl "-s#" 
```

where # is the number that corresponds to the data source. For example, "-s2".

- 7) Repeat these steps for each additional data source you want to add. (You can add up to three).
- 8) Continue to **Updating the Data Source** (on page 45).

Updating the Data Source

After you have run the data source for the first time, run the *staretl* to update each partition of Star.

- 1) Run the **startetl.bat** file to update data source 1.
- 2) Run the **startetl.bat "-s2"** file to update data source 2
- 3) Run **startetl.bat "-s3"** to update data source 3.

Adding More than Three Data Sources to the Star Database

Determine how many data sources to use before running the Star ETL. You must edit scripts and rerun the ETL processes for each data source. The database will recreate tables.

Warning: Before editing the scripts, manually backup the history data. When you add more data sources, the staretl.bat "-r" file will rebuild all tables and remove all existing activity level history. If you don't backup your history data, it will disappear.

The default number of data sources you can create is three. If you want to add more than three data sources, follow the steps below.

Notes:

- The instructions assume that you have installed P6 Reporting Database.
 - Before adding extra data sources, you must either run the P6 EPPM Extended Schema services or the ODS ETL and update these data sources.
-

- 1) Back up your history data.
- 2) Go to the `\star\scripts\` installation directory and open the **create_star_tables_part.sql** file in an editor.
- 3) Find the Create Table Sections' **PARTITION BY LIST**. The table has three partition values seen below:
PARTITION BY LIST(datasource_id) (
 - ▶ PARTITION P1 VALUES (1),
 - ▶ PARTITION P2 VALUES (2),
 - ▶ PARTITION P3 VALUES (3))
- 4) Add additional partitions to each Create Table Section as needed. For example:
PARTITION BY LIST(datasource_id) (
 - ▶ PARTITION P1 VALUES (1),
 - ▶ PARTITION P2 VALUES (2),
 - ▶ PARTITION P3 VALUES (3),
 - ▶ PARTITION P4 VALUES (4)
 - ▶ PARTITION P5 VALUES (5))
- 5) Adjust the subpartition tables for History Fact tables. History Fact tables have Oracle partitioning and partitioning for multiple data sources. For example:
 - ▶ SUBPARTITION P1 VALUES (1),
 - ▶ SUBPARTITION P2 VALUES (2),
 - ▶ SUBPARTITION P3 VALUES (3),
 - ▶ SUBPARTITION P4 VALUES (4),
 - ▶ SUBPARTITION P5 VALUES (5)
- 6) Save and close the **create_star_tables_part.sql**.
- 7) Run the staretl.bat "-r."
- 8) Run all your other data sources. For example:
 - ▶ startetl.bat "-s2"

- ▶ startetl.bat "-s3"
- 9) Run the additional data sources you just created. For example:
- ▶ startetl.bat "-s4"
 - ▶ startetl.bat "-s5"
- 10) Locate the **W_PROJECT_D** table and verify that there is a **datasource_id =4** (as well as additional data sources if you created them) and that the other datasource_id's exist for 1, 2, and 3.

Combining Data Sources if Using Both Oracle and Microsoft SQL Server Data Sources

If you installed the Star database on both an Oracle and Microsoft SQL Server database, you will need to edit the properties file to get the data to combine correctly in your data source.

Related Topics

Combining Data Sources if the Primary Data Source is on an Oracle Database	47
Combining Data Sources if the Primary Data Source is on a Microsoft SQL Server Database	47

Combining Data Sources if the Primary Data Source is on an Oracle Database

If your primary data source is on an Oracle database:

- 1) Run the staretl for your additional data sources that are also on the Oracle database.
- 2) Make a backup copy of the **star.properties** file.
- 3) Run the **configStar** file.
- 4) When prompted, change the database for the PxRptUser so it points to the Microsoft SQL Server database and finish the configuration.
- 5) Open the re-created **star.properties** file and verify that the PxRptUser now points to the Microsoft SQL Server database.

Note: Keep both copies of the star.properties file, so you can switch between the databases.

- 6) Run the staretl "s#" file for your Microsoft SQL Server data source (for example, staretl "s2").
- 7) Switch back to the **star.properties** file for the Oracle database.
- 8) Run the staretl "s#" file for your Oracle data sources (for example, staretl "s2").

Combining Data Sources if the Primary Data Source is on a Microsoft SQL Server Database

If your primary data source is on a Microsoft SQL Server database:

- 1) Run the `staretl` for your additional data sources that are also on the Microsoft SQL Server database.
- 2) Make a backup copy of the **star.properties** file.
- 3) Run the **configStar** file.
- 4) When prompted, change the database for the PxRptUser so it points to the Oracle database and finish the configuration.
- 5) Open the re-created **star.properties** file and verify that the PxRptUser now points to the Oracle database.

Note: Keep both copies of the `star.properties` file, so you can switch between the databases.

- 6) Run the **staretl "s#"** file for your Oracle data source (for example, `staretl "s2"`).
- 7) Switch back to the **star.properties** file for the Microsoft SQL Server database.
- 8) Run the **staretl "s#"** file for your Microsoft SQL Server data sources (for example, `staretl "s2"`).

Installing and Configuring the ODS Database

This section describes the steps necessary to install and configure the ODS database.

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Finishing the ODS Database Configuration	58

Installing the ODS Database

Caution: The ODS database portion of the P6 Reporting Database 3.0 **must** be installed in a **new** directory. Do **not** install the ODS database in the same directory where a previous version of P6 Reporting Database is installed.

Use the following procedure to install the ODS database:

- 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\ODS\Disk1\install\setup.exe
 - ▶ If you are installing on a non-Microsoft Windows system:
<Operating System>\ODS\Disk1\install\runInstaller
Where: <Operating System> is a supported non-Windows platform. For information on supported non-Windows platforms, see the Tested Configurations document (testedcfg.htm) on the release media or download.
- 2) On the **Welcome** window, click **Next**.
- 3) On the **Specify Home Details** window:
 - a. Enter an appropriate name for the ODS database in the **Name** field.
 - b. Click the **Browse** button next to the **Path** field to specify the installation location for the ODS database.
 - c. Click **Next**.
- 4) On the **Java Runtime** window, click the **Browse** button to specify the location of the JRE version (for example, C:\Program Files\Java\jre6).
 - a. This must be a JRE location, not a JDK location.

Note: The appropriate version of JRE must be installed on the machine where odsetl.bat (or odsetl.sh on a non-Windows system) will be run. For information on the specific JRE versions and supported operating system configurations, refer to the testedcfg.html document on the release media or download.

- b. If the location is a JDK location, select the JRE subfolder (for example, C:\Program Files\Java\jdk1.6.0_27\jre).
