

Symantec™ Data Loss Prevention Oracle 11g Installation and Upgrade Guide

Version 11.6



Symantec Data Loss Prevention Oracle Installation and Upgrade Guide

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Installing Oracle 11g on Windows

This chapter includes the following topics:

- [About Symantec Data Loss Prevention and Oracle upgrades](#)
- [About the Oracle 11g installation](#)
- [Installing Oracle 11g on Windows](#)
- [Downloading the Oracle 11g software for Windows](#)
- [Installing the Oracle 11g software for Windows](#)
- [Creating the Symantec Data Loss Prevention database](#)
- [Creating the TNS Listener on Windows](#)
- [Configuring the local net service name](#)
- [Verifying the Symantec Data Loss Prevention database](#)
- [Creating the Oracle user account for Symantec Data Loss Prevention](#)
- [Locking the DBSNMP Oracle user account](#)

About Symantec Data Loss Prevention and Oracle upgrades

If you need to upgrade both your Symantec Data Loss Prevention software and Oracle software, perform the upgrades in the following order:

Upgrade steps

- 1 Upgrade your Oracle software to version 11.2.0.3. Follow the appropriate upgrade procedure as described in this guide.
- 2 If you also need to migrate the hardware that you use to host your Oracle database from 32-bit hardware to 64-bit hardware, perform the migration procedure. See [“About migrating Oracle from a 32-bit to 64-bit Oracle database”](#) on page 139.
- 3 Upgrade your Symantec Data Loss Prevention software. See one of the following documents:
 - *Symantec Data Loss Prevention Upgrade Guide for Windows*
 - *Symantec Data Loss Prevention Upgrade Guide for Linux*
 - *Symantec Data Loss Prevention Standard Upgrade Guide for Windows*
 - *Symantec Data Loss Prevention Standard Upgrade Guide for Linux*

About the Oracle 11g installation

To use Symantec Data Loss Prevention, install Oracle 11g Release 2 and create a database using the Symantec Data Loss Prevention database template. You must also create an Oracle user account with the correct permissions to access and modify the database. The Enforce Server uses this account to store configuration and incident data for the Symantec Data Loss Prevention deployment.

You can perform a two-tier or single-tier Symantec Data Loss Prevention installation. In both of these cases, the database runs on the same computer as the Enforce Server. Alternatively, you can perform a three-tier Symantec Data Loss Prevention installation. In this case, the database runs on a different computer from the Enforce Server.

If you implement a three-tier installation, you must install the Oracle Client (SQL*Plus and Database Utilities) on the Enforce Server. Installation of the Oracle Client enables database communications between the Oracle database server and the Enforce Server. The Symantec Data Loss Prevention installer needs SQL*Plus to create tables and views on the Enforce Server. For this reason, the Windows user account that is used to install Symantec Data Loss Prevention needs access to SQL*Plus.

For full details on how to install the Oracle 11g Database Client software, see the platform-specific documentation from Oracle Corporation, available from the Oracle Documentation Library at

http://www.oracle.com/pls/db111/portal.portal_db?selected=11.

Note: After you create the Symantec Data Loss Prevention database and complete the Symantec Data Loss Prevention installation, you can change the database password. To change the database password, you use the Symantec Data Loss Prevention DBPasswordChanger utility.

For more information about the Symantec Data Loss Prevention DBPasswordChanger utility, see the *Symantec Data Loss Prevention Administration Guide*.

About the Oracle 11g Client software for Windows

For full details on how to install the Oracle 11g Database Client software, see the *Oracle Database Client Installation Guide 11g Release 2 (11.2) for Microsoft Windows*. To view this document, see

http://download.oracle.com/docs/cd/E11882_01/install.112/e10844/toc.htm.

Installing Oracle 11g on Windows

Install Oracle 11g and create the Symantec Data Loss Prevention database by performing the following steps on the server computer that will host the Oracle database.

Table 1-1 Installing Oracle 11g and creating the Symantec Data Loss Prevention database

Step	Action	Description
Step 1	Review the system requirements for the Oracle 11g.	See the Oracle Web pages for the system requirements for Oracle 11g and the <i>Symantec Data Loss Prevention System Requirements and Compatibility Guide</i> .
Step 2	Download the Oracle 11g software.	See “ Downloading the Oracle 11g software for Windows ” on page 14.
Step 3	Install Oracle 11g.	See “ Installing the Oracle 11g software for Windows ” on page 15.
Step 4	Create the Symantec Data Loss Prevention database.	See “ Creating the Symantec Data Loss Prevention database ” on page 16.

Table 1-1 Installing Oracle 11g and creating the Symantec Data Loss Prevention database (*continued*)

Step	Action	Description
Step 5	Create the database listener.	See “ Creating the TNS Listener on Windows ” on page 19.
Step 6	Configure the local net service name.	See “ Configuring the local net service name ” on page 22.
Step 7	Create the Symantec Data Loss Prevention database user.	See “ Creating the Oracle user account for Symantec Data Loss Prevention ” on page 24.
Step 8	Lock the DBSNMP account for security purposes.	See “ Locking the DBSNMP Oracle user account ” on page 25.
Step 9	Install the Oracle Critical Patch Update (CPU).	The latest <i>Oracle 11g Release 2 Critical Patch Update Guide</i> explains how to download and apply the CPU for Oracle.

Downloading the Oracle 11g software for Windows

You should have received a Symantec Serial Number Certificate with your order that lists a serial number for each of your products. If you did not receive the certificate, contact Symantec Customer Care as described at http://www.symantec.com/business/support/assistance_care.jsp. If you have multiple serial numbers, locate the serial number that corresponds to Oracle Standard Edition.

Go to <https://fileconnect.symantec.com> and enter the serial number. Proceed to the list of available downloads and download and extract the following files:

- Oracle_11.2.0.3.0_Server_Win32_1of2.zip and
Oracle_11.2.0.3.0_Server_Win32_2of2.zip (for 32-bit installations)
These ZIP files contain the 32-bit Oracle 11g Release 2 software
(win32_11.2.0.3_database_1of2.zip and
win32_11.2.0.3_database_2of2.zip).
- Oracle_11.2.0.3.0_Server_Win64_1of2.zip and
Oracle_11.2.0.3.0_Server_Win64_2of2.zip (for 64-bit installations)

This ZIP file contains the 64-bit Oracle 11g Release 2 software (win64_11.2.0.3_database_1of2.zip and win64_11.2.0.3_database_2of2.zip).

- Oracle_11.2.0.3.0_Server_Installation_Tools_Win.zip
- This ZIP file contains the Symantec Data Loss Prevention Oracle database template and database user SQL script (11g_r2_32_bit_Installation_Tools.zip and 11g_r2_64_bit_Installation_Tools.zip).

Installing the Oracle 11g software for Windows

The Enforce Server uses the Oracle thin driver and the Oracle Client. Symantec Data Loss Prevention packages the JAR files for the Oracle thin driver with the Symantec Data Loss Prevention software. But, you must also install the Oracle Client. The Symantec Data Loss Prevention installer needs SQL*Plus to create tables and views on the Enforce Server. Therefore, the Windows user account that is used to install Symantec Data Loss Prevention must be able to access to SQL*Plus.

See [“About the Oracle 11g Client software for Windows”](#) on page 13.

To install Oracle 11g Release 2

- 1 Shut down the following services if they are running in Windows Services:
 - All Oracle services
 - Distributed Transaction Coordinator service

To view the services go to **Start > Control Panel > Administrative Tools > Computer Management**, and then expand **Services and Applications** and click **Services**.
- 2 Unzip the required software installation files:
 - For 32 bit systems, unzip the win32_11.2.0.3_database_1of2.zip and win32_11.2.0.3_database_2of2.zip files into a common temporary directory.
 - For 64-bit systems, unzip the win64_11.2.0.3_database_1of2.zip and win64_11.2.0.3_database_2of2.zip files into a common temporary directory.
- 3 To install the Oracle software, navigate to the database directory that is located inside the common temporary directory and double-click the Oracle Universal Installer file, setup.exe.

- 4 On the **Configure Security Updates** panel, deselect **I wish to receive security updates via My Oracle Support**, and click **Next**.

A dialog box displays that asks you to confirm that you wish to remain uninformed of critical security issues. Select **Yes**.

Symantec certifies and provides Oracle Critical Patch Updates for use with Symantec Data Loss Prevention, along with detailed installation instructions. You do not need to receive these updates from Oracle Support.

- 5 On the **Download software updates** panel, select **Skip software updates** and click **Next**.
- 6 On the **Select Installation Options** panel, select **Install database only** and click **Next**.
- 7 On the **Grid Installation Options** panel, select **Single instance database installation** and click **Next**.
- 8 On the **Select Product Languages** panel, click **Next** to accept English as the default language.
- 9 On the **Select Database Edition** panel, select **Standard Edition** and click **Next**.
- 10 On the **Specify Installation Location** panel, enter the following paths in the specified fields, and click **Next**:

- **Oracle Base:** Enter `c:\oracle`

- **Software Location:** Enter `c:\oracle\product\11.2.0.3\db_1`

Note: All example paths in this document use the installation directory `c:\oracle\product\11.2.0\db_1`. If you specify a different installation directory, substitute the correct path as necessary throughout this document.

The installer application performs a prerequisite check and displays the results.

- 11 On the **Summary** panel, click **Install** to begin the installation.
The installer application installs the Oracle 11g software to your computer.
- 12 On the **Finish** panel, click **Close** to exit the installer application.

Creating the Symantec Data Loss Prevention database

Perform the following procedure to create the Symantec Data Loss Prevention database.

