

Getting Started with the Oracle Server

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Database Administration I © All rights reserved

Objectives

After completing this lesson, you should be able to do the following:

- **Identify common database administration tools available to a DBA**
- **Identify the features of the Oracle Universal Installer**
- **Use SQL*Plus to interact and manipulate an Oracle database**
- **List the main components of Oracle Enterprise Manager**

Database Administration Tools

Tool	Description
Oracle Universal Installer (OUI)	Used to install, upgrade, or remove software components
Oracle Database Configuration Assistant	A graphical user interface tool that interacts with the OUI, or can be used independently, to create, delete, or modify a database
SQL*Plus	A utility to access data in an Oracle database
Oracle Enterprise Manager	A graphical interface used to administer, monitor, and tune one or more databases

Database Administration Tools

The tools listed are covered in this course, but they are only a subset of the utilities supplied by Oracle.

Oracle Universal Installer

- **Used to install, upgrade, or remove software components, and create a database**
- **Based on a Java engine**
- **Features include**
 - **Automatic dependency resolution**
 - **Allows for Web-based installations**
 - **Tracking inventory of component and suite installations**
 - **Deinstallation of installed components**
 - **Support for multiple Oracle homes**
 - **Support for globalization technology**



Oracle Universal Installer

The Java-based Oracle Universal Installer offers an installation solution for all Java-enabled platforms, allowing for a common installation flow and user experience independent of the platform.

The Universal Installer

Detects dependencies among components and performs an installation accordingly

Can be used to point to a URL where a release or staging area was defined and install software remotely over HTTP

Can be used to remove products installed. The deinstallation actions are the “undo” of installation actions.

Maintains an inventory of all the Oracle homes on a target machine, their names, products, and the versions of the products installed on them

Detects the language of the operating system and runs the installation session in that language

Can be run in interactive mode or silent mode. Oracle Universal Installer is run in silent (or non-interactive) mode using a response file.

Starting the Universal Installer

- To start Oracle Universal Installer on UNIX:

```
$ ./runInstaller
```

- To start Oracle Universal Installer on NT:

```
Start > Programs > Oracle Installation  
Products > Universal Installer
```



Starting the Universal Installer

UNIX

The installation program is called `runInstaller` and is located in the `oracle\oui\install` directory.

On UNIX do not run the Installer as a root user.

NT

The installation program is called `setup.exe` and is located in the `Program Files\Oracle\oui\install` directory.

Note: See your operating system–specific Oracle documentation for information about installing Oracle Server on your platform.

Non-Interactive Installation Using Response Files

- Allows for no user interaction
- Response files:
 - Templates must be edited.
 - Text files contain variables and values.
 - Parameters are customized.
- To start Universal Installer in non-interactive mode:

```
./runInstaller -responsefile myrespfile -silent
```



Non-Interactive Installation Using Response Files

Non-interactive installation is performed when no user action is intended or if nongraphical terminals are used for installation.

Installation parameters are customized using a response file. A response file is a text file containing variables and values used by Oracle Universal Installer during the installation process. Example of installation parameters include values for `ORACLE_HOME` and installation types (that is, Typical or Custom Install).

The user first must copy and edit the response file to specify the components to install.

UNIX

Response file templates are available in the `stage/response` directory. On UNIX systems, enter the following at the command line in the directory where the Universal Installer is installed:

```
./runInstaller -responsefile filename [-silent] [-nowelcome]
```

NT

Response file templates are available in the `Response` directory on the CD-ROM. To start Oracle Universal Installer and specify the response file, enter the following command at the command line in the directory where the Universal Installer is installed:

```
setup.exe -responsefile filename [-silent]
```

Note: This is not character mode.

Non-Interactive Installation Using Response Files

Example: Launch the Oracle Universal Installer in non-interactive mode.

UNIX

```
./runInstaller -responsefile FILENAME [-SILENT] [-NOWELCOME]
```

where:

FILENAME: Identifies the response file

SILENT: Runs Oracle Universal Installer in silent mode

NOWELCOME: Does not display the Welcome window. If using SILENT, this parameter is not necessary