 - c. Click **Next** to continue.
- 5) Read the summary information that explains where the ODS 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.
 - a. On the **Welcome** screen, click **Next** to begin.
 - b. See **Finishing the ODS Database Configuration** (on page 58).
- 7) After completing the P6 Reporting Database configuration utility, the **End of Installation** window displays. Click **Exit** to finish the installation.

Configuring the Oracle ODS Database

This section describes how to configure the ODS database portion of P6 Reporting Database. The Configuration Utility launches after the installation of the ODS database completes.

Note: During the configuration phase, some fields might already contain data. Check the data and change it as necessary.

Start with one of the following sections:

- ▶ If the P6 EPPM database is on an Oracle instance, see **Configuring the P6 EPPM Database Connection for ODS on an Oracle Instance** (on page 50).
- ▶ If the P6 EPPM database is on a Microsoft SQL Server, see **Configuring the Microsoft SQL Server Connection If the P6 EPPM is on a Microsoft SQL Server** (on page 27).

Configuring the P6 EPPM Database Connection for ODS on an Oracle Instance

Use the fields on the **Reporting Database Configuration Utility - [ODS]** configuration wizard to configure the ODS database with the P6 EPPM database. If your P6 EPPM database is on a Microsoft SQL Server, follow the steps in **Configuring the Microsoft SQL Server Connection If the P6 EPPM is on a Microsoft SQL Server** (on page 27) instead of the steps in this section.

On the **EPPM Reporting Database Connection** screen:

- 1) For the **Database Type** option, choose **Oracle**.
- 2) In the **Oracle Database Connection** section:

- a. In the **Host Name** field, enter the server machine name or IP address where you installed the P6 EPPM database.
- b. In the **Port Number** field, enter or verify the port number for your database.
The default for Oracle is 1521.
- c. Choose the Service Name or SID option. Enter the Service Name or SID.
- 3) In the **Reporting User** section:
 - a. In the **Username** field, enter or verify your reporting database name (for example, PxRptUser).
 - b. In the **Password** field, enter the password for the reporting database user.
- 4) Click **Next**, and follow the steps in the **Configuring the Oracle ODS Database Connection** (on page 52).

Configuring the Microsoft SQL Server Connection If the P6 EPPM is on a Microsoft SQL Server

Use the instructions in this section only if your P6 EPPM database is on a Microsoft SQL server. You must have already installed the Oracle Gateway software before installing the Primavera P6 Reporting Database software. See **Oracle Gateway Installation Requirements** (on page 15) for information about installing the gateway.

On the **EPPM Reporting Database Connection** screen:

- 1) For the **Database Type** option, choose **SQL Server**.
- 2) In the **SQL Server Connection** section:
 - a. In the **Host Name** field, enter the server machine name or IP address where you installed the P6 EPPM database.
This is the SQL Server instance name of the Microsoft SQL Server where the P6 EPPM database resides. For example, `SQLServerName\databaseInstanceName`.
 - b. In the **Port Number** field, enter or verify the port number for your database.
The default for Microsoft SQL Server is 1433.
 - c. In the **Database Name** field, enter the name of the P6 EPPM database. This database must already exist.
- 3) In the **Oracle Gateway Connection** section:
 - a. In the **Host Name** field, enter the machine name or IP address where you installed the Oracle Gateway.
 - b. In the **Port Number** field, enter the Service name where you installed the Oracle Gateway.
 - c. Choose the Service Name or SID option. Enter the Service Name or SID.
- 4) In the **Reporting User** section:
 - a. In the **Username** field, enter or verify your reporting database name (for example, PxRptUser).
 - b. In the **Password** field, enter the password for the reporting database user.
- 5) Click **Next**, and follow the steps in one of the following sections:

- ▶ If you are configuring the ODS database, see **Configuring the Oracle ODS Database Connection** (on page 52) for information on configuring the ODS database connection.
- ▶ If you are configuring the Star database, see **Configuring the Oracle Star Database Connection** (on page 28) for information on configuring the Star database connection.

Configuring the Oracle ODS Database Connection

Use the **ODS Database Connection** screen to configure the Oracle connection settings for the ODS database instance:

- 1) In the **Oracle Database Connection** section:
 - a. In the **Host Name** field, enter the server machine name or IP address where you installed the database.
 - b. In the **Port Number** field, enter or verify the port number for your database.
The default for Oracle is 1521.
 - c. Choose the Service Name or SID option. Enter the Service Name or SID.
- 2) In the **Database Credentials** section, enter the Oracle system username and password:
 - a. In the **Username** field, enter or verify your DBA user name that has DBA privileges for the ODS database. The default name is **SYSTEM**.
 - b. In the **Password** field, enter the password for the DBA user.
- 3) In the **New User** section, enter the connection information for the table owner:
 - a. In the **Username** field, enter or verify the ODS user name. This user will own the ODS tables.
 - b. In the **Password** and **Confirm Password** fields, enter a password for the ODS user.
- 4) Click **Next**.

Configuring ETL Settings for ODS

On the **ETL Settings** screen:

- 1) In the **JVM Location** field, enter or verify the path to the Java Virtual Machine (JRE path).
 - ▶ The appropriate version of JRE must be installed on the machine where the ETL process will run. For information on the specific JRE versions and supported operating system configurations, refer to the testedcfg.html document on the release media or download.
 - ▶ The path must refer to a location on the local machine, where the P6 Reporting Database configuration utility is installed.

- 2) In the **Max Java Heap Size (MB)** field, enter parameter for the Java Heap Size. 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 512 MB.
 - ▶ When changing the Maximum Java Heap Size setting, the values must be in 512 MB increments.
- 3) In the **Log Detail Level** field, choose the level of logging detail that you want to use. The following are the logging detail levels you can choose:
 - ▶ **Errors and Warnings** – Logs errors and warnings.
 - ▶ **General Information** – This is the default value. This logs errors, warnings, and informational messages on the progress of each step.
 - ▶ **Debug and Trace Information** – Provides all general information, errors and warnings, and detailed output of each script, query, and connection being executed.
 - ▶ **Errors Only** – Logs only errors and no other information.
 - ▶ **Extra Debug Information** – Provides all general information, errors and warnings. It provides more fine grained information on each step and scripts being executed.