Note: If you are installing Oracle 11g on a 64-bit computer to migrate an existing 32-bit Symantec Data Loss Prevention database, do not perform this procedure.

See [“Migrating from Oracle 10g 32-bit to Oracle 11g 64-bit”](#) on page 140.

To create the Symantec Data Loss Prevention database

- 1 Set the ORACLE_HOME environment variable for your new installation. Open a command prompt, and enter:

```
set ORACLE_HOME=c:\oracle\product\11.2.0.3\db_1
```

If you installed Oracle 11g into a different location, substitute the correct directory in this command.

You may want to configure your Windows system to automatically set the ORACLE_HOME environment variable each time you log on. See your Windows documentation for details about setting environment variables.

- 2 Extract the database template file (.dbt file) from the
11g_r2_32_bit_Installation_Tools.zip or
11g_r2_64_bit_Installation_Tools.zip file to the
%ORACLE_HOME%\assistants\dbca\templates folder. For example, copy
Oracle_11g_Database_for_Vontu_v11_32_bit.dbt for 32-bit installations,
or copy Oracle_11g_Database_for_Vontu_v11_64_bit.dbt for 64-bit
installations.
- 3 Click the Windows Start menu and locate the **Start > All Programs > Oracle - OraDb11g_home1 > Configuration and Migration Tools** menu item.
- 4 Right click on the **Start > All Programs > Oracle - OraDb11g_home1** menu item and select **Rename**.
- 5 Rename the **OraDb11g_home1** portion of the menu item to **Oracle_11.2.0.3**.
- 6 Start the Oracle Database Configuration Assistant to create the Symantec Data Loss Prevention database. Choose **Start > All Programs > Oracle - Oracle_11.2.0.3 > Configuration and Migration Tools > Database Configuration Assistant**.
- 7 On the **Welcome** panel, click **Next**.
- 8 On the **Operations** panel, select **Create a Database** and click **Next**.

- 9 On the **Database Templates** panel, select **Oracle 11g Database for Vontu v11 32 bit** for 32-bit installations, or select **Oracle 11g Database for Vontu v11 64 bit** for 64-bit installations. Click **Next**.

Caution: You must use the Symantec Data Loss Prevention template to create the database. Do not use an alternate template or reuse an existing database instance. If you do not use the supplied template, failures can occur when you use Symantec Data Loss Prevention. Failures can also occur later when you try to upgrade the product.

- 10 On the **Database Identification** panel, set the database name (Global Database Name) and the Oracle System Identifier (SID) by performing the following steps in this order:
- Enter **protect** in the **Global Database Name** field.
The **SID** field is automatically set to **protect**. Keep the SID and the Global Database Name fields as the same value, "protect."
 - Click **Next**.
 - Write down the database name and SID for later use when you install the Symantec Data Loss Prevention software.
- 11 On the **Management Options** panel, perform the following steps in order:
- Deselect **Configure Enterprise Manager**.
 - Select the **Automatic Maintenance Tasks** tab and deselect **Enable automatic maintenance tasks**.
 - Click **Next**.
- 12 On the **Database Credentials** panel, perform the following steps in order:
- Select **Use the Same Administrative Password for All Accounts**.
 - Enter a password in the **Password** field.
 - Re-enter the same password in the **Confirm Password** field.
 - Click **Next**.

Follow these guidelines to create acceptable passwords:

- Passwords cannot contain more than 30 characters.
- Passwords cannot contain double quotation marks, commas, or backslashes.
- Avoid using the & character.

- Passwords are case-sensitive by default. You can change the case sensitivity through an Oracle configuration setting.
- If your password uses special characters other than `_`, `#`, or `$`, or if your password begins with a number, you must enclose the password in double quotes when you configure it.

If you enter a password that does not meet these guidelines, Oracle keeps prompting for a password. You must enter a password. Do not kill the Oracle Database Configuration Assistant.

Note: You can optionally use different passwords for each user account type. The various user account types are SYS, SYSTEM, DBSNMP, and SYSMAN.

- 13** On the **Database File Locations** panel, accept the default selection, **Use Database File Locations from Template**, and click **Finish**.

The Database Configuration Assistant displays a **Confirmation** window with a summary of the database configuration.

- 14** Click **OK** on the **Confirmation** window to create the database.

The database creation can take up to 20 minutes to complete. If the database creation process fails or hangs, check the Oracle Database Configuration Assistant logs (located in the `%ORACLE_HOME%\cfgtoollogs\dbca\SID` folder) for errors (for example,

`c:\oracle\product\11.2.0.3\db_1\cfgtoollogs\dbca\protect`).

When the database creation process is complete, another **Database Configuration Assistant** window opens and displays the database details.

- 15** Click **Exit**.
- 16** If the database service (OracleServicePROTECT) is down, start it using Windows Services. To view services, choose **Start > Control Panel > Administrative Tools > Computer Management > Services and Applications**, and then open **Services**.

Creating the TNS Listener on Windows

Perform the following procedure to create a TNS listener for the Symantec Data Loss Prevention database.

To create the TNS Listener

- 1 (Optional) If you logged on as a domain user, you must set the `sqlnet.ora` file `SQLNET.AUTHENTICATION_SERVICES=()` value to `none`. Otherwise, proceed to step 2.

To set the `sqlnet.ora` file `SQLNET.AUTHENTICATION_SERVICES=()` value, perform the following steps in this order:

- Open `sqlnet.ora`, located in the `%Oracle_Home%\network\admin` folder (for example, `c:\oracle\product\11.2.0\db_1\NETWORK\ADMIN`), using a text editor.

- Change the `SQLNET.AUTHENTICATION_SERVICES=(NTS)` value to `none`:

```
SQLNET.AUTHENTICATION_SERVICES=(none)
```

- Save and close the `sqlnet.ora` file.

- 2 Start the Oracle Net Configuration Assistant by selecting **Start > All Programs > Oracle 11.2.0.3 > Configuration and Migration Tools > Net Configuration Assistant**.
- 3 On the **Welcome** panel, select **Listener configuration** and click **Next**.
- 4 On the **Listener Configuration, Listener** panel, select **Add** and click **Next**.
- 5 On the **Listener Configuration, Listener Name** panel, enter a listener name and click **Next**.

Note: Use the default listener name, `LISTENER`, unless you must use a different name.

- 6 On the **Listener Configuration, Select Protocols** panel, select the **TCP** protocol and click **Next**.
- 7 On the **Listener Configuration, TCP/IP Protocol** panel, select **Use the standard port number of 1521** and click **Next**.
- 8 On the **Listener Configuration, More Listeners?** panel, select **No** and click **Next**.
- 9 On the **Listener Configuration Done** panel, click **Next**.
- 10 Leave the Oracle Net Configuration Assistant open to configure the Local Net Service Name.

See [“Configuring the local net service name”](#) on page 22.

- 11** On the computer that runs your Oracle database, open a command prompt. The command window must run as Administrator. (See your Microsoft Windows documentation.)

- 12** Run the following command:

```
lsnrctl stop
```

- 13** Open the following file in a text editor:

```
%ORACLE_HOME%\network\admin\listener.ora
```

- 14** Locate the following line:

```
(ADDRESS = (PROTOCOL = IPC) (KEY = <key_value>))
```

- 15** Change *key_value* to PROTECT.

- 16** Add the following line to the end of the file:

```
SECURE_REGISTER_LISTENER = (IPC)
```

- 17** Save the file and exit the text editor.

- 18** Run the following command:

```
lsnrctl start
```

- 19** Run the following commands to connect to the database using SQL Plus:

```
sqlplus /nolog
```

```
conn sys/<password> as sysdba
```

- 20** Run the following command:

```
ALTER SYSTEM SET local_listener =  
' (DESCRIPTION=(ADDRESS=(PROTOCOL=ipc) (KEY=PROTECT))) ' SCOPE=both;
```

- 21** Run the following command to register the listener:

```
ALTER SYSTEM REGISTER;
```

- 22** Exit SQL Plus by running the following command:

```
exit
```

23 Run the following command to verify the change:

24 `lsnrctl services`

The command output should display a message similar to the following:

```
Services Summary...
Service "protect" has 1 instance(s).
Instance "protect", status READY, has 1 handler(s) for this service...
  Handler(s):
    "DEDICATED" established:0 refused:0 state:ready
      LOCAL SERVER
The command completed successfully
```

Configuring the local net service name

Perform the following procedure to configure the Local Net Service Name for the Symantec Data Loss Prevention database.

To configure the local net service name

- 1** If the Oracle Net Configuration Assistant is not already running, start it by selecting **Start > All Programs > Oracle 11.2.0.3 > Configuration and Migration Tools > Net Configuration Assistant**.
- 2** On the **Welcome** panel, select **Local Net Service Name configuration** and click **Next**.
- 3** On the **Net Service Name Configuration** panel, select **Add** and click **Next**.
- 4** On the **Net Service Name Configuration, Service Name** panel, enter "protect" in the **Service Name** field and click **Next**.
- 5** On the **Net Service Name Configuration, Select Protocols** panel, select **TCP** and click **Next**.
- 6** On the **Net Service Name Configuration, TCP/IP Protocol** panel:
 - Enter the IP address of the Oracle server computer in the **Host name** field.
 - Select **Use the standard port number of 1521** (the default value).
 - Click **Next**.
- 7** On the **Net Service Name Configuration, Test** panel, select **No, do not test** and click **Next**.

Do not test the service configuration, because the listener has not yet started.
- 8** On the **Net Service Name Configuration, Net Service Name** panel, select accept the default name of "protect" and click **Next**.