Sample Response File for UNIX

```
[General]
```

```
RESPONSEFILE_VERSION=1.7.0
```

```
[Session]
```

```
UNIX_GROUP_NAME="dba"
```

```
FROM_LOCATION="/u01/stage/products.jar"
```

```
ORACLE_HOME="/u01/app/oracle/ora9i"
```

```
ORACLE_HOME_NAME="Ora9i"
```

```
TOPLEVEL_COMPONENT={"oracle.server", "9.0.1.1.1"}
```

```
SHOW_COMPONENT_LOCATIONS_PAGE=false
```

```
SHOW_SUMMARY_PAGE=false
```

```
SHOW_INSTALL_PROGRESS_PAGE=false
```

```
SHOW_REQUIRED_CONFIG_TOOL_PAGE=false
```

```
SHOW_OPTIONAL_CONFIG_TOOL_PAGE=false
```

```
SHOW_END_SESSION_PAGE=false
```

```
NEXT_SESSION=true
```

```
SHOW_SPLASH_SCREEN=true
```

```
SHOW_WELCOME_PAGE=false
```

```
SHOW_ROOTSH_CONFIRMATION=true
```

```
SHOW_EXIT_CONFIRMATION=true
```

```
INSTALL_TYPE="Typical"
```

```
s_GlobalDBName="u01.us.oracle.com"
```

```
s_mountPoint="/u01/app/oracle/ora9i/dbs"
```

```
s_dbSid="db09"
```

```
b_createDB=true
```

Non-Interactive Installation Using Response Files (continued)

Sample Response File (continued)

The General section specifies the version number of the response file.

The Sessions section lists various dialogs of the Universal Installer. Some of the dialogs include:

`FROM_LOCATION`: Specifies the location of the source of the products to be installed

`ORACLE_HOME`: Value for `ORACLE_HOME`

`ORACLE_HOME_NAME`: Value for `ORACLE_HOME_NAME`

`SHOW_INSTALL_PROGRESS`: The installation progress page that appears during the installation phase

`SHOW_ROOTISH_CONFIRMATION`: Set to `TRUE` if the confirmation dialog to run the `root.sh` script needs to be shown

`SHOW_EXIT_CONFIRMATION`: Set to `TRUE` if the confirmation when exiting the installer needs to be shown

The success or failure of a silent installation is generated in a file called `silentInstall.log`.

UNIX

This file will be generated in the `/tmp` directory.

NT

This file will be generated in the directory specified by the `TEMP` variable.

Note: Refer to the operating system–specific installation guide for complete details about setting up a response file.

Oracle Database Configuration Assistant

You use the Oracle Database Configuration Assistant to:

- **Create a database**
- **Configure database options**
- **Delete a database**
- **Manage templates**



Oracle Database Configuration Assistant

Creating a database using Oracle Database Configuration Assistant is covered in the “Creating a Database” lesson.

Database Administrator Users

- **Users `SYS` and `SYSTEM` are created automatically**
 - During database creation
 - Granted the DBA role
- **User `SYS`**
 - Owner of the database data dictionary
 - Default password: `change_on_install`
- **User `SYSTEM`**
 - Owner of additional internal tables and views used by Oracle tools
 - Default password: `manager`



Database Administrator Users

Extra privileges are necessary to execute administrative duties on the Oracle server, such as creating users. Two database user accounts, `SYS` and `SYSTEM`, are created automatically with the database and granted the DBA role. That is, a predefined role that is created automatically with every database. The DBA role has all database system privileges.

`SYS`

When a database is created, the user `SYS`, identified initially by the password `change_on_install`, is created. `SYS` owns the vitally important data dictionary. When connecting as `SYS` it should be made as `SYSDBA` or `SYSOPER`. If you attempt to connect without `SYSDBA` or `SYSOPER` privileges, you will receive the error: `ORA-28009 connecting to SYS should be SYSDBA or SYSOPER`.

Database Administrator Users (continued)

SYSTEM

When a database is created, the user `SYSTEM` is also automatically created. `SYSTEM` is identified initially by the password, `manager`. Additional tables and views owned by the user `SYSTEM` are also created. They contain administrative information used by Oracle tools.

Additional Database Administrator Users

Additional users may be created depending on the mode of database creation, that is, manually or by using Database Configuration Assistant. You should create at least one additional administrator username to use when performing daily administrative tasks.

Default Passwords for `SYS` and `SYSTEM`

For security reasons, the default passwords of `SYS` and `SYSTEM` should be changed immediately after database creation.

Note: Beginning with Oracle9i Release 2, the Database Configuration Assistant will prompt you to specify a password, other than the default, for `SYS` and `SYSTEM`. In addition, when creating a database using the SQL*Plus `CREATE DATABASE` command, the users `SYS` and `SYSTEM` can be identified with passwords other than the default. If passwords are not identified within the `CREATE DATABASE` command, the default passwords will be used.