- 4) In the **General Thread Count** field, choose the number of threads the ETL process will run. Extraction and Load processes are multi-threaded.
Oracle recommends keeping the default (5) for this setting.
- 5) In the **Index Building Thread Count** field, choose the number of threads that will build the index. It specifies how many threads to run for building indexes for the ODS or Star database.
Oracle recommends keeping the default (5) for this setting.
- 6) Click **Next**.

Finishing the Configuration Wizard for ODS

To complete the configuration:

- 1) Choose whether you want to run the **Reporting Database Diagnostic Utility**. It will help you troubleshoot your configuration if you choose to run it.
- 2) Click **Finish**.

This generates all the scripts that go into the scripts directory.

All the settings configured with the ODS database configuration utility will be stored in the following location:

<installation path>\ods\res\odsetl.properties

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

db.ods.application.username=ODSUSER

ODS Security Configuration

This section describes the ODS security configuration tasks. These include adding a new user, modifying user access, and deleting an existing user.

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User-Level Security and User Name Restrictions

For the ODS to properly implement P6 EPPM user-level security, the ODS will create a database-level user if you give a user the **Enterprise Reports** module access in P6 (see the *P6 Help* for more information).

You will have two options for creating security for the ODS user.

Option 1: Use the Database Security Model

For this method, you create the database users, and their views are based on what they have security access to view. The P6 EPPM user name must:

- ▶ Be between 1 and 30 characters. The ODS will remove extra characters.
- ▶ Not have any special characters (such as @ # \$ % , ^ & * . () - + \ / : _ ; | < >, etc.). The ODS will automatically remove special characters. For example, if the P6 EPPM user name is **johnd@company.org**, the ODS database will create this user: **johnd**
- ▶ Not have any spaces.
- ▶ Start with a letter, not a number.

The ODS implements security that applies to the Oracle database, which is why you must use these specifications for the user name.

Database views are created for the ODS tables. The ODS database then creates public synonyms and gives users access to these synonyms. When the ODS database user accesses the tables, row, and fields through these synonyms, a filter is applied that gives users access to data based on their P6 EPPM security attributes.

If the user is an application user and has Enterprise Reports module access in the P6 EPPM database, the Oracle instance of the ODS database will create a database login for the user. The user can log into the P6 EPPM application with the application user password. The user cannot log into the ODS database directly (for example, using SQL Plus) because the ODS user has been created with a randomly generated password. Therefore, the application user must have the ODS database user's password reset by a system administrator.

If you use this option, you will need to use Database Authentication and the JDBC connection with the Proxy option selected when using BI Publisher. If you use this option, your user names would compare as follows:

- ▶ P6 user name: johnd@company.org
- ▶ BI Publisher: johnd

Method 2: Use the Security Package (SECPAC)

Your second option is to use SECPAC. SECPAC is an internal database security package for Oracle that sets session variables for security. If you use SECPAC, you will need to consider the following when using BI Publisher.

- ▶ You can use any authentication mode.
- ▶ You would need to set the pre-process function (call `Secpac.SET_BIP_USER(:xdo_user_name)`) for the JDBC connection setup in BI Publisher.
- ▶ Your user names will be the same in both the P6 and BI Publisher databases.

Adding an ODS User or Updating an Existing User

When adding a new user, the username **must** conform to the format restrictions listed in **User-Level Security and User Name Restrictions** (on page 55).

For detailed information on adding a new P6 EPPM user, see the *P6 EPPM Post Installation Administrator's Guide*, or the *P6 Help*.

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

Use the following procedure to add a new user for the ODS or to update an existing user:

- 1) Login to P6, and add a new ODS user.
 - ▶ This ODS username must start with a letter.
 - ▶ It must also conform to the username format restrictions described in **User-Level Security and User Name Restrictions** (on page 55).
- 2) Configure the user's P6 EPPM security attributes.
- 3) Assign Enterprise Reports module access.
- 4) Run one of the following files to create the database user:
 - ▶ `odsetl.bat` (on a Windows platform)
 - ▶ `odsetl.sh` (on a non-Windows platform)

This adds the user to the ODS database, creates Views for the user, and adds the user to Server Logins.

When `odsetl.bat` (or `odsetl.sh` on a non-Windows system) is run, a new database user will be created in the ODS instance.

- ▶ The user will be given role privileges to the **P6Reports** role. The password for that database user must be manually altered for the user to be able to connect directly as that user.

- ▶ The P6Reports role enables the user to connect and query the public synonyms for 'P6'.

Modifying User Access in ODS

Users given access to the ODS will only be able to access the data for which they have rights in the P6 EPPM database.

For example, if a user has the "Edit EPS Costs/Financials" privilege in the P6 EPPM database, then that user will be able to view project cost information in the ODS. Conversely, if a user does not have the "Edit EPS Costs/Financials" privilege in the P6 EPPM database, they would see the word **null** in place of the value in fields that contain cost information.

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


- 1) In P6, go to **Administer, User Access, Project Security Profiles**.
- 2) To provide access to cost information, ensure that the **Edit EPS Costs/Financials** privilege option is selected in the user's project profile.
- 3) If necessary, assign the **View Resource and Role Costs/Financials** profile to enable users to view resources costs if the user has resource access. It's a global security profile.
- 4) Run one of the following files to create the database user:
 - ▶ odsetl.bat (on a Windows platform)
 - ▶ odsetl.sh (on a non-Windows platform)

Deleting an ODS User

Use the following procedure to delete a user from ODS.

- 1) In the P6 application, remove Enterprise Reports from the user's module access.
- 2) On the machine where the ODS database resides, run one of the following files:
 - ▶ odsetl.bat (on a Windows platform)
 - ▶ odsetl.sh (on a non-Windows platform)

This removes the **create a session** privilege, and removes access to the public synonyms for the database user.

- 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;
```