- 9 On the **Net Service Name Configuration, Another Net Service Name?** panel, select **No** and click **Next**.
- 10 On the **Net Service Name Configuration Done** panel, select **Next**.
- 11 Click **Finish** to exit the Oracle Net Configuration Assistant.

Verifying the Symantec Data Loss Prevention database

After creating the Symantec Data Loss Prevention database, you should verify that it was created correctly.

To verify that the database was created correctly

- 1 Open a new command prompt and start SQL*Plus:

```
sqlplus /nolog
```

Using a new command prompt ensures that your Path environment variable includes the SQL*Plus directory.

- 2 Log on as the SYS user:

```
SQL> connect sys/password@protect as sysdba
```

Where *password* represents the SYS password.

- 3 Run the following query:

```
SQL> SELECT * FROM v$version;
```

- 4 Make sure that the output from the query contains the following information, which identifies the software components as version 11.2.0.3. For a 32-bit installation, the output should read:

BANNER

```
-----  
  
Oracle Database 11g Release 11.2.0.3.0 - Production  
PL/SQL Release 11.2.0.3.0 - Production  
CORE      11.2.0.3.0      Production  
TNS for 32-bit Windows: Version 11.2.0.3.0 - Production  
NLSRTL Version 11.2.0.3.0 - Production
```

For a 64-bit installation, the output should read:

BANNER

```
-----  
  
Oracle Database 11g Release 11.2.0.3.0 - 64-bit Production  
PL/SQL Release 11.2.0.3.0 - Production  
CORE      11.2.0.3.0      Production  
TNS for 64-bit Windows: Version 11.2.0.3.0 - Production  
NLSRTL Version 11.2.0.3.0 - Production
```

- 5 Exit SQL*Plus:

```
SQL> exit
```

Creating the Oracle user account for Symantec Data Loss Prevention

Perform the following procedure to create an Oracle user account and name it “protect.”

To create the new Oracle user account named protect

- 1 Extract the SQL script file, `oracle_create_user.sql`, from the `11g_r2_32_bit_Installation_Tools.zip` or `11g_r2_64_bit_Installation_Tools.zip` file to a local directory.
- 2 Open a command prompt and go to the directory where you extracted the `oracle_create_user.sql` file.

3 Start SQL*Plus:

```
sqlplus /nolog
```

4 Run the `oracle_create_user.sql` script:

```
SQL> @oracle_create_user.sql
```

5 At the **Please enter the password for sys user prompt, enter the password for the SYS user.****6 At the **Please enter sid** prompt, enter "protect."****7 At the **Please enter required username to be created** prompt, enter "protect" for the user name.****8 At the **Please enter a password for the new username** prompt, enter a new password.**

Follow these guidelines to create acceptable passwords:

- Passwords cannot contain more than 30 characters.
- Passwords cannot contain double quotation marks, commas, or backslashes.
- Avoid using the `&` character.
- Passwords are case-sensitive by default. You can change the case sensitivity through an Oracle configuration setting.
- If your password uses special characters other than `_`, `#`, or `$`, or if your password begins with a number, you must enclose the password in double quotes when you configure it.

Store the password in a secure location for future use. You must use this password to install Symantec Data Loss Prevention. If you need to change the password after you install Symantec Data Loss Prevention, see the *Symantec Data Loss Prevention Administration Guide* for instructions.

Locking the DBSNMP Oracle user account

To maintain security, you should lock the Oracle DBSNMP user account.

To lock the Oracle DBSNMP user account

- 1** Open a command prompt and start SQL*Plus:

```
sqlplus /nolog
```

- 2** Log on as the SYS user:

```
SQL> connect sys/password as sysdba
```

Where *password* is the SYS password.

- 3** Lock the DBSNMP user account:

```
SQL> ALTER USER dbsnmp ACCOUNT LOCK;
```

- 4** Exit SQL*Plus:

```
SQL> exit
```

Upgrading from Oracle version 10.2.0.4 to version 11.2.0.3 on Windows

This chapter includes the following topics:

- [Upgrading an Oracle 10g database on Windows](#)
- [Pre-upgrade steps for an Oracle upgrade](#)
- [Deleting the Oracle 10g listener on Windows](#)
- [Upgrading the Oracle software](#)
- [Running the Network Configuration Assistant for an Oracle upgrade](#)
- [Configuring the TNS Listener](#)
- [Running the Database Upgrade Assistant for an Oracle upgrade](#)
- [Post-upgrade steps for an Oracle upgrade](#)

Upgrading an Oracle 10g database on Windows

If you have an existing Symantec Data Loss Prevention database that runs on Oracle 10g, you can choose to continue using that database, or you can upgrade the 10g database to use Oracle 11g. Follow these steps, in order, to upgrade an Oracle 10g Symantec Data Loss Prevention database to use Oracle 11g:

Table 2-1 Upgrading from Oracle 10g to Oracle 11g

Step	Action	Description
Step 1	Review the system requirements for Oracle version 11.2.0.3.	See the Oracle Web pages for the system requirements for Oracle 11g and the <i>Symantec Data Loss Prevention System Requirements and Compatibility Guide</i> .
Step 2	Perform the pre-upgrade steps to prepare your system for the upgrade.	Prepares a Symantec Data Loss Prevention deployment for the Oracle database upgrade. See “ Pre-upgrade steps for an Oracle upgrade ” on page 29.
Step 3	Delete the existing Oracle 10g listener.	See “ Deleting the Oracle 10g listener on Windows ” on page 30.
Step 4	Download the Oracle software.	The Oracle installers are available from the Symantec FileConnect Web site. See “ Downloading the Oracle 11g software for Windows ” on page 14.
Step 5	Upgrade the Oracle software.	Installs the Oracle 11g software. See “ Upgrading the Oracle software ” on page 31.
Step 6	Run the Network Configuration Assistant.	Configures network connections to the Oracle database. See “ Running the Network Configuration Assistant for an Oracle upgrade ” on page 32.
Step 7	Configure the TNS Listener.	See “ Configuring the TNS Listener ” on page 34.

Table 2-1 Upgrading from Oracle 10g to Oracle 11g (*continued*)

Step	Action	Description
Step 8	Run the Database Upgrade Assistant.	Upgrades the Oracle database files for use with Oracle 11g. See “Running the Database Upgrade Assistant for an Oracle upgrade” on page 35.
Step 9	Perform the Post-upgrade steps.	Configures the Oracle database for use with Symantec Data Loss Prevention. See “Post-upgrade steps for an Oracle upgrade” on page 36.
Step 10	Install the latest Oracle Critical Patch Update (CPU).	For more information, see the Symantec Data Loss Prevention Oracle Critical Patch Update Guide for the most recent CPU that is supported for Symantec Data Loss Prevention version 11.6.

Pre-upgrade steps for an Oracle upgrade

Complete the following steps before upgrading your Oracle software.

To prepare your Oracle upgrade

- 1 Log in to the computer that hosts the Oracle database as the Oracle administrator. (This user is `Administrator` by default.)
- 2 Open a command prompt window and enter the following command:

```
sqlplus sys/<password> as sysdba
```

The Oracle SQL*Plus command prompt (`SQL>`) displays in the Windows command prompt.

- 3 Run the following commands:

```
EXEC DBMS_STATS.GATHER_DICTIONARY_STATS;  
PURGE dba_recyclebin;  
exit;
```

See [“Upgrading the Oracle software”](#) on page 31.

Deleting the Oracle 10g listener on Windows

Perform the following procedure to delete the existing Oracle 10g TNS listener before you upgrade to Oracle 11g.

To remove the Oracle 10g listener on Windows

- 1 Start the Oracle Net Configuration Assistant by selecting **Start > All Programs > Oracle-home > Configuration and Migration Tools > Net Configuration Assistant**.

Note: The *Oracle-home* portion of this Start menu item represents the current Oracle installation from which you are upgrading. If there are multiple Start menu entries, make sure that the one you use points to your current Oracle installation.

- 2 On the **Welcome** panel, select **Listener configuration** and click **Next**.
- 3 On the **Listener Configuration, Listener** panel, select **Delete** and click **Next**.
- 4 On the **Listener Configuration, Select Listener** panel, select the name of the listener you want to delete, and click **Next**.
- 5 If the listener is running, the Net Configuration Assistant asks if you want to stop and delete the selected listener. Select **Yes**.
- 6 On the **Listener Configuration, Listener Deleted** panel, select **Next**.

- 7 On the **Listener Configuration Done** panel, select **Next**.
- 8 On the **Welcome** panel, select **Finish** to exit the Net Configuration Assistant.

Upgrading the Oracle software

If you have an existing Symantec Data Loss Prevention database running on Oracle 10g and you want to upgrade that database to run on Oracle 11g, follow the steps in this topic to perform the upgrade. The current supported version of Oracle for use with Symantec Data Loss Prevention version 11.6 is 11.2.0.3. For more information on supported Oracle versions see the *Symantec Data Loss Prevention System Requirements Guide* for your version of Symantec Data Loss Prevention.

