12. Use Enterprise Manager Database Control and SQL * plus

1.1. Enterprise Manager Database Control.
Database administration using Enterprise Manager.

Oracle Universal Installer (OUI) installs Oracle Enterprise Manager Database Control when Oracle software is installed. Oracle Enterprise Manager Database Control provides a WEB-based interface that can be used to manage Oracle instance and database.

Oracle Enterprise Manager Database Control is used for:

• View information about the performance and status of the database user model;

    • Creating database storage structures (such as table spaces);

    • Creating schema objects (such as tables and indexes);

    • Consumer protection management;

    • Database archiving;

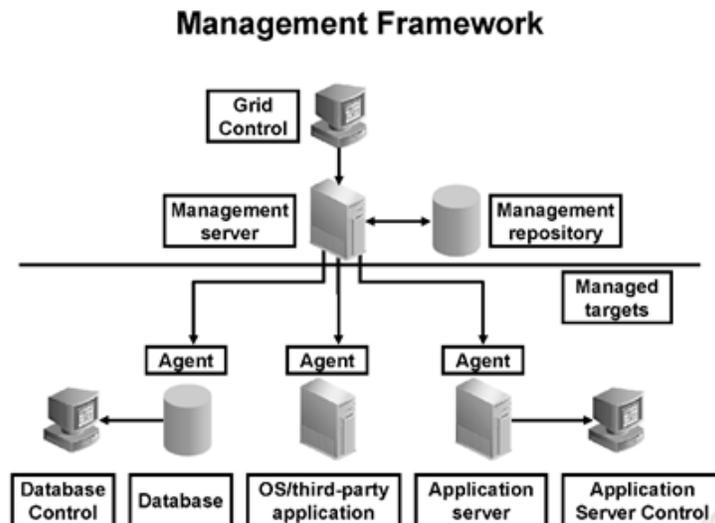   • Database recovery;

    • Import and export data;

Fig. 12.1. Oracle Enterprise Manager - Management Framework.

Oracle Enterprise Manager architecture provides a high degree of flexibility and functionality. Oracle Enterprise Manager can be easily customized to meet the needs of monitoring and administration of a specific environment.

A typical Oracle Enterprise Manager framework configuration consists of the following functional areas (figure 12.1):

• Managed goals
• Management services
• Network control
• Database management
• Application server control

In this course, Oracle Enterprise Manager Database Control is used to manage the user database.

Start the Enterprise Manager console process.

To access Oracle Enterprise Manager, you must start the dbconsole Database Control process from the client browser. The dbconsole process starts automatically after installation.

If the process is not started, it can be started manually at the command line as follows:
1. The $ ORACLE_HOME / bin directory opens.
2. The command emctl start dbconsole is executed (Fig. 12.2.).
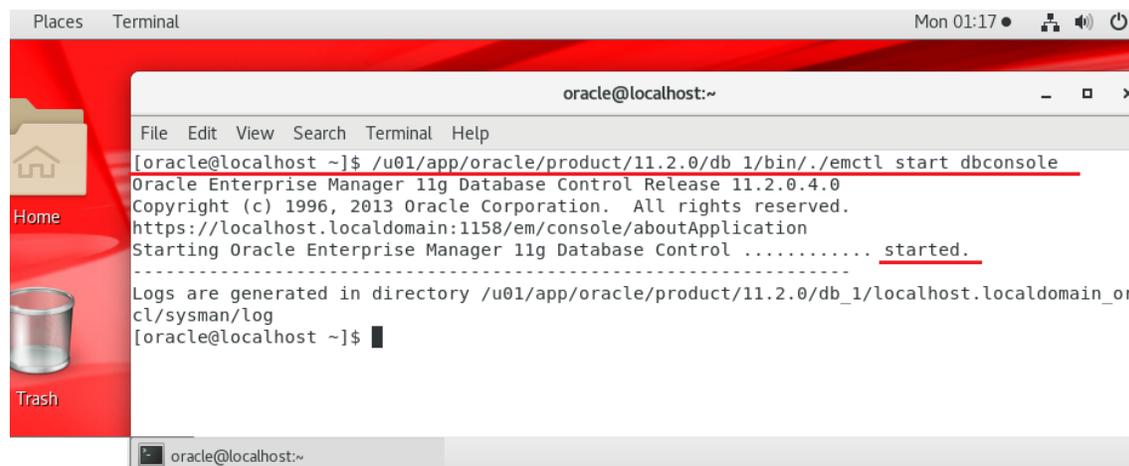
Fig. 12.2. Start the dbconsole process.