For information on deleting a P6 EPPM user, see the P6 online help.

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

Finishing the ODS Database Configuration

After you complete the installation and all configuration tasks, execute the `odsetl.bat` (or `odsetl.sh` in a non-Windows environment) file to complete the installation and configuration process by doing the following:

- 1) Go to the <installation directory name> directory.
- 2) Click **odsetl.bat** (or `odsetl.sh`) to execute the file.

Upgrading P6 Reporting Database to the Latest Version

The odsetl.bat (or odsetl.sh on a non-Windows system) and staretl.bat (or staretl.sh on a non-Windows system) will do an update everything when they are run (there are no incremental updates). Follow the procedures in **Upgrading the ODS Database** (on page 60) and **Upgrading the Star Database** (on page 59) to upgrade each of these databases.

Note: The ODS and Star databases **must** be installed in a **new** directory. Do **not** install them in the same directory where a previous version of P6 Reporting Database is installed.

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Upgrading the Star Database

You can upgrade P6 Reporting Database versions 2.0, 2.1, and 2.2 to 3.0. Use the following procedure to upgrade to the latest version if the previous version of P6 Reporting Database included Star.

Note: You cannot upgrade from 1.x versions. If you are upgrading from a 1.x version, you need to do a full install of the new P6 Reporting Database version.

- 1) Upgrade your P6 EPPM database to P6 EPPM 8.1 or 8.2.

Note: Backup your project history before you continue.

- 2) Follow the instructions in **Installing the Star Database** (on page 25).
 - ▶ Use the information in the topics in the **Configuring the Star Database** (on page 26) section to configure it for Oracle.
- 3) Run the following command:
`ALTER USER STARUSER QUOTA unlimited ON STAR_HST1;`
where *STARUSER* is the user name and *STAR_HST1* a tablespace. If you changed the *STARUSER* name, change it in the command; it should match the user name for the database you are upgrading.
- 4) Run the following command:

```
update staruser.w_project_history_f  
set project_wid = mod(project_wid,10000000000);
```

- 5) Run one of the following:
 - ▶ For Windows, run the **staretl.bat 4 5**.
 - ▶ For Linux, run the **./staretl.sh -from 4 -to 5**.
- 6) Do the following:
 - a. Go to the **\scripts** folder.
 - b. Run **upgradeStar.bat** (or **upgradeStar.sh** when upgrading from a non-windows system) to upgrade the Star database.