To install the Oracle 11.2.0.3 software

- 1 Shut down the Enforce Server that accesses the Oracle 10g database.
See the *Symantec Data Loss Prevention System Administration Guide* for information about shutting down Symantec Data Loss Prevention servers.
- 2 Copy the Oracle 11g software to the server computer that is running your Oracle 10g database and unzip it to a temporary directory.
See [“Downloading the Oracle 11g software for Windows”](#) on page 14.
- 3 Double-click on the Oracle 11g Universal Installer file, `setup.exe`.
- 4 On the **Configure Security Updates** panel, deselect **I wish to receive security updates via My Oracle Support**, and click **Next**.
- 5 Click **Yes** to confirm that you have not provided an email address.
- 6 In the **Download Software Updates** panel, select **Skip software updates** and click **Next**.
- 7 In the **Select Installation Option** panel, select **Install database software only** and click **Next**.
- 8 In the **Grid Installation Options** panel, select **Single Instance database installation** and click **Next**.
- 9 In the **Select Product Languages** panel, move the appropriate language(s) for your deployment to the **Selected Languages** column and click **Next**.
- 10 In the **Select Database Edition** panel, select **Standard Edition** and click **Next**.
- 11 On the **Specify Installation Location** panel, enter the following paths in the specified fields, and click **Next**:
 - **Oracle Base:** Enter `c:\oracle`.
 - **Software Location:** Enter `c:\oracle\product\11.2.0.3\db_1`.

Note: All example paths in this document use the installation directory `c:\oracle\product\11.2.0.3\db_1`. If you specify a different installation directory, substitute the correct path as necessary throughout this document.

The installer application performs a prerequisite check and displays the results.

12 Click *Next*.

The installer verifies that the minimum requirements are satisfied. Fix any indicated problems and click **Next**.

The Summary panel displays a summary of your installation selections.

13 Click *Install*.

The installer installs the Oracle 11g software. When the installation is finished, the installer displays a message indicating a successful installation.

14 Set the `ORACLE_HOME` environment variable to the value you entered in the **Software Location field in step 11. You must set this variable in the current session and also set `ORACLE_HOME` as an environment variable so that its value is set automatically when the host computer starts. See your Microsoft Windows documentation for more information.**

See [“Upgrading the Oracle software”](#) on page 31.

Running the Network Configuration Assistant for an Oracle upgrade

To run the Network Configuration Assistant

- 1 Click the Windows Start menu and navigate to **Start > All Programs > Oracle - OraDb11g_home1** menu item.
- 2 Right click on the **Start > All Programs > Oracle - OraDb11g_home1** menu item and select **Rename**.
- 3 Rename the **OraDb11g_home1** portion of the menu item to **Oracle_11.2.0.3**.
- 4 Navigate to **Start > All Programs > Oracle_11.2.0.3 > Configuration and Migration Tools > Net Configuration Assistant**
- 5 On the Oracle Net Configuration Assistant **Welcome** panel, deselect **Perform typical configuration** and click **Next**.

- 6 On the **Listener Configuration, Listener Name** panel, enter a listener name and click **Next**.

Note: Use the default listener name, `LISTENER`, unless you must use a different name.

- 7 On the **Listener Configuration, Select Protocols** panel, select the **TCP** protocol and click **Next**.
- 8 On the **Listener Configuration, TCP/IP Protocol** panel, select **Use the standard port number of 1521** and click **Next**.
- 9 On the **Listener Configuration, More Listeners?** panel, select **No** and click **Next**.
- 10 On the **Listener Configuration Done** panel, click **Next**.
- 11 On the **Welcome** panel, select **Local Net Service Name configuration** and click **Next**.
- 12 On the **Net Service Name Configuration** panel, select **Add** and click **Next**.
- 13 On the **Net Service Name Configuration, Service Name** panel, enter "protect" in the **Service Name** field and click **Next**.
- 14 On the **Net Service Name Configuration, Select Protocols** panel, select **TCP** and click **Next**.
- 15 On the **Net Service Name Configuration, TCP/IP Protocol** panel:
 - Enter the IP address of the Oracle server computer in the **Host name** field.
 - Select **Use the standard port number of 1521** (the default value).
 - Click **Next**.
- 16 On the **Net Service Name Configuration, Test** panel, select **No, do not test** and click **Next**.

Do not test the service configuration, because the listener has not yet started.
- 17 On the **Net Service Name Configuration, Net Service Name** panel, select accept the default name of "protect" and click **Next**.
- 18 On the **Net Service Name Configuration, Another Net Service Name?** panel, select **No** and click **Next**.
- 19 On the **Net Service Name Configuration Done** panel, select **Next**.
- 20 Click **Finish** to exit the Oracle Net Configuration Assistant.

See [“Upgrading the Oracle software”](#) on page 31.

Configuring the TNS Listener

To configure the TNS Listener

- 1 On the computer that runs your Oracle database, open a command prompt. The command window must run as Administrator. (See your Microsoft Windows documentation.)

- 2 Run the following command:

```
lsnrctl stop
```

- 3 Open the following file in a text editor:

```
%ORACLE_HOME%\network\admin\listener.ora
```

- 4 Locate the following line:

```
(ADDRESS = (PROTOCOL = IPC) (KEY = <key_value>))
```

- 5 Change *key_value* to PROTECT.

- 6 Add the following line to the end of the file:

```
SECURE_REGISTER_LISTENER = (IPC)
```

- 7 Save the file and exit the text editor.

- 8 Run the following command:

```
lsnrctl start
```

- 9 Run the following commands to connect to the database using SQL Plus:

```
sqlplus /nolog  
  
conn sys/<password> as sysdba
```

- 10 Run the following command:

```
ALTER SYSTEM SET local_listener =  
' (DESCRIPTION=(ADDRESS=(PROTOCOL=ipc) (KEY=PROTECT))) ' SCOPE=both;
```

- 11 Run the following command to register the listener:

```
ALTER SYSTEM REGISTER;
```

- 12 Exit SQL Plus by running the following command:

```
exit
```

13 Run the following command to verify the change:

14 `lsnrctl services`

The command output should display a message similar to the following:

```
Services Summary...
Service "protect" has 1 instance(s).
Instance "protect", status READY, has 1 handler(s) for this service...
Handler(s):
  "DEDICATED" established:0 refused:0 state:ready
    LOCAL SERVER
The command completed successfully
```

See [“Upgrading an Oracle 10g database on Windows”](#) on page 27.

Running the Database Upgrade Assistant for an Oracle upgrade

To run the Database Upgrade Assistant

- 1 Navigate to **Start > All Programs > Oracle_11.2.0.3 > Configuration and Migration Tools > Database Upgrade Assistant**

The **Database Upgrade Assistant** opens.

- 2 On the **Welcome** panel of the Database Upgrade Assistant, click **Next**.
- 3 On the **Select Database** panel:
 - Select the PROTECT database from the list of available databases.
 - Enter the password to the sys account in the **Password** field.
 - Click **Next** to continue.

The upgrade assistant gathers information about the PROTECT database.

- 4 The upgrade assistant may display a **Warnings** window that lists warning conditions that were determined during the upgrade check. If the window indicates that you should purge the recycle bin, start SQL*Plus and enter the `purge dba_recyclebin;` command. Then click **Yes** in the Oracle 11g Universal Installer to continue with the upgrade. You can view review other warning conditions at a later time by examining the

`c:\oracle\product\11.2.0\db_1\cfgtoollogs\dbua\protect\upgrade1\PreUpgradeResults.html` file.

- 5 On the **Upgrade Options** panel, select **Backup database** and specify a backup directory if you do not have a current backup of the PROTECT database. Click **Next** to continue.
- 6 On the **Move Database Files** panel, select **Do Not Move Database Files during Upgrade** and click **Next** to continue.
- 7 On the **Recovery and Diagnostic Locations** panel, click **Next** to accept the default destinations.
- 8 On the **Summary** panel, click **Finish** to begin the database upgrade.

The Database Upgrade Assistant displays a **Progress** window while it performs the upgrade.

At the **Progress** window you may see the following errors

- Identifier SYS.DBMS_JAVA must be declared
- You can safely ignore the warning "ORA-01450: maximum key length (6398) exceeded"

You can safely ignore these errors by clicking **Ignore**.

- 9 On the **Upgrade Result** panel, click **Close**. The Database Upgrade Assistant displays a document summary. Depending on your database environment, the summary may display errors such as 00201: identifier SYS.DBMS_JAVA must be declared, which can be ignored.

See [“Upgrading the Oracle software”](#) on page 31.

Post-upgrade steps for an Oracle upgrade

To complete your Oracle upgrade

- 1 Copy the following file from the Symantec Data Loss Prevention Enforce Server host to a directory on the database host computer:

DLP_home\Protect\install\sql\Fix_KeywordCondition.sql (Where *DLP_home* is the directory where Symantec Data Loss Prevention was installed.)

- 2 Open a Windows command prompt on the database server host and navigate to the directory where you copied the *Fix_KeywordCondition.sql* file.
- 3 Enter the following command :

```
sqlplus protect/password  
@Fix_KeywordCondition.sql  
exit;
```

- 4** Enter the following command in the Windows command prompt to launch SQL*Plus:

```
sqlplus /nolog
```

- 5** Log in as the SYS user by entering the following command:

```
connect sys/<password> as sysdba
```

- 6** Enter the following SQL plus command:

```
alter profile default limit password_life_time unlimited;
```

- 7** Enter the following commands to modify the database initialization parameters:

```
alter system set memory_max_target = 1536m scope=spfile;
alter system set memory_target = 1536m scope=spfile;
alter system set sga_max_size = 0 scope=spfile;
alter system set sga_target = 0 scope=spfile;
alter system set compatible = '11.2.0.3.0' scope=spfile;
alter system set open_cursors=1000 SCOPE=spfile;
alter system set pga_aggregate_target = 0 scope=spfile;
```

- 8** Run the `utlrp.sql` script to recompile any invalid objects. Enter the following command:

```
@?\rdbms\admin\utlrp.sql
```

(The @ symbol indicates to SQL*Plus that what follows is a script. The ? symbol represents the ORACLE_HOME directory.)