Overview of the status of the dbconsole process - as follows:
[oracle @ hostname ~] $ emctl status dbconsole

Access to Enterprise Manager for database management.
https://host name:1158/em
In this case it is localhost.localdomain.
Access to Oracle Enterprise Manager database management can be obtained by opening a web browser and entering the following URL:

http: // port number of hostname / em
https: // host name: 1158 / em
in this case it is localhost.localdomain: 1158 / em

The host name is the name or address of the computer. The port number is the HTTPS port number for Oracle Enterprise Manager database management. The default is 1158. The value for the specific system can be found in the file $ ORACLE_HOME / install / portlist.ini. When executing the emctl status dbconsole command, the port number can also be seen.

If the instance is started and the database is open, Oracle Enterprise Manager displays the login page for the management database.

If the instance is "shut down" and needs to be started, or the database is installed, Oracle Enterprise Manager displays the "Start / Shutdown and Recovery" page. Oracle instance. "

Note: The database management page cannot be opened if the listener is off.
Startup:

[oracle@localhost ~]$ lsnrctl
LSNRCTL for Linux: Version 11.2.0.4.0 - Production on 20-MAY-2019 01:22:32
Copyright (c) 1991, 2013, Oracle. All rights reserved.
Welcome to LSNRCTL, type "help" for information.
LSNRCTL> start
Starting /u01/app/oracle/product/11.2.0/db_1/bin/tnslsnr: please wait...
…
The listener supports no services
The command completed successfully
LSNRCTL> exit
[oracle@localhost ~]$

Starting the Oracle instance can be done from SQL * plus:

[oracle@localhost ~]$ sqlplus
    SQL*Plus: Release 11.2.0.4.0 Production on Mon May 20 01:26:08 2019
    Copyright (c) 1982, 2013, Oracle. All rights reserved.
    Enter user-name: sys as sysdba
    Enter password:_____
    Connected to an idle instance.

```
SQL> startup
    ORACLE instance started.
    Total System Global Area 1119043584 bytes
    Fixed Size                  2252504 bytes
    Variable Size             704643368 bytes
    Database Buffers          402653184 bytes
    Redo Buffers                9494528 bytes
Database mounted.
Database opened.
SQL> exit
    Disconnected from Oracle Database 11g Enterprise Edition Release
    11.2.0.4.0 - 64bit Production
    With the Partitioning, OLAP, Data Mining and Real Application Testing
    options
[oracle@localhost ~]$
```

Enterprise Manager: Database management login.

To access the database, you must use a username that is authorized to access database control. Initially, SYS, SYSTEM and SYSMAN users are allowed.

You can access Enterprise Manager's Database Management as follows:
1. Open the web browser and enter the following URL:

HTTPS: // hostname: port / em

Enter SYS in the User Name field. Enter the password that was set for the SYS user during the creation of the database in the Password field (Fig. 12.3.). Select SYSDBA from the Connect As list.

SYSDBA is an administrator privilege that allows certain types of database operations to be performed.