Upgrading the ODS Database

- 1) Upgrade your P6 EPPM database to P6 EPPM 8.2.
- 2) Follow the instructions in **Installing the ODS Database** (on page 49).
- 3) Use the information in the topics in the **Finishing the ODS Database Configuration** (on page 58) section to configure it for Oracle.
- 4) Drop the existing odsuser:

```
drop user odsuser cascade;
```
- 5) You will have to reapply any customizations done to the existing odsuser.
- 6) The ODS database cannot be installed on a Microsoft SQL Server system.
- 7) Run odsetl.bat (or odsetl.sh on a non-Windows system).

Administrative Tasks

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

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Securing the odsetl.properties and staretl.properties Files

 This section contains information you need when securing the odsetl.properties and staretl.properties files.

Ensure that only the user running the P6 Reporting Database scripts or processes has access to the odsetl.properties and staretl.properties files, which are located in the following folders:

- <installation path>\ods\res
- <installation path>\star\res

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

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.

Clearing and Refreshing the Data

There are times when you might need to clear and refresh all the data in the ODS and Star databases. It is not necessary to uninstall and reinstall P6 Reporting Database to accomplish this task.

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

- 1) Login to the P6 Reporting Database instance with a user account that has the **Drop User** system privilege (such as System).
- 2) Run the following commands:
 - ▶ `drop user odsuser cascade;`
 - ▶ `drop user staruser cascade;`

Caution: Deleting the Star database will also delete the Project, Activity, and WBS history fact data that was accumulated.

- 3) Run the following to drop the public synonyms for P6 EPPM data:

```
begin
for syndrop in (select synonym_name from all_synonyms where synonym_name
like 'P6%')
loop
execute immediate 'drop public synonym '||syndrop.synonym_name;
end LOOP;
end;
```

Dropping the users listed in step 2 of the preceding procedure will remove all data from the P6 Reporting Database instance. You can rerun the following files to populate the ODS and Star databases with the P6 EPPM database information:

- ▶ `odsetl.bat` (on a Windows system) or `odsetl.sh` (on a supported non-windows system)
- ▶ `starsetl.bat` (on a Windows system) or `starsetl.sh` (on a supported non-windows system)

Creating a Filtered ODS

Because the data is already calculated in the P6 EPPM extended tables and P6 EPPM database, a filter can be applied during the `odsetl` process to pull over data matching a determined criteria. By creating a view, the projects that are included in the ODS can be limited to a portfolio, an EPS, or another criteria. This enables much greater customization by creating an ODS with only the projects that are important to the user.

When creating the ODS filter, the view must be created under the `PxRptUser`.

In the following example, a view is created for a specific portfolio called **My Top 10 Projects**, and the filter is called **it_portfolio_view**.

- 1) Use the following to create the `it_portfolio_view` filter:

```
create or replace view it_portfolio_view
as
select PROJECTOBJECTID objectid
from projectportfolio pp, projectprojectportfolio ppp
where pp.objectid = ppp.PROJECTPORTFOLIOOBJECTID
and pp.name = 'My Top 10 Projects'
```

- 2) Edit the odsetl.properties file in \res. Add an entry for **ods.project.filter.ds1=**, and then put in the name of the view that was created.

For example:

```
ods.project.filter.ds1=it_portfolio_view
```

- 3) Run the following command:

```
run ODSETL.bat
```

- 4) After process completes, make sure you can connect to the view through the database link and return the list of object ids. For example:

```
select * from it_portfolio_view@ods2pxrpt
```

This will return the objectid's that will be used to populate the etl_projectlist.

Creating a Filtered Star

Because the data is already calculated in the P6 EPPM extended tables and P6 EPPM database, a filter can be applied during the staretl process to pull over data matching a determined criteria. By creating a view, the projects that are included in the Star can be limited to a portfolio, an EPS, or another criteria. This enables much greater customization by creating a Star with only the projects that are important to the user.

When creating the Star filter, the view must be created under the PxRptUser.

In the following example, a view is created for a specific portfolio called **My Top 10 Projects**, and the filter is called **it_portfolio_view**.

- 1) Use the following to create the it_portfolio_view filter:

```
create or replace view it_portfolio_view
as
select PROJECTOBJECTID objectid
from projectportfolio pp, projectprojectportfolio ppp
where pp.objectid = ppp.PROJECTPORTFOLIOOBJECTID
and pp.name = 'My Top 10 Projects'
```

- 2) Edit the staretl.properties file in \res. Add an entry for **star.project.filter.ds1=**, and then put in the name of the view that was created.

For example:

```
star.project.filter.ds1=it_portfolio_view
```

- 3) Run the following command:

```
run staretl.bat
```

- 4) After process completes, make sure you can connect to the view through the database link and return the list of object ids. For example:

```
select * from it_portfolio_view@dslink01
```

This will return the objectid's that will be used to populate the etl_projectlist.

Scheduling the Database Update

Using a System Task Scheduler to Schedule Recurring ETL Jobs

To keep the ODS and Star databases current, odsetl.bat (or odsetl.sh on a non-Windows system) and staretl.bat (or staretl.sh on a non-Windows system) must be run periodically. Typically, this is done nightly during off hours.