- 9** Exit SQL*Plus by entering the following command:

```
exit;
```

- 10** Stop the Oracle database instance.
- 11** (Optional) Symantec recommends that you back up your database before restarting it with the upgraded software.
- 12** Apply the latest Critical Patch Update (CPU) from Oracle. See the *Symantec Data Loss Prevention Oracle 11g Release 2 Critical Patch Update Guide* for the most recent Oracle CPU patch.

See [“Upgrading the Oracle software”](#) on page 31.

Upgrading from Oracle version 11.2.0.1 to version 11.2.0.3 on Windows

This chapter includes the following topics:

- [Upgrading from Oracle version 11.2.0.1 to Oracle version 11.2.0.3](#)
- [Pre-upgrade steps for an Oracle upgrade](#)
- [Deleting the Oracle 11.2.0.1 listener on Windows](#)
- [Upgrading the Oracle 11g version 11.2.0.1 software](#)
- [Running the Network Configuration Assistant for an Oracle upgrade](#)
- [Configuring the TNS Listener](#)
- [Running the Database Upgrade Assistant for an Oracle upgrade](#)
- [Post-upgrade steps for an Oracle upgrade](#)

Upgrading from Oracle version 11.2.0.1 to Oracle version 11.2.0.3

If you have an existing Symantec Data Loss Prevention database that runs on Oracle 11g version 11.2.0.1, you can choose to continue using that database, or you can upgrade the database to use Oracle version 11.2.0.3. Note that future Oracle Critical Patch Updates (CPU) are only supported for Oracle version 11.2.0.3. Follow the steps in [Table 3-1](#) to upgrade an Oracle 11.2.0.1 database to use Oracle 11.2.0.3.

Note: The current supported version of Oracle for use with Symantec Data Loss Prevention version 11.6 is Oracle 11g version 11.2.0.3.

Table 3-1 Upgrading from Oracle 11.2.0.1 to Oracle 11.2.0.3

Step	Action	Description
Step 1	Review the system requirements for Oracle version 11.2.0.3.	See the Oracle Web pages for the system requirements for Oracle 11g and the <i>Symantec Data Loss Prevention System Requirements and Compatibility Guide</i> .
Step 2	Perform the pre-upgrade steps to prepare your system for the upgrade.	Prepares a Symantec Data Loss Prevention deployment for the Oracle database upgrade. See “ Pre-upgrade steps for an Oracle upgrade ” on page 41.
Step 3	Delete the existing Oracle 11.2.0.1 listener.	See “ Deleting the Oracle 11.2.0.1 listener on Windows ” on page 42.
Step 4	Download the Oracle software.	The Oracle installers are available from the Symantec FileConnect Web site. See “ Downloading the Oracle 11g software for Windows ” on page 14.
Step 5	Upgrade the Oracle software.	Upgrades the Oracle software. See “ Upgrading the Oracle 11g version 11.2.0.1 software ” on page 43.

Table 3-1 Upgrading from Oracle 11.2.0.1 to Oracle 11.2.0.3 (*continued*)

Step	Action	Description
Step 6	Run the Network Configuration Assistant.	Configures network connections to the Oracle database. See “Running the Network Configuration Assistant for an Oracle upgrade” on page 44.
Step 7	Configure the TNS Listener.	See “Configuring the TNS Listener” on page 46.
Step 8	Run the Database Upgrade Assistant.	Upgrades the Oracle database files for use with Oracle 11g. See “Running the Database Upgrade Assistant for an Oracle upgrade” on page 47.
Step 9	Perform the Post-upgrade steps.	Configures the Oracle database for use with Symantec Data Loss Prevention. See “Post-upgrade steps for an Oracle upgrade” on page 49.
Step 10	Install the latest Oracle Critical Patch Update (CPU).	For more information, see the Symantec Data Loss Prevention Oracle Critical Patch Update Guide for the most recent CPU that is supported for Symantec Data Loss Prevention version 11.6.

Pre-upgrade steps for an Oracle upgrade

Complete the following steps before upgrading your Oracle software.

To prepare your Oracle upgrade

- 1 Log in to the computer that hosts the Oracle database as the Oracle administrator. (This user is `Administrator` by default.)
- 2 Open a command prompt window and enter the following command:

```
sqlplus sys/<password> as sysdba
```

The Oracle SQL*Plus command prompt (`SQL>`) displays in the Windows command prompt.

- 3 Run the following commands:

```
EXEC DBMS_STATS.GATHER_DICTIONARY_STATS;  
PURGE dba_recyclebin;  
exit;
```

See [“Upgrading from Oracle version 11.2.0.1 to Oracle version 11.2.0.3”](#) on page 39.

Deleting the Oracle 11.2.0.1 listener on Windows

Perform the following procedure to delete the existing Oracle 11.2.0.1 TNS listener before you upgrade to Oracle version 11.2.0.3.

To delete the Oracle 11.2.0.1 listener on Windows

- 1 Start the Oracle Net Configuration Assistant by selecting **Start > All Programs > Oracle - OraDb11g_home1 > Configuration and Migration Tools > Net Configuration Assistant**.
- 2 On the **Welcome** panel, select **Listener configuration** and click **Next**.
- 3 On the **Listener Configuration, Listener** panel, select **Delete** and click **Next**.
- 4 On the **Listener Configuration, Select Listener** panel, select the name of the listener you want to delete, and click **Next**.
- 5 If the listener is running, the Net Configuration Assistant asks if you want to stop and delete the selected listener. Select **Yes**.
- 6 On the **Listener Configuration, Listener Deleted** panel, select **Next**.
- 7 On the **Listener Configuration Done** panel, select **Next**.
- 8 On the **Welcome** panel, select **Finish** to exit the Net Configuration Assistant.

See [“Upgrading from Oracle version 11.2.0.1 to Oracle version 11.2.0.3”](#) on page 39.

Upgrading the Oracle 11g version 11.2.0.1 software

If you have an existing Symantec Data Loss Prevention database running on Oracle 11.2.0.1 and you want to upgrade that database to run on Oracle version 11.2.0.3, follow the steps in this section to perform the upgrade.

Note: This type of upgrade uses an "out-of-place" installation procedure that installs Oracle software into a new `ORACLE_HOME` location.

To upgrade the Oracle version 11.2.0.1 software to version 11.2.0.3

- 1 Shut down the Enforce Server that accesses the Oracle version 11.2.0.1 database.

See the *Symantec Data Loss Prevention System Administration Guide* for information about shutting down Symantec Data Loss Prevention servers.
- 2 Copy the Oracle version 11.2.0.3 software to the server computer that is running your Oracle version 11.2.0.1 database and unzip it to a temporary directory.

See [“Downloading the Oracle 11g software for Windows”](#) on page 14.
- 3 Double-click on the Oracle 11g Universal Installer file, `setup.exe`.
- 4 On the **Configure Security Updates** panel, deselect **I wish to receive security updates via My Oracle Support**, and click **Next**.
- 5 Click **Yes** to confirm that you have not provided an email address.
- 6 In the **Download Software Updates** panel, select **Skip software updates** and click **Next**.
- 7 In the **Select Installation Option** panel, select **Install database software only** and click **Next**.
- 8 In the **Grid Installation Options** panel, select **Single Instance database installation** and click **Next**.
- 9 In the **Select Product Languages** panel, move the appropriate language(s) for your deployment to the **Selected Languages** column and click **Next**.
- 10 In the **Select Database Edition** panel, select **Standard Edition** and click **Next**.
- 11 On the **Specify Installation Location** panel, enter the following paths in the specified fields, and click **Next**:
 - **Oracle Base:** Enter `c:\oracle`.
 - **Software Location:** Enter `c:\oracle\product\11.2.0.3\db_1`.

Note: All example paths in this document use the installation directory `c:\oracle\product\11.2.0.3\db_1`. If you specify a different installation directory, substitute the correct path as necessary throughout this document.

The installer application performs a prerequisite check and displays the results.

12 Click Next.

The installer verifies that the minimum requirements are satisfied. Fix any indicated problems and click **Next**.

The Summary panel displays a summary of your installation selections.

13 Click Install.

The installer installs the Oracle version 11.2.0.3 software. When the installation is finished, the installer displays a message indicating a successful installation.

14 Set the ORACLE_HOME environment variable to the value you entered in the Software Location field in step 11. You must set this variable in the current session and also set ORACLE_HOME as an environment variable so that its value is set automatically when the host computer starts. See your Microsoft Windows documentation for more information.

See [“Upgrading from Oracle version 11.2.0.1 to Oracle version 11.2.0.3”](#) on page 39.

Running the Network Configuration Assistant for an Oracle upgrade

To run the Network Configuration Assistant

- 1 Click the Windows Start menu and navigate to **Start > All Programs > Oracle - OraDb11g_home1** menu item.
- 2 Right click on the **Start > All Programs > Oracle - OraDb11g_home1** menu item and select **Rename**.
- 3 Rename the **OraDb11g_home1** portion of the menu item to **Oracle_11.2.0.3**.
- 4 Navigate to **Start > All Programs > Oracle_11.2.0.3 > Configuration and Migration Tools > Net Configuration Assistant**
- 5 On the Oracle Net Configuration Assistant **Welcome** panel, deselect **Perform typical configuration** and click **Next**.

- 6 On the **Listener Configuration, Listener Name** panel, enter a listener name and click **Next**.

Note: Use the default listener name, `LISTENER`, unless you must use a different name.