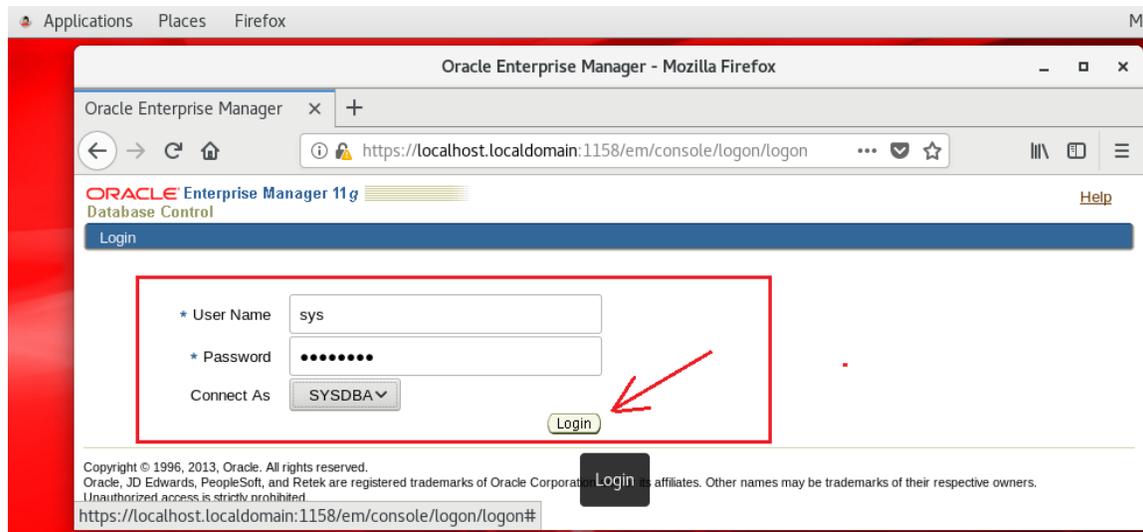1. Select Login. The database home page is displayed.

Fig. 12.3. Login.

Enterprise Manager: Database home page.

The database home page shows the current state of the database, showing a series of indicators that depict the overall "health" of the database (fig. 12.4.). Additional pages can be accessed from the properties pages to manage specific aspects of the user database.

The following information about the performance and status of the database instance can be found on the database management home page:

• name of the instance, version of the database, location of Oracle home, media recovery options and other relevant instance data;

• availability of the current instance;

• emergency warnings;

• session and SQL related information;

• key indicators for space use.
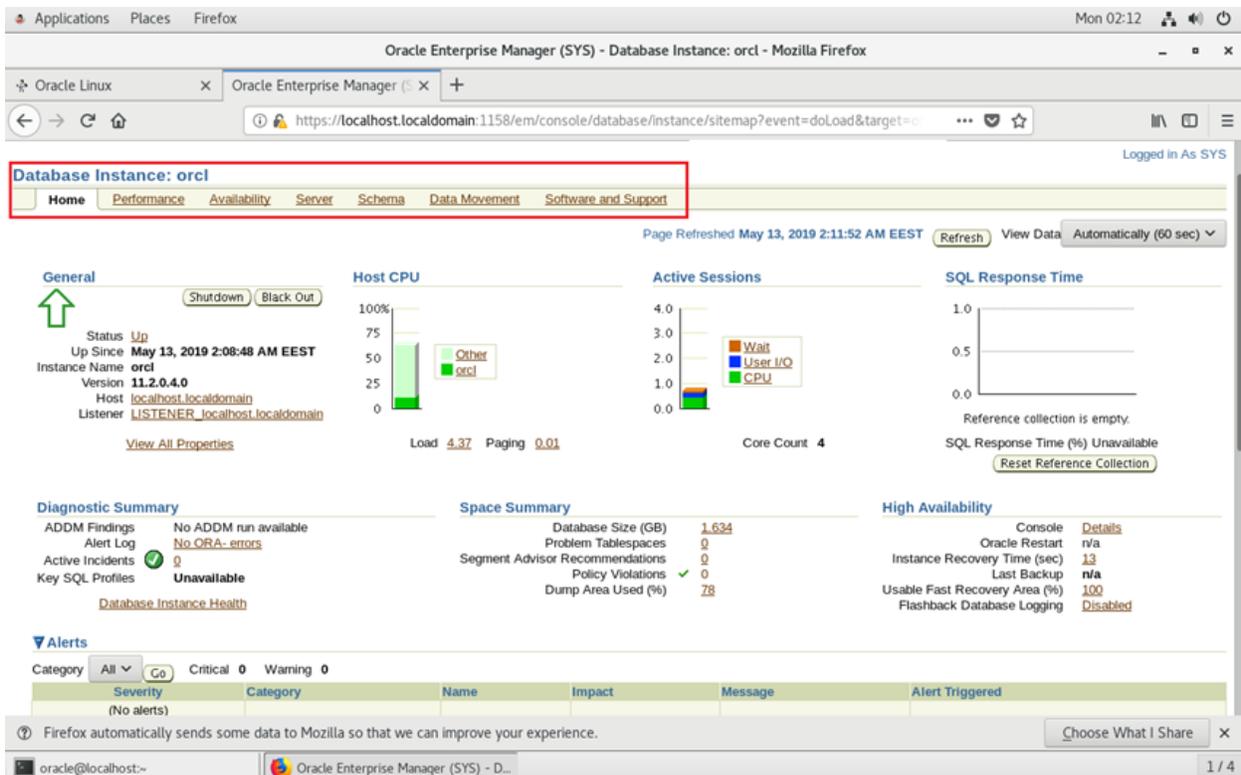
Fig. 12.4. Home page for database management.