Schedulers 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 the process to run as a recurring job.

Caution: When configuring the scheduler, Oracle recommends that you select the option to not start the next job until the previous job has completed.

Manually Launching the Database Update Process

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

- ▶ odsetl.bat and staretl.bat (on a Windows platform)
- ▶ odsetl.sh and staretl.sh (on a non-Windows platform)

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

History Settings for P6 Reporting Database 3.0

For P6 Reporting Database 3.0, you can control history interval and levels settings on the project level in P6. If you installed a new P6 EPPM database, the settings will be turned off for new projects. To start recording new history for projects, you must turn on the settings in P6. If you upgraded an existing P6 EPPM database to R8.2, the history values will be on and set to Monthly history.

Related Topics

Creating History Data for P6 EPPM R8.2	65
Creating History Data Against a P6 EPPM R8.1 Database	65


Creating History Data for P6 EPPM R8.2

In P6 R8.2, you can define history level and interval settings on a per project basis. Use P6 to configure the type of data stored in P6 Analytics and in what time interval.

To configure history settings:

- 1) Login into P6.

Note: A user must have the **Edit Project Details Except Cost/Financials** profile to edit the history settings.

- 2) Click **Projects**.
- 3) On the **Projects** navigation bar, click **EPS**.
- 4) On the **EPS** page:
 - a. Select a project.
 - b. Click the **Actions** ▼ menu and select  **Set Project Preferences....**
- 5) In the **Project Preferences** pane, click **Analytics**.
- 6) On the **Analytics** page:
 - a. Select the **History Level** and **History Interval** settings.
 You can choose one of the following for History Level:
 - **None** (the default)
 - **Project**
 - **WBS**
 - **Activity**
 You can choose one of the following for History Interval:
 - **Month** (the default)
 - **Week**
 - **Quarter**
 - **Year**
 - **Financial Period**
 - b. Click **Save** to continue working or click **Save and Close** if you are finished.
- 7) Run the publication services to publish the changes you made.
- 8) To create history data, go to the **<Star_install_location>\Star\Scripts** folder and run the **staretl.bat** or **staretl.sh** to run the ETL process.

Creating History Data Against a P6 EPPM R8.1 Database

Star has two new settings that control how the database creates history data: History Interval and History Level.

If you are using P6 Reporting Database 3.0 with a P6 EPPM 8.1 database, you can use these steps to set the interval and level of history data:

Note:

- If you don't make changes in the `staretl.properties` file, located in `<Star_install_location>\Star\Res`, then the default for the history interval is Month and the default for history level is Project.
- The changes you make will apply to all projects that are brought over from the P6 EPPM Extended Views.

-
- 1) Go to the `<Star_install_location>\Star\Res` folder and edit the **staretl.properties** file.

Note: Complete these steps before you run ETL for the first time.

- 2) Add this History Interval line at the end of the file:

```
star.proj.hist.interval=<History_Interval>
```

where `<History_Interval>` is one of these:

- ▶ Week
- ▶ Month
- ▶ Quarter
- ▶ Year
- ▶ FP (for Financial Period)

- 3) Add this History Level line at the end of the file:

```
star.proj.hist.level=<History_Level>
```

where `<History_Level>` is one of these:

- ▶ HL_Project
- ▶ HL_WBS
- ▶ HL_Task
- ▶ HL_None

Tips

To change the history settings after running the ETL process:

- 1) Edit the settings in the **staretl.properties** file.
- 2) Run **staretl.bat**.

After you run the ETL process, history data with the new settings is created. Existing history data remains unchanged.

BI Publisher Administration Tasks

This section describes the BI Publisher administrative tasks, including installing BI Publisher, configuring the JDBC connection, copying the P6REPORTS folder, configuring BI Publisher security, and setting up BI Publisher database authentication.

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About Configuring P6 Database Connection Settings for BI Publisher	67
Installing Oracle BI Publisher	67
Configuring the JDBC Connection	67
Copying the P6REPORTS Folder	68
Configuring BI Publisher Security	68
BI Publisher Database Authentication Setup	69
Setting Up LDAP with BI Publisher	69

Overview of BI Publisher

BI Publisher is an Oracle enterprise reporting solution 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>

About Configuring P6 Database Connection Settings for BI Publisher

The *Connecting BI Publisher to P6 Guide* contains information about configuring P6 database connection settings for BI Publisher and using the P6 Administrator application.

Installing Oracle BI Publisher

For information on installing the Oracle BI Publisher, see the documentation included with BI Publisher

Configuring the JDBC Connection

Login to 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, and do the following:

- a. Create a new data source called **P6RPT**.
- b. Specify connection information, odsuser name/password.
- c. Do one of the following:
 - Choose the option for **Use Proxy Authentication** if you are using the database security model.
 - Choose to specify the Pre Process Function (**Secpac.SET_BIP_USER(:xdo_user_name)**) if you are using the SECPAC security model.

See **User-Level Security and User Name Restrictions** (on page 55) for more information.

- 4) Save the settings.