- 7 On the **Listener Configuration, Select Protocols** panel, select the **TCP** protocol and click **Next**.
- 8 On the **Listener Configuration, TCP/IP Protocol** panel, select **Use the standard port number of 1521** and click **Next**.
- 9 On the **Listener Configuration, More Listeners?** panel, select **No** and click **Next**.
- 10 On the **Listener Configuration Done** panel, click **Next**.
- 11 On the **Welcome** panel, select **Local Net Service Name configuration** and click **Next**.
- 12 On the **Net Service Name Configuration** panel, select **Add** and click **Next**.
- 13 On the **Net Service Name Configuration, Service Name** panel, enter "protect" in the **Service Name** field and click **Next**.
- 14 On the **Net Service Name Configuration, Select Protocols** panel, select **TCP** and click **Next**.
- 15 On the **Net Service Name Configuration, TCP/IP Protocol** panel:
 - Enter the IP address of the Oracle server computer in the **Host name** field.
 - Select **Use the standard port number of 1521** (the default value).
 - Click **Next**.
- 16 On the **Net Service Name Configuration, Test** panel, select **No, do not test** and click **Next**.

Do not test the service configuration, because the listener has not yet started.
- 17 On the **Net Service Name Configuration, Net Service Name** panel, select accept the default name of "protect" and click **Next**.
- 18 On the **Net Service Name Configuration, Another Net Service Name?** panel, select **No** and click **Next**.
- 19 On the **Net Service Name Configuration Done** panel, select **Next**.
- 20 Click **Finish** to exit the Oracle Net Configuration Assistant.

See ["Upgrading from Oracle version 11.2.0.1 to Oracle version 11.2.0.3"](#) on page 39.

Configuring the TNS Listener

To configure the TNS Listener

- 1 On the computer that runs your Oracle database, open a command prompt. The command window must run as Administrator. (See your Microsoft Windows documentation.)

- 2 Run the following command:

```
lsnrctl stop
```

- 3 Open the following file in a text editor:

```
%ORACLE_HOME%\network\admin\listener.ora
```

- 4 Locate the following line:

```
(ADDRESS = (PROTOCOL = IPC) (KEY = <key_value>))
```

- 5 Change *key_value* to PROTECT.

- 6 Add the following line to the end of the file:

```
SECURE_REGISTER_LISTENER = (IPC)
```

- 7 Save the file and exit the text editor.

- 8 Run the following command:

```
lsnrctl start
```

- 9 Run the following commands to connect to the database using SQL Plus:

```
sqlplus /nolog  
  
conn sys/<password> as sysdba
```

- 10 Run the following command:

```
ALTER SYSTEM SET local_listener =  
' (DESCRIPTION=(ADDRESS=(PROTOCOL=ipc) (KEY=PROTECT))) ' SCOPE=both;
```

- 11 Run the following command to register the listener:

```
ALTER SYSTEM REGISTER;
```

- 12 Exit SQL Plus by running the following command:

```
exit
```

13 Run the following command to verify the change:

14 `lsnrctl services`

The command output should display a message similar to the following:

```
Services Summary...
Service "protect" has 1 instance(s).
Instance "protect", status READY, has 1 handler(s) for this service...
  Handler(s):
    "DEDICATED" established:0 refused:0 state:ready
    LOCAL SERVER
The command completed successfully
```

See [“Upgrading from Oracle version 11.2.0.1 to Oracle version 11.2.0.3”](#) on page 39.

Running the Database Upgrade Assistant for an Oracle upgrade

To run the Database Upgrade Assistant

- 1** Navigate to **Start > All Programs > Oracle_11.2.0.3 > Configuration and Migration Tools > Database Upgrade Assistant**

Warning: There are now two versions of the Oracle software on the host machine. Make sure that you choose the correct Start Menu options.

The **Database Upgrade Assistant** opens.

- 2** On the **Welcome** panel of the Database Upgrade Assistant, click **Next**.
- 3** On the **Select Database** panel:
 - Select the PROTECT database from the list of available databases.
 - Enter the password to the sys account in the **Password** field.
 - Click **Next** to continue.

The upgrade assistant gathers information about the PROTECT database.

- 4 The upgrade assistant may display a **Warnings** window that lists warning conditions that were determined during the upgrade check. If the window indicates that you should purge the recycle bin, start SQL*Plus and enter the `purge dba_recyclebin;` command. Then click **Yes** in the Oracle 11g Universal Installer to continue with the upgrade. You can view review other warning conditions at a later time by examining the
`c:\oracle\product\11.2.0\db_2\cfgtoollogs\dbua\protect\upgrade1\PreUpgradeResults.html` file.
- 5 On the **Upgrade Options** panel, select **Backup database** and specify a backup directory if you do not have a current backup of the PROTECT database. Click **Next** to continue.
- 6 On the **Move Database Files** panel, select **Do Not Move Database Files during Upgrade** and click **Next** to continue.
- 7 On the **Recovery and Diagnostic Locations** panel, click **Next** to accept the default destinations.
- 8 On the **Summary** panel, click **Finish** to begin the database upgrade.

The Database Upgrade Assistant displays a **Progress** window while it performs the upgrade.

At the **Progress** window you may see the following errors

- Identifier SYS.DBMS_JAVA must be declared
- You can safely ignore the warning "ORA-01450: maximum key length (6398) exceeded"

You can safely ignore these errors by clicking **Ignore**.

- 9 On the **Upgrade Result** panel, click **Close**. The Database Upgrade Assistant displays a document summary. Depending on your database environment, the summary may display errors such as 00201: identifier SYS.DBMS_JAVA must be declared, which can be ignored.

See [“Upgrading from Oracle version 11.2.0.1 to Oracle version 11.2.0.3”](#) on page 39.

Post-upgrade steps for an Oracle upgrade

To complete your Oracle upgrade

- 1 Copy the following file from the Symantec Data Loss Prevention Enforce Server host to a directory on the database host computer:

DLP_home\Protect\install\sql\Fix_KeywordCondition.sql (Where *DLP_home* is the directory where Symantec Data Loss Prevention was installed.)

- 2 Open a Windows command prompt on the database server host and navigate to the directory where you copied the `Fix_KeywordCondition.sql` file.
- 3 Enter the following command :

```
sqlplus protect/password  
@Fix_KeywordCondition.sql  
exit;
```

- 4 Enter the following command in the Windows command prompt to launch SQL*Plus:

```
sqlplus /nolog
```

- 5 Log in as the SYS user by entering the following command:

```
connect sys/<password> as sysdba
```

- 6 Enter the following SQL plus command:

```
alter profile default limit password_life_time unlimited;
```

- 7** Enter the following commands to modify the database initialization parameters:

32-bit installations:

```
alter system set memory_max_target = 1536m scope=spfile;  
alter system set memory_target = 1536m scope=spfile;  
alter system set sga_max_size = 0 scope=spfile;  
alter system set sga_target = 0 scope=spfile;  
alter system set compatible = '11.2.0.2.0' scope=spfile;  
alter system set open_cursors=1000 SCOPE=spfile;  
alter system set pga_aggregate_target = 0 scope=spfile;
```

64-bit installations:

```
alter system set memory_max_target = 3072m scope=spfile;  
alter system set memory_target = 3072m scope=spfile;  
alter system set sga_max_size = 0 scope=spfile;  
alter system set sga_target = 0 scope=spfile;  
alter system set compatible = '11.2.0.2.0' scope=spfile;  
alter system set open_cursors=1000 SCOPE=spfile;  
alter system set pga_aggregate_target = 0 scope=spfile;
```

- 8** Run the `utlrlp.sql` script to recompile any invalid objects. Enter the following command:

```
@?\rdbms\admin\utlrlp.sql
```

(The @ symbol indicates to SQL*Plus that what follows is a script. The ? symbol represents the `ORACLE_HOME` directory.)

- 9** Exit SQL*Plus by entering the following command:

```
exit;
```

- 10** Stop the Oracle database instance.

- 11** (Optional) Symantec recommends that you back up your database before restarting it with the upgraded software.

- 12** Apply the latest Critical Patch Update (CPU) from Oracle. See the *Symantec Data Loss Prevention Oracle 11g Release 2 Critical Patch Update Guide* for the most recent Oracle CPU patch.

See [“Upgrading from Oracle version 11.2.0.1 to Oracle version 11.2.0.3”](#) on page 39.

Upgrading from Oracle version 11.2.0.2 to version 11.2.0.3 on Windows

This chapter includes the following topics:

- [Upgrading from Oracle version 11.2.0.2 to Oracle version 11.2.0.3](#)
- [Pre-upgrade steps for an Oracle upgrade](#)
- [Deleting the Oracle 11.2.0.2 listener on Windows](#)
- [Upgrading the Oracle 11g version 11.2.0.2 software](#)
- [Running the Network Configuration Assistant for an Oracle upgrade](#)
- [Configuring the TNS Listener](#)
- [Running the Database Upgrade Assistant for an Oracle upgrade](#)
- [Post-upgrade steps for an Oracle upgrade](#)

Upgrading from Oracle version 11.2.0.2 to Oracle version 11.2.0.3

If you have an existing Symantec Data Loss Prevention database that runs on Oracle 11g version 11.2.0.2, you can choose to continue using that database, or you can upgrade the database to use Oracle version 11.2.0.3. Note that future Oracle Critical Patch Updates (CPU) are only supported for Oracle version 11.2.0.3. Follow the steps in [Table 4-1](#) to upgrade an Oracle 11.2.0.2 database to use Oracle 11.2.0.3.

Note: The current supported version of Oracle for use with Symantec Data Loss Prevention version 11.6 is Oracle 11g version 11.2.0.3.