Work and configuration tools pages (fig. 12.5.):
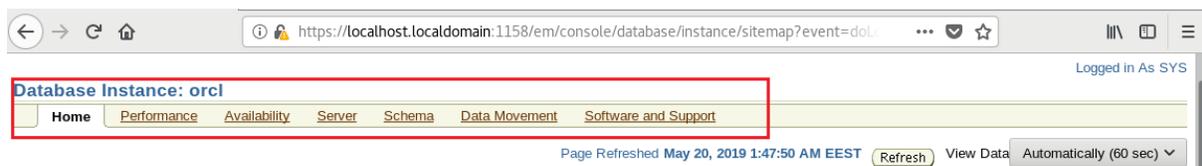
Fig. 12.5. Work and configuration tools.

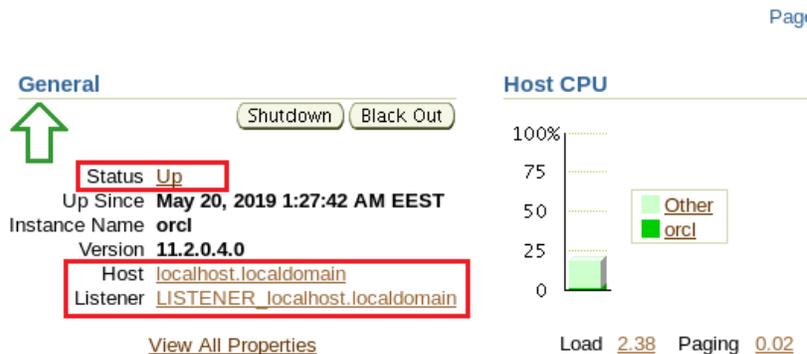Support links providing more details (fig. 12.6.):

Fig. 12.6. Enterprise Manager - Support links.

Suggested quick links to more important tools at the bottom of the window (fig. 12.7.):

Fig. 12.6. Enterprise Manager - Quick Links.

Grant administrative privileges to the Enterprise Manager.

Administrators are database users defined in the management repository who can log in to Enterprise Manager to perform management tasks. The amount of management tasks available in Enterprise Manager depends on the privileges and roles assigned to administrators.

Granting privileges to manage other database users is done as follows:

1. Log in to Database Control as a SYS user.

2. Click on Setup at the top of the home page of the database (fig. 12.7.).

Fig. 12.7. Enterprise Manager - Setup.