Copying the P6REPORTS Folder

Copy the **P6REPORTS** folder from the P6REPORTS.zip file to the BI Publisher application deployment location (for example, %BI_HOME%\xmlp\XMLP\Reports (for 10g) or %BIP_WLS_DomainHome%\config\bipublisher\repository\Reports (for 11g)).

Note: The P6REPORTS.zip also includes a folder named "Samples." This folder contains PDF files that show what each of the sample reports would look like when run.

Configuring 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.
- 3) In the Local Superuser section, do the following to configure the name and password of the Local Superuser.
 - a. Select the **Enable Local Superuser** option.
 - b. In the **Superuser name** field, enter the Superuser's name.
 - c. In the **Password** field, enter the Superuser's password.



Note: Oracle BI Publisher enables 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 BI Publisher online help.

- 4) In the Security Model section, do the following to configure the type of security to use.
 - a. From the **Security Model** list, choose the model to use. This can be:
 - BI Publisher Security

- Oracle BI Server
 - Oracle Database
 - LDAP
 - Oracle Fusion Middleware
- b. Enter the **Connection String**. This is the connection string used to connect to the JDBC Data Source you previously configured. See **Configuring the JDBC Connection** (on page 67).
- c. Click **Apply** to save the changes.

BI Publisher Database Authentication Setup

Refer to the documentation for BI Publisher for information on setting up authentication.

Setting Up LDAP with BI Publisher

Refer to the documentation for BI Publisher for information on setting up LDAP.

Running the Configuration Utility

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

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Running the Configuration Utility for the Star Database	72
Changing Passwords	72

Overview of the Configuration Utility

This section describes where to find the information you need to change settings and options after the ODS and Star databases are installed and configured.

For the ODS database, you can change:

- ▶ Java Runtime Environment location
- ▶ Logging detail level
- ▶ Thread Settings

Note: Fields for the P6 EPPM DB and ODS will not be available for change.

For the Star database, you can change:

- ▶ Java Runtime Environment location
- ▶ Logging detail level
- ▶ Thread Settings
- ▶ Activity, Project, and Resource codes
- ▶ Activity, Project, and WBS UDFs

Note: Fields for the P6 EPPM DB and Star will not be available for change.



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

Running the Configuration Utility for the ODS Database

Do the following to run the Configuration Utility for the ODS database:

- 1) Locate the folder where P6 Reporting Database is installed.
- 2) Run the configODS.cmd.
 - a. You will be prompted to enter the proper PxRptUser security authorization in order to access any data from the utility.
 - b. After authorization completes, you should see **Settings** on the configuration utility.
- 3) See **Configuring ETL Settings for ODS** (on page 52) for information on changing these settings.
- 4) Click **Finish** when you are done.

Running the Configuration Utility for the Star Database

Do the following to run the Configuration Utility for the Star database:

- 1) Locate the folder where P6 Reporting Database is installed.
- 2) Run the configStar.cmd command.
 - ▶ You will be prompted to enter the proper PxRptUser security authorization to access any data from the utility.
 - ▶ After authorization completes, verify the information on the **STAR Database Connection** page then click **Next**.
 - ▶ See **Configuring ETL Settings for Star** (on page 28) for information on configuring these settings.
- 3) Click **Finish** when you are done.

Changing Passwords

The passwords must be manually changed for ODS and Star by a user with database administrative privileges. If the administrative user changes the staruser or odsuser password, they must re-run the Configuration Utility and enter the new user password. See the following for information on running the Configuration Utility for ODS and Star.

- ▶ **Running the Configuration Utility for the ODS Database** (on page 72).
- ▶ **Running the Configuration Utility for the Star Database** (on page 72).

Configuring the Secure Sockets Layer



This section describes how to configure the Secure Sockets Layer (SSL). SSL ensures a secure connection between servers over the network.

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Configuring the SSL Connection

This topic directs you to an Oracle web site that will provide an example of creating a self-signed Oracle wallet for the server and client, configuring the database to use TCPS with the server key, configuring an SQL client to connect through the TCPS protocol, and creating simple java clients that show how to connect through TCPS in several different examples. Use these examples to guide you in creating your SSL connection.

Oracle assumes that you already understand the concept of wallets, and that you understand Secure Socket Layer (SSL) functionality.

- 1) Go to the following web site:
<https://support.oracle.com/CSP/ui/flash.html>
- 2) On the My Oracle Support window, do one of the following:
 - ▶ If you already have a Username and Password for Oracle Support, click **Sign In**.
 - ▶ If you are a new user, click the **New user? Register here** link, and follow the instructions to obtain a Username and Password.
- 3) Enter your **Username** and **Password**, and click **Go**.
- 4) On the My Oracle Support Dashboard, in the **Search Knowledge Base** field, enter **762286.1**, and press the **Enter** key (or, click the Search Knowledge Base icon to the right of the field after you enter the number).
- 5) On the Knowledge Browser Dashboard, select **End to End Examples of using SSL with Oracle's JDBC THIN Driver** to see detailed examples. Use these examples as guides to help you configure your system.
- 6) Next, configure P6 Reporting Database to run the ETL process using SSL.

Configuring P6 Reporting Database to Use SSL to Run the ETL Process



Currently, the P6 Reporting Database Configuration Utility does not allow the `staretl.properties` file to be directly configured for TCPS. After it is initially configured for TCP, and after the SSL connection is configured, you must manually configure the P6 Reporting Database so that SSL is used to run the ETL process.