SQL*Plus

- **An Oracle tool providing:**
 - **Capability to interact with and manipulate the database**
 - **Ability to start up and shut down the database, create and run queries, add rows, modify data, and write customized reports**
- **A subset of the standard SQL language with specific add ons**
- **Connecting to SQL*Plus:**

```
sqlplus /nolog  
connect / as sysdba  
Connected to an idle instance.
```

SQL*Plus

SQL*Plus is an Oracle command-line tool used to run the standard SQL (Structured Query Language) suite of commands. SQL is a functional language that you use to communicate with Oracle to retrieve, add, update, or modify data in the database.

Oracle Enterprise Manager

- **Serves as a centralized systems management tool for DBAs**
- **A tool to administer, diagnose, and tune multiple databases**
- **A tool to administer multiple network nodes and services from many locations**
- **Use to share tasks with other administrators**
- **Provides tools for administering parallel servers and replicated databases**



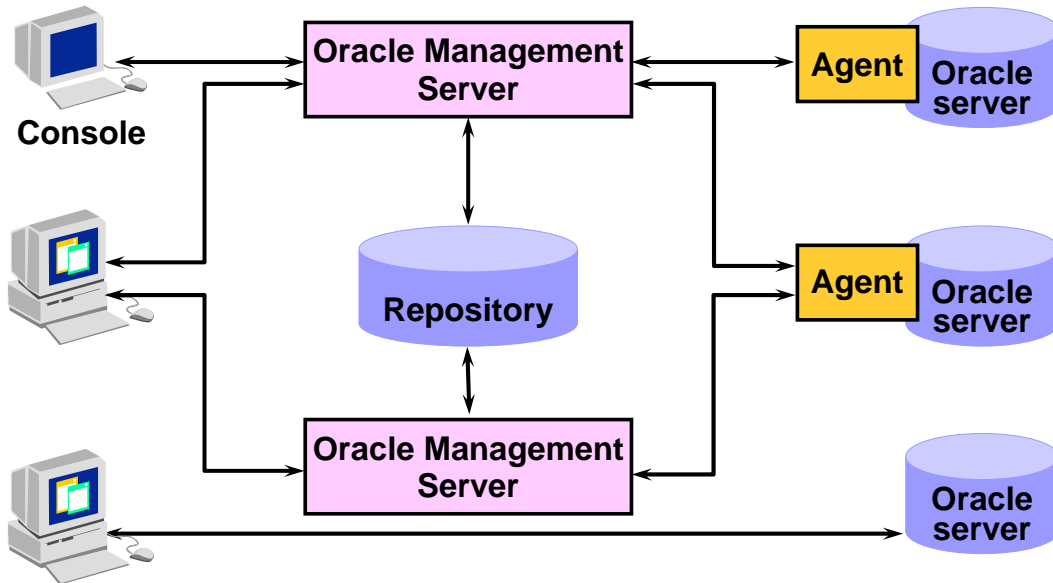
Oracle Enterprise Manager

The Oracle Enterprise Manager is a unified management framework consisting of a Java-based console, a suite of tools and services, and a network of management servers and intelligent agents. It includes both hierarchical tree and graphical representations of the objects and their relationships in the system.

The common services, including job scheduling and management, event management, database discovery and management, service discovery and management, all provide a complete framework for the Oracle Enterprise Manager.

In addition, Oracle Enterprise Manager includes integrated applications that allow you to perform both routine and advanced administration tasks. They include optional packs such as Diagnostics Pack, Tuning Pack, and Change Management Pack, and other applications such as Oracle Net Manager, Spatial Index Advisor, and Text Manager.

Oracle Enterprise Manager: Architecture



Oracle Enterprise Manager: Architecture

Oracle Enterprise Manager utilizes a three-tier architecture, which includes:

First tier: Console clients and integrated tools provide a graphical interface for administrators.

Second tier: Oracle Management Server and a database repository provide a scalable middle tier for processing system management tasks.

Third tier: Intelligent agents installed on each node monitor its services and execute tasks from the Management Server.

Because not all situations need to implement Oracle Enterprise Manager as a three-tier system, Oracle Enterprise Manager is also available in a two-tier architecture, which connects directly to the databases. The console-launched stand-alone allows a single person to use one or more applications without requiring an Oracle Management Server or intelligent agent.

You use a stand-alone console if you want to perform basic administrative tasks that do not require the job, event, or group system.

Oracle Enterprise Manager: Architecture (continued)

Console

The first tier comprises clients such as consoles and management applications, which present graphical user interfaces to administrators for all management tasks. The first tier depends on the second tier Oracle Management Server for the bulk of its application logic.