3. Click on Administrators in the left navigation bar (fig. 12.8.).

Fig. 12.8. Enterprise Manager - Administrators.

Users of databases with management privileges are listed.

4. Select Create to create a new Enterprise Manager user by assigning management rights to an existing database user (fig. 12.9.).
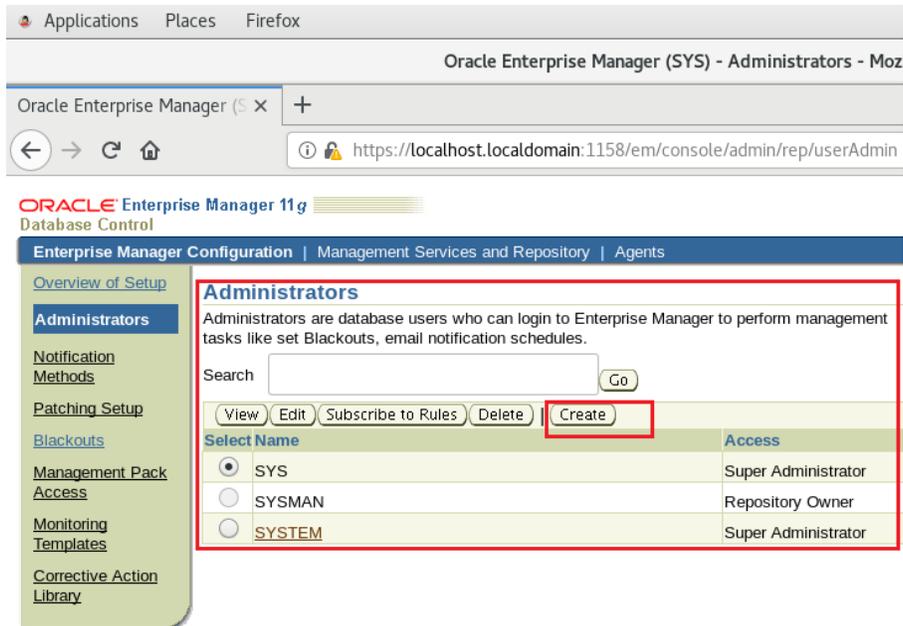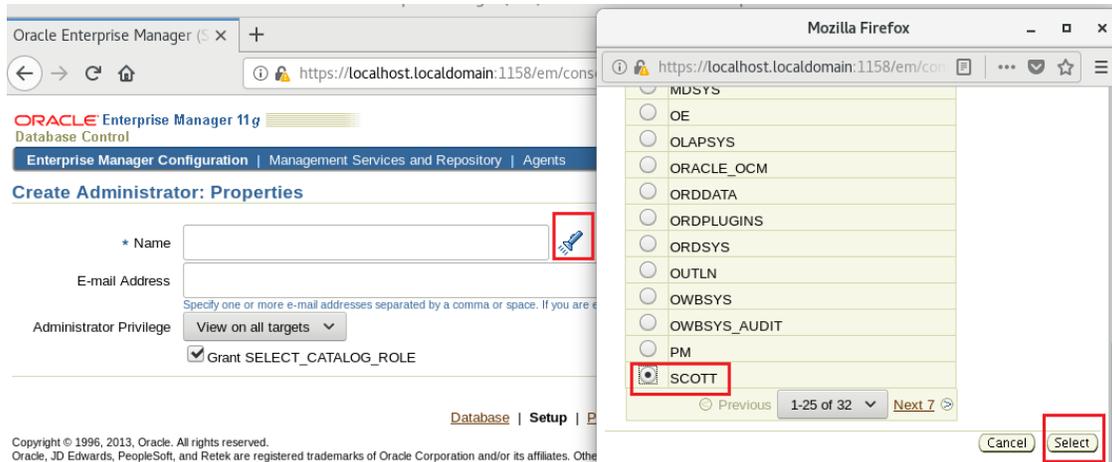

Fig. 12.9. Enterprise Manager - creating a new user.