- 1) Using the wallet manager or OraclePKI, export the trusted certificate that is on the server, and copy it to client where P6 Reporting Database is installed.
- 2) On the client machine, import the certificate using the keytool. For example:

```
C:\Program Files\Java\jre1.6.0_20\bin>keytool -importcert -file  
C:\wallets\server_wallet\cert -keystore "C:\Program  
Files\Java\jre1.6.0_20\lib\security\cacerts"
```

Note: The default password for the Java default keystore file `JAVA_HOME/lib/security/cacerts` is 'changeit'.

- 3) Edit the `etl` properties file as follows:
 - a. Replace all occurrences of the default port number with the number of the SSL port.
 - b. Replace all occurrences of **PROTOCOL = TCP** with **PROTOCOL = TCPS**.

Note: In this step, the `etl` properties file refers to the `odsetl.properties` file and the `staretl.properties` file.

- 4) Run the **runSubstitution.cmd** file to update all files with the new port number and TCPS setting. The file is located in the **ERDB_HOME\etl\common** directory.
- 5) Go to the **ERDB_HOME\scripts** directory.
- 6) Edit the **odsetl.bat** (or **odsetl.sh**).
- 7) Add the following variable to the first line of the file:
 - ▶ For Windows:
`SET PRM_SSL_CONNECTION=Y`
 - ▶ For Linux:
`EXPORT PRM_SSL_CONNECTION=Y`

Utility Tables, Log Files, and Troubleshooting

This section describes the 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.

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Log Files

P6 Reporting Database creates extensive log files for each step of the odsetl.bat (or odsetl.sh on a non-Windows system) and the staretl.bat (or staretl.sh on a non-Windows system) processes. 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 database refresh process.

Log files

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

File	Description
odsetlprocess.log	Created when odsetlprocess.bat (or odsetlprocess.sh) is run. Contains the details of the SQL commands run to perform the database refresh updates.
odsetlprocess.html	Created when odsetlprocess.bat (or odsetlprocess.sh) is run. Contains results of the processes run to create the users, tables, and transfer of data. Provides the time it took for each step to run. Derived from the ETL_PROCESSMASTER, ETL_PROCESSINFO, and ETL_PROCESSEXCEPTION tables.

File	Description
staretlprocess.log	Created when staretlprocess.bat (or staretlprocess.sh) is run. Contains the details of the SQL commands run to perform the database refresh updates.
staretlprocess.html	Created when staretlprocess.bat (or staretlprocess.sh) is run. Contains results of the processes run to create the users, tables, and transfer of data. Provides the time it took for each step to run. Derived from the ETL_PROCESSMASTER, ETL_PROCESSINFO, and ETL_PROCESSEXCEPTION tables.

Troubleshooting

P6 Reporting Database writes detailed process information to the "log" directory under the P6 Reporting Database home folder. The log directory contains information about the installation, as well as about each run of the odsetl.bat (or odsetl.sh on a non-Windows system) and staretl.bat (or staretl.sh on a non-Windows system) process. If an error occurs, depending on the nature of the error, diagnostic information might be included within the files of the log directory. Analyzing these files can help lead you to the resolution or to the file or process which caused the error.

Oracle Database Gateway 11.2 reporting incorrect column size

If the Oracle Database Gateway 11.2 reports incorrect column size, and the extract fails, ensure that the following are set in the initdg4msql.ora file:

- ▶ HS_NLS_LENGTH_SEMANTICS=CHAR
- ▶ HS_FDS_CHARACTER_SEMANTICS = TRUE
- ▶ HS_KEEP_REMOTE_COLUMN_SIZE=ALL

The configuration utility does not launch during the P6 Reporting Database installation process

If you are installing P6 Reporting Database and the Configuration utility never launches, the most likely cause is that the location used for JRE is incorrect. To correct this issue, run the following:

- ▶ For ODS on a Microsoft Windows system:
windows\ODS\Disk1\install\setup.exe
- ▶ For ODS on a non-Microsoft Windows system:
<Operating System>\ODS\Disk1\install\runInstaller
- ▶ For Star on a Microsoft Windows system:

windows\StarDisk1\install\setup.exe

- ▶ For Star on a non-Microsoft Windows system:

<Operating System>\Star\Disk1\install\runInstaller

Esure that you specify the correct location for your systems Java Runtime Environment (JRE). The installer will show you an example of the correct path.

ETL and OBI query performance

P6 Reporting Database has default hints that are added based on data samples. The hints aim to improve performance across all data sets. To further improve performance, you can add non-default hints to P6 Reporting Database. You should investigate adding non-default hints if you see bottlenecks in the OBI query performance or when you run the ETL process on your data set.

Contacting Customer Support

See Where to Get Support for detailed information about contacting Customer Support.

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

Uninstalling P6 Reporting Database

This section describes how to uninstall the P6 Reporting Database for Windows and non-Windows systems. For information on supported Windows and non-Windows platforms, see the Tested Configurations document on the release media or download.

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Uninstalling the Software

To uninstall P6 Reporting Database, perform the following steps.

Note: 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 a supported non-Windows platform. For information on supported platforms, see the Tested Configurations document on the release media or download.

- 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.