Table 4-1 Upgrading from Oracle 11.2.0.2 to Oracle 11.2.0.3

Step	Action	Description
Step 1	Review the system requirements for Oracle version 11.2.0.3.	See the Oracle Web pages for the system requirements for Oracle 11g and the <i>Symantec Data Loss Prevention System Requirements and Compatibility Guide</i> .
Step 2	Perform the pre-upgrade steps to prepare your system for the upgrade.	Prepares a Symantec Data Loss Prevention deployment for the Oracle database upgrade. See “ Pre-upgrade steps for an Oracle upgrade ” on page 53.
Step 3	Delete the existing Oracle 11.2.0.2 listener.	See “ Deleting the Oracle 11.2.0.2 listener on Windows ” on page 54.
Step 4	Download the Oracle software.	The Oracle installers are available from the Symantec FileConnect Web site. See “ Downloading the Oracle 11g software for Windows ” on page 14.
Step 5	Upgrade the Oracle software.	Upgrades the Oracle software. See “ Upgrading the Oracle 11g version 11.2.0.2 software ” on page 55.

Table 4-1 Upgrading from Oracle 11.2.0.2 to Oracle 11.2.0.3 (*continued*)

Step	Action	Description
Step 6	Run the Network Configuration Assistant.	Configures network connections to the Oracle database. See “Running the Network Configuration Assistant for an Oracle upgrade” on page 56.
Step 7	Configure the TNS Listener.	See “Configuring the TNS Listener” on page 58.
Step 8	Run the Database Upgrade Assistant.	Upgrades the Oracle database files for use with Oracle 11g. See “Running the Database Upgrade Assistant for an Oracle upgrade” on page 59.
Step 9	Perform the Post-upgrade steps.	Configures the Oracle database for use with Symantec Data Loss Prevention. See “Post-upgrade steps for an Oracle upgrade” on page 61.
Step 10	Install the latest Oracle Critical Patch Update (CPU).	For more information, see the Symantec Data Loss Prevention Oracle Critical Patch Update Guide for the most recent CPU that is supported for Symantec Data Loss Prevention version 11.6.

Pre-upgrade steps for an Oracle upgrade

Complete the following steps before upgrading your Oracle software.

To prepare your Oracle upgrade

- 1 Log in to the computer that hosts the Oracle database as the Oracle administrator. (This user is `Administrator` by default.)
- 2 Open a command prompt window and enter the following command:

```
sqlplus sys/<password> as sysdba
```

The Oracle SQL*Plus command prompt (`SQL>`) displays in the Windows command prompt.

- 3 Run the following commands:

```
EXEC DBMS_STATS.GATHER_DICTIONARY_STATS;  
PURGE dba_recyclebin;  
exit;
```

See [“Upgrading from Oracle version 11.2.0.2 to Oracle version 11.2.0.3”](#) on page 51.

Deleting the Oracle 11.2.0.2 listener on Windows

Perform the following procedure to delete the existing Oracle 11.2.0.2 TNS listener before you upgrade to Oracle version 11.2.0.3.

To delete the Oracle 11.2.0.2 listener on Windows

- 1 Start the Oracle Net Configuration Assistant by selecting **Start > All Programs > Oracle - OraDb11g_home1 > Configuration and Migration Tools > Net Configuration Assistant**.
- 2 On the **Welcome** panel, select **Listener configuration** and click **Next**.
- 3 On the **Listener Configuration, Listener** panel, select **Delete** and click **Next**.
- 4 On the **Listener Configuration, Select Listener** panel, select the name of the listener you want to delete, and click **Next**.
- 5 If the listener is running, the Net Configuration Assistant asks if you want to stop and delete the selected listener. Select **Yes**.
- 6 On the **Listener Configuration, Listener Deleted** panel, select **Next**.
- 7 On the **Listener Configuration Done** panel, select **Next**.
- 8 On the **Welcome** panel, select **Finish** to exit the Net Configuration Assistant.

See [“Upgrading from Oracle version 11.2.0.2 to Oracle version 11.2.0.3”](#) on page 51.

Upgrading the Oracle 11g version 11.2.0.2 software

If you have an existing Symantec Data Loss Prevention database running on Oracle 11.2.0.2 and you want to upgrade that database to run on Oracle version 11.2.0.3, follow the steps in this section to perform the upgrade.

Note: This type of upgrade uses an "out-of-place" installation procedure that installs Oracle software into a new `ORACLE_HOME` location.

To upgrade the Oracle version 11.2.0.2 software to version 11.2.0.3

- 1 Shut down the Enforce Server that accesses the Oracle version 11.2.0.2 database.

See the *Symantec Data Loss Prevention System Administration Guide* for information about shutting down Symantec Data Loss Prevention servers.
- 2 Copy the Oracle version 11.2.0.3 software to the server computer that is running your Oracle version 11.2.0.2 database and unzip it to a temporary directory.

See [“Downloading the Oracle 11g software for Windows”](#) on page 14.
- 3 Double-click on the Oracle 11g Universal Installer file, `setup.exe`.
- 4 On the **Configure Security Updates** panel, deselect **I wish to receive security updates via My Oracle Support**, and click **Next**.
- 5 Click **Yes** to confirm that you have not provided an email address.
- 6 In the **Download Software Updates** panel, select **Skip software updates** and click **Next**.
- 7 In the **Select Installation Option** panel, select **Install database software only** and click **Next**.
- 8 In the **Grid Installation Options** panel, select **Single Instance database installation** and click **Next**.
- 9 In the **Select Product Languages** panel, move the appropriate language(s) for your deployment to the **Selected Languages** column and click **Next**.
- 10 In the **Select Database Edition** panel, select **Standard Edition** and click **Next**.
- 11 On the **Specify Installation Location** panel, enter the following paths in the specified fields, and click **Next**:
 - **Oracle Base:** Enter `c:\oracle`.
 - **Software Location:** Enter `c:\oracle\product\11.2.0.3\db_1`.

Note: All example paths in this document use the installation directory `c:\oracle\product\11.2.0.3\db_1`. If you specify a different installation directory, substitute the correct path as necessary throughout this document.

The installer application performs a prerequisite check and displays the results.

12 Click Next.

The installer verifies that the minimum requirements are satisfied. Fix any indicated problems and click **Next**.

The Summary panel displays a summary of your installation selections.

13 Click Install.

The installer installs the Oracle version 11.2.0.3 software. When the installation is finished, the installer displays a message indicating a successful installation.

14 Set the ORACLE_HOME environment variable to the value you entered in the Software Location field in step 11. You must set this variable in the current session and also set ORACLE_HOME as an environment variable so that its value is set automatically when the host computer starts. See your Microsoft Windows documentation for more information.

See [“Upgrading from Oracle version 11.2.0.2 to Oracle version 11.2.0.3”](#) on page 51.

Running the Network Configuration Assistant for an Oracle upgrade

To run the Network Configuration Assistant

- 1 Click the Windows Start menu and navigate to **Start > All Programs > Oracle - OraDb11g_home1** menu item.
- 2 Right click on the **Start > All Programs > Oracle - OraDb11g_home1** menu item and select **Rename**.
- 3 Rename the **OraDb11g_home1** portion of the menu item to **Oracle_11.2.0.3**.
- 4 Navigate to **Start > All Programs > Oracle_11.2.0.3 > Configuration and Migration Tools > Net Configuration Assistant**
- 5 On the Oracle Net Configuration Assistant **Welcome** panel, deselect **Perform typical configuration** and click **Next**.

- 6 On the **Listener Configuration, Listener Name** panel, enter a listener name and click **Next**.

Note: Use the default listener name, `LISTENER`, unless you must use a different name.

- 7 On the **Listener Configuration, Select Protocols** panel, select the **TCP** protocol and click **Next**.
- 8 On the **Listener Configuration, TCP/IP Protocol** panel, select **Use the standard port number of 1521** and click **Next**.
- 9 On the **Listener Configuration, More Listeners?** panel, select **No** and click **Next**.
- 10 On the **Listener Configuration Done** panel, click **Next**.
- 11 On the **Welcome** panel, select **Local Net Service Name configuration** and click **Next**.
- 12 On the **Net Service Name Configuration** panel, select **Add** and click **Next**.
- 13 On the **Net Service Name Configuration, Service Name** panel, enter "protect" in the **Service Name** field and click **Next**.
- 14 On the **Net Service Name Configuration, Select Protocols** panel, select **TCP** and click **Next**.
- 15 On the **Net Service Name Configuration, TCP/IP Protocol** panel:
 - Enter the IP address of the Oracle server computer in the **Host name** field.
 - Select **Use the standard port number of 1521** (the default value).
 - Click **Next**.
- 16 On the **Net Service Name Configuration, Test** panel, select **No, do not test** and click **Next**.

Do not test the service configuration, because the listener has not yet started.
- 17 On the **Net Service Name Configuration, Net Service Name** panel, select accept the default name of "protect" and click **Next**.
- 18 On the **Net Service Name Configuration, Another Net Service Name?** panel, select **No** and click **Next**.
- 19 On the **Net Service Name Configuration Done** panel, select **Next**.
- 20 Click **Finish** to exit the Oracle Net Configuration Assistant.

See ["Upgrading from Oracle version 11.2.0.2 to Oracle version 11.2.0.3"](#) on page 51.

Configuring the TNS Listener

To configure the TNS Listener

- 1 On the computer that runs your Oracle database, open a command prompt. The command window must run as Administrator. (See your Microsoft Windows documentation.)

- 2 Run the following command:

```
lsnrctl stop
```

- 3 Open the following file in a text editor:

```
%ORACLE_HOME%\network\admin\listener.ora
```

- 4 Locate the following line:

```
(ADDRESS = (PROTOCOL = IPC) (KEY = <key_value>))
```

- 5 Change *key_value* to PROTECT.