5. Select the flashlight icon next to the Name field, then select an existing database user from the pop-up window.

6. Enter the password for the selected user and select Finish (Fig. 12.10.).

Fig. 12.10. Enterprise Manager - configure a new user..

Configure Enterprise Manager settings and preferences.

Enterprise Manager allows you to configure database management settings and preferences.

These include the following:

• Notifications: Notification methods, rules and schedules can be configured. Notifications can be configured to receive email notifications. By default, the Enterprise Manager database home page lists all alerts.

• Blackouts: Blackout periods can be configured to stop monitoring. Periods of "Blackout" are defined so that false alarms are not sent.

• Preferred credentials: Enterprise Manager automatically performs many routine administrative tasks (such as archiving) for the user. This is done with the help of a complex built-in work planning system. To keep the user environment secure, setting automatic execution tasks in Enterprise Manager requires providing login information and a database. To avoid entering this information each time a task is created, Enterprise Manager allows you to save this information as your favorite credentials. Preferred identification data is stored in the database in encrypted form to protect against unauthorized use.

Defining Blackout Periods.

Blackouts allow you to stop monitoring one or more targets for maintenance operations. Interruption periods are defined to prevent alert notifications when the maintenance database is shut down.

When planning to display the maintenance database, it can be stated that alert notifications should not be sent to the user, defining an Blackout period. Blackouts also allow you to stop monitoring other maintenance operations.

A Blackout period can be defined in Enterprise Manager Database Management by following these steps:

1. Click Setup at the top of the database home page. The installation page appears.

2. Blackouts in the left frame are selected. The Blackouts page appears (fig. 12.11.).

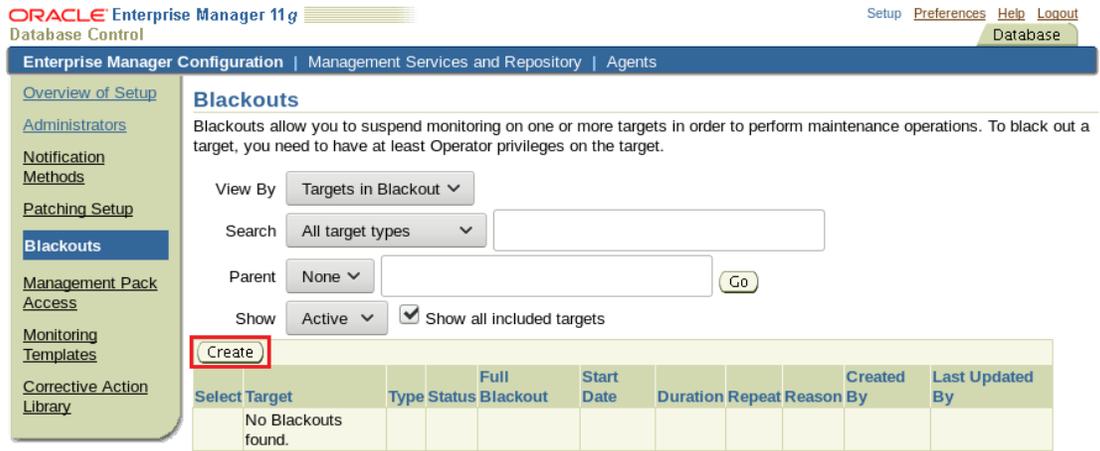3. Select Create to start the Blackout Wizard.

Fig. 12.11. Create a Blackout.