Note: As of Oracle9*i*, connection to the console can be done as stand-alone. Prior to Oracle9*i*, all connections to the console were made through an Oracle Management Server.

Oracle Management Server

The second tier component of Oracle Enterprise Manager is the Oracle Management Server (OMS). The OMS is the core of the Oracle Enterprise Manager framework and provides administrative user accounts, processes functions such as jobs and events, and manages the flow of information between the console (first tier) and the managed nodes (third tier).

The OMS uses a repository to store all system data, application data, information about the state of the managed nodes, and information about any system-managed packs.

Oracle Enterprise Manager Repository

The repository is a set of tables, created when you set up the OMS. The OMS uses the repository as its persistent back-end store. If necessary, more than one OMS can be used. Multiple OMSs share a repository and provide reliability and fault tolerance.

Nodes

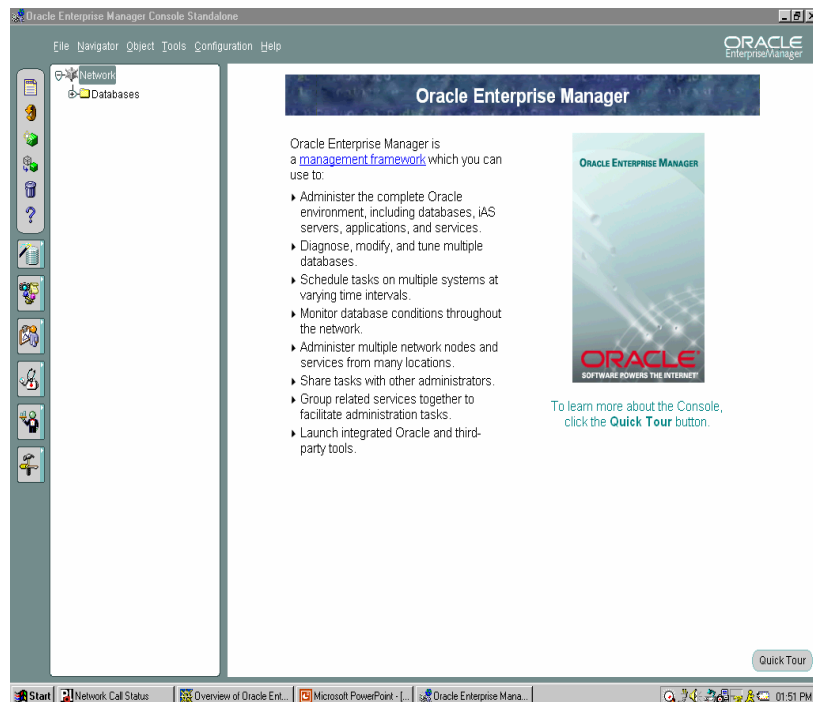
The third tier consists of managed nodes, which contain targets such as databases and other managed services. Residing on each node is an Oracle intelligent agent, which communicates with the OMS and performs tasks sent by consoles and client applications.

Only one intelligent agent is required per node.

An intelligent agent functions independently from the database as well as the console and Oracle Management Server. By running independently of other components, intelligent agents can perform such tasks as starting up and shutting down a database and staying operational if another part of the system is down. The ID for the intelligent agent is `dbstmp`.

Console

- Central launching point
- Can be run in a thin or fat client
- Can be launched stand-alone or via an OMS



Console

The console provides a graphical interface for administrators and a central launching point for all management applications and tools. In addition, SQL*Plus Worksheet can be launched from the console.

The console can be run either in thin mode through the Web or as a fat client. Thin clients use a Web browser to connect to a server where console files are installed, whereas fat clients require console files to be installed locally.

The console can be launched either in stand-alone mode or by connecting to Oracle Management Server.

Note: This course is not intended to give you details about Oracle Enterprise Manager, the console, or Oracle Management Server. For complete details about using Oracle Enterprise Manager refer to the *Oracle Enterprise Manager 9i* course.

How to Start the Oracle Enterprise Manager Console

Example: Start Oracle Enterprise Manager Console.

1. Launch the console:
Start > Programs > Oracle-OraHome92 > Enterprise
Manager Console
2. Start the console by selecting one of the options:
Login to the Oracle Management Server
Launch standalone
3. Click OK.

Summary

In this lesson, you should have learned to:

- **Identify database administration tools**
- **Identify the features of the Oracle Universal Installer**
- **Use SQL*Plus to interact and manipulate the database**
- **Identify the main components of Oracle Enterprise Manager**