4. Enter a name for the Blackout in the Name field (fig. 12.12.). The cause of the Blackout is chosen. Select Database in the drop-down menu, Type in the Available targets area. Select the user database and click Move. Next, select Next. The Create Blackout: Schedule page appears.
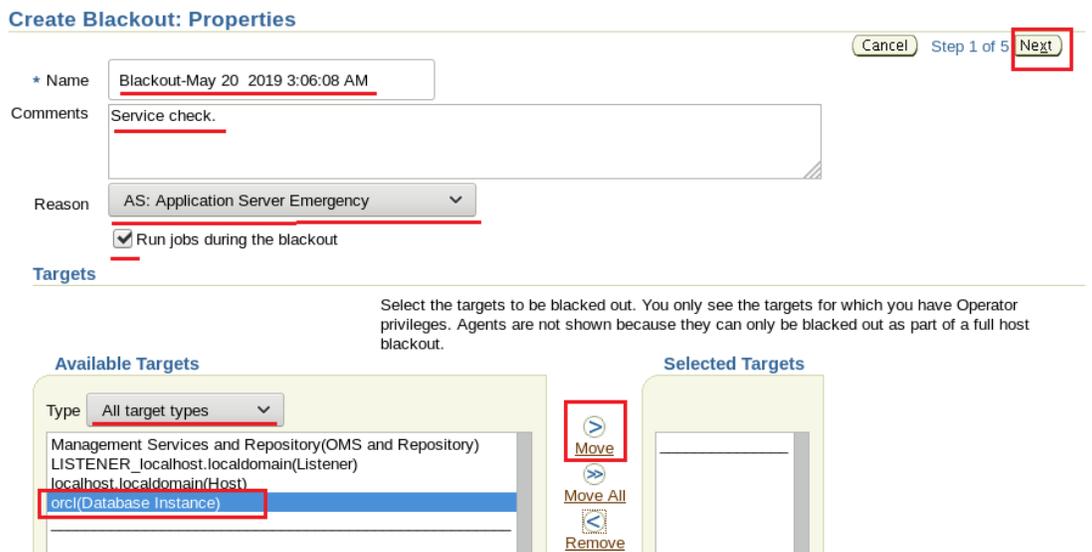

Fig. 12.12. Blackout configuration.

5. Enter the start time of the planned Blackout or select Immediate if the database will now be switched off (fig. 12.13.). The duration of the Blackout is chosen: "indefinite", "time", or "until the future". Accepted by default "Do not repeat" or select a repeat frequency in the drop-down menu. Choose Next.

Fig. 12.13. Blackout Planning.

6. The Create Blackout: Overview page appears (fig. 12.14). The input is reviewed and Done is selected. It can be selected on Back if a setting needs to be changed. A confirmation message will be received
.

Fig. 12.14. Blackout Planning - Overview.

Set favorite credentials

Preferred credentials can be set so that Enterprise Manager automatically provides host and database credentials when scheduling tasks and tasks to perform administrative operations such as backup and recovery. For security, credentials are stored in encrypted mode.

You can set preferred credentials in Enterprise Manager Database Management by following these steps:

1. Select "Preferences" at the top of the database home page. The Preferences page appears.
2. Select "Preferred access data" in the left frame (fig. 12.15.). The preferred access data page is displayed.

Fig. 12.15. Preferences.

3. Select the icon under "Set Credentials" for a specific database item. Then the page for entering user access data is displayed (fig. 12.16.).
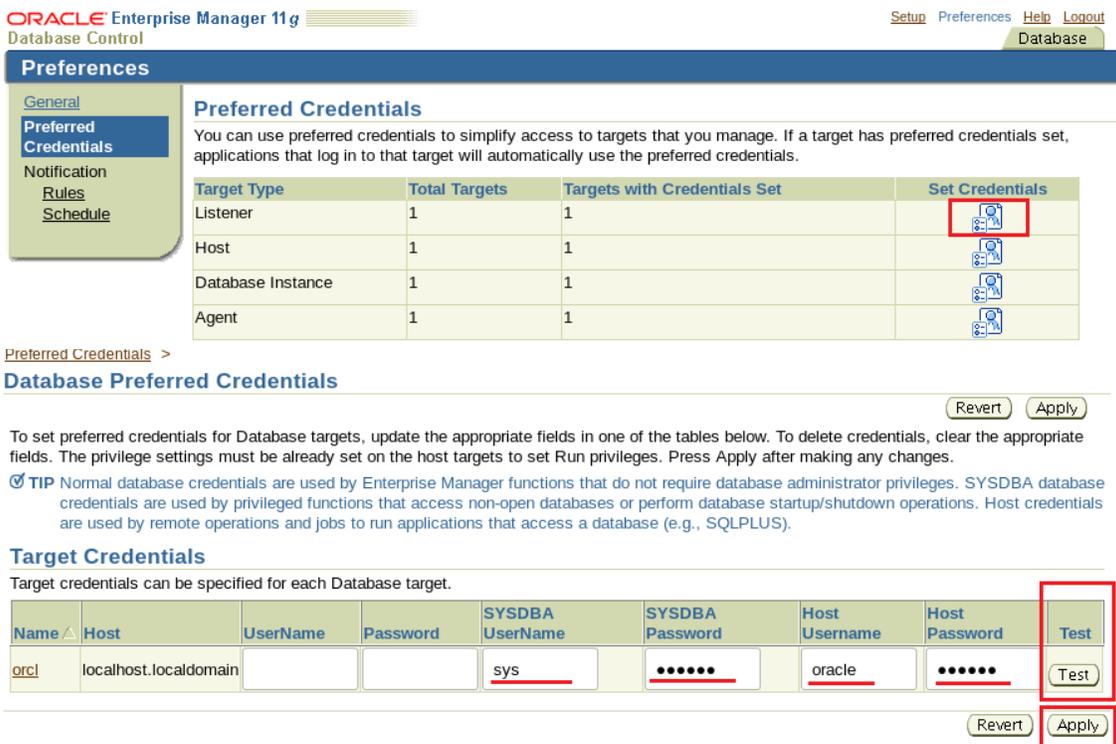

Fig. 12.16. Set user access data.

4. Enter the identification data in the form of a username and password for the specified users. "Test" is selected.

5. A confirmation message is received that the credentials have been confirmed. Apply is selected to save the preferred access credentials.

1.2. Use SQL * Plus to access a user database.

SQL * Plus provides a command line interface to a database that allows actions:
- Performing database management operations;
- Execute SQL commands for querying, inserting, updating and deleting data in the database.

• SQL * Plus can be used interactively or in group mode.

In addition to Enterprise Manager, SQL * Plus can be used to execute SQL statements. This tool allows you to perform many of the known database management operations, as well as set, enter, update and delete data in the database.

SQL * Plus can be used to enter SQL commands for:
• tables for queries in the database;
• inserting, updating and deleting rows in the database;
• performing database administration operations.

In addition, PL / SQL commands can be entered and SQL * Plus commands can be used for formatting and reporting.
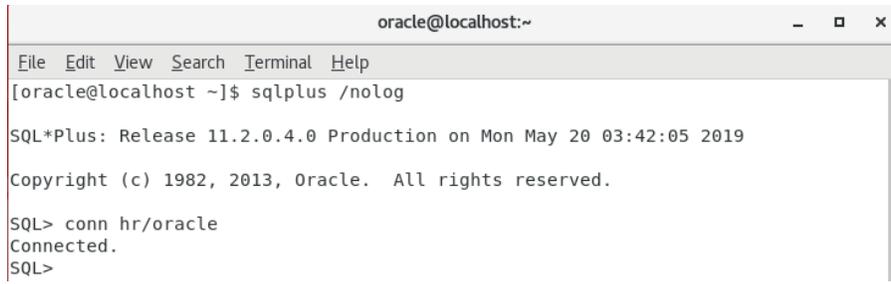
SQL * Plus can be called by performing the following steps (fig.2.17.):

1. A terminal window opens.
2. Enter the following in the command prompt:

$ sqlplus / nolog

3. Enter connect and the username / password as shown in the following example:

SQL> connect hr / hr
(or connect scheme / pass)

*Fig. 12.17. Working with SQL * Plus.*