- 6 Add the following line to the end of the file:

```
SECURE_REGISTER_LISTENER = (IPC)
```

- 7 Save the file and exit the text editor.

- 8 Run the following command:

```
lsnrctl start
```

- 9 Run the following commands to connect to the database using SQL Plus:

```
sqlplus /nolog  
  
conn sys/<password> as sysdba
```

- 10 Run the following command:

```
ALTER SYSTEM SET local_listener =  
' (DESCRIPTION=(ADDRESS=(PROTOCOL=ipc) (KEY=PROTECT))) ' SCOPE=both;
```

- 11 Run the following command to register the listener:

```
ALTER SYSTEM REGISTER;
```

- 12 Exit SQL Plus by running the following command:

```
exit
```

13 Run the following command to verify the change:

14 `lsnrctl services`

The command output should display a message similar to the following:

```
Services Summary...
Service "protect" has 1 instance(s).
Instance "protect", status READY, has 1 handler(s) for this service...
  Handler(s):
    "DEDICATED" established:0 refused:0 state:ready
    LOCAL SERVER
The command completed successfully
```

See [“Upgrading from Oracle version 11.2.0.2 to Oracle version 11.2.0.3”](#) on page 51.

Running the Database Upgrade Assistant for an Oracle upgrade

To run the Database Upgrade Assistant

- 1** Navigate to **Start > All Programs > Oracle_11.2.0.3 > Configuration and Migration Tools > Database Upgrade Assistant**

Warning: There are now two versions of the Oracle software on the host machine. Make sure that you choose the correct Start Menu options.

The **Database Upgrade Assistant** opens.

- 2** On the **Welcome** panel of the Database Upgrade Assistant, click **Next**.
- 3** On the **Select Database** panel:
 - Select the PROTECT database from the list of available databases.
 - Enter the password to the sys account in the **Password** field.
 - Click **Next** to continue.

The upgrade assistant gathers information about the PROTECT database.

- 4 The upgrade assistant may display a **Warnings** window that lists warning conditions that were determined during the upgrade check. If the window indicates that you should purge the recycle bin, start SQL*Plus and enter the `purge dba_recyclebin;` command. Then click **Yes** in the Oracle 11g Universal Installer to continue with the upgrade. You can view review other warning conditions at a later time by examining the
`c:\oracle\product\11.2.0\db_2\cfgtoollogs\dbua\protect\upgrade1\PreUpgradeResults.html` file.
- 5 On the **Upgrade Options** panel, select **Backup database** and specify a backup directory if you do not have a current backup of the PROTECT database. Click **Next** to continue.
- 6 On the **Move Database Files** panel, select **Do Not Move Database Files during Upgrade** and click **Next** to continue.
- 7 On the **Recovery and Diagnostic Locations** panel, click **Next** to accept the default destinations.
- 8 On the **Summary** panel, click **Finish** to begin the database upgrade.

The Database Upgrade Assistant displays a **Progress** window while it performs the upgrade.

At the **Progress** window you may see the following errors

- Identifier SYS.DBMS_JAVA must be declared
- You can safely ignore the warning "ORA-01450: maximum key length (6398) exceeded"

You can safely ignore these errors by clicking **Ignore**.

- 9 On the **Upgrade Result** panel, click **Close**. The Database Upgrade Assistant displays a document summary. Depending on your database environment, the summary may display errors such as 00201: identifier SYS.DBMS_JAVA must be declared, which can be ignored.

See [“Upgrading from Oracle version 11.2.0.2 to Oracle version 11.2.0.3”](#) on page 51.

Post-upgrade steps for an Oracle upgrade

To complete your Oracle upgrade

- 1 Copy the following file from the Symantec Data Loss Prevention Enforce Server host to a directory on the database host computer:

DLP_home\Protect\install\sql\Fix_KeywordCondition.sql (Where *DLP_home* is the directory where Symantec Data Loss Prevention was installed.)

- 2 Open a Windows command prompt on the database server host and navigate to the directory where you copied the *Fix_KeywordCondition.sql* file.
- 3 Enter the following command :

```
sqlplus protect/password  
@Fix_KeywordCondition.sql  
exit;
```

- 4 Enter the following command in the Windows command prompt to launch SQL*Plus:

```
sqlplus /nolog
```

- 5 Log in as the SYS user by entering the following command:

```
connect sys/<password> as sysdba
```

- 6 Enter the following SQL plus command:

```
alter profile default limit password_life_time unlimited;
```

- 7** Enter the following commands to modify the database initialization parameters:

32-bit installations:

```
alter system set memory_max_target = 1536m scope=spfile;  
alter system set memory_target = 1536m scope=spfile;  
alter system set sga_max_size = 0 scope=spfile;  
alter system set sga_target = 0 scope=spfile;  
alter system set compatible = '11.2.0.2.0' scope=spfile;  
alter system set open_cursors=1000 SCOPE=spfile;  
alter system set pga_aggregate_target = 0 scope=spfile;
```

64-bit installations:

```
alter system set memory_max_target = 3072m scope=spfile;  
alter system set memory_target = 3072m scope=spfile;  
alter system set sga_max_size = 0 scope=spfile;  
alter system set sga_target = 0 scope=spfile;  
alter system set compatible = '11.2.0.2.0' scope=spfile;  
alter system set open_cursors=1000 SCOPE=spfile;  
alter system set pga_aggregate_target = 0 scope=spfile;
```

- 8** Run the `utlrp.sql` script to recompile any invalid objects. Enter the following command:

```
@?\rdbms\admin\utlrp.sql
```

(The @ symbol indicates to SQL*Plus that what follows is a script. The ? symbol represents the `ORACLE_HOME` directory.)

- 9** Exit SQL*Plus by entering the following command:

```
exit;
```

- 10** Stop the Oracle database instance.

- 11** (Optional) Symantec recommends that you back up your database before restarting it with the upgraded software.

- 12** Apply the latest Critical Patch Update (CPU) from Oracle. See the *Symantec Data Loss Prevention Oracle 11g Release 2 Critical Patch Update Guide* for the most recent Oracle CPU patch.

See [“Upgrading from Oracle version 11.2.0.2 to Oracle version 11.2.0.3”](#) on page 51.

Backing up and restoring the Oracle database on Windows

This chapter includes the following topics:

- [Performing a cold backup of the Oracle database on Windows](#)
- [About recovering the database on Windows](#)
- [Restoring an existing database on Windows](#)

Performing a cold backup of the Oracle database on Windows

Cold backups are recommended primarily for non-database administrator users.

You perform a cold backup by

- Stopping the Symantec Data Loss Prevention system
- Shutting down the Oracle database
- Copying important files to a safe backup location

If your company has a three-tier installation and its own database administration team and backup policies, you may not need to perform cold backups.

Be aware that Symantec only provides support for the cold backup procedures that are described here.

See [“Oracle hot backups on Windows platforms”](#) on page 68.

Table 5-1 Steps to perform a cold backup of the Oracle database

Step	Action	Description
Step 1	Create recovery aid files.	See “Creating recovery aid files on Windows” on page 64.
Step 2	Collect a list of directories that should be backed up.	See “Collecting a list of files to be backed up” on page 66.
Step 3	Shut down all of the Symantec Data Loss Prevention and Oracle services.	See “Shutting down the Symantec Data Loss Prevention system on Windows” on page 66.
Step 4	Copy the database files to the backup location.	See “Copying the database files to the backup location on Windows” on page 67.
Step 5	Restart the Oracle and Symantec Data Loss Prevention services.	See “Restarting the system on Windows” on page 68.

Creating recovery aid files on Windows

You should create recovery aid files for use in recovery procedures. A trace file of the control file and a copy of the init.ora file are very helpful for database recoveries.

The trace file of the control file contains the names and locations of all of the data files. This trace includes any additional data files that have been added to the database. It also contains the redo logs and the commands that can be used to recreate the database structure.

The init.ora file contains the initialization parameters for Oracle, including the names and locations of the database control files.

To generate a trace file of the control file

- 1 To open Oracle SQL*Plus, navigate to **Windows > Start > All Programs > Oracle - OraDb10g_home1 > Application Development > SQL Plus**.

Refer to the *Symantec Data Loss Prevention Installation Guide* and the *Symantec Data Loss Prevention Oracle Installation and Upgrade Guide*.

- 2 At the `SQL>` command prompt, to connect as the sysdba user, enter

```
connect sys/password@protect as sysdba
```

where *password* is the password created for single-tier and two-tier installations.

See the *Symantec Data Loss Prevention Installation Guide*.

- 3 After receiving the *Connected* message, at the `SQL>` command prompt, enter:

```
alter database backup controlfile to trace;
```

- 4 To find the directory in which the trace file was created, in the next line, enter:

```
show parameter user_dump;
```

- 5 Backup the `init.ora` file:

```
create pfile='C:\Recovery_Aid\init.ora' from spfile;
```

- 6 Run the following command:

```
create pfile='C:\Recovery_Aid\inittemp.ora' from spfile;
```

- 7 Navigate to the directory from step 4.

- 8 In Windows, copy the trace file from the directory in step 4 to the `\Recovery_Aid` subdirectory that you created earlier on the backup computer.

If you have not yet created this directory, create the following directory on a computer other than the computer that hosts the Oracle database:

```
\SymantecDLP_Backup_Files\Recovery_Aid
```

Other trace files are located in the `user_dump` directory. Look for files that end with `controlfile.trc`. Be sure to copy the file with the most recent date and timestamp.

- 9 Rename the file so that it can be easily identified, for example:

```
controlfilebackupMMDDYY.trc.
```

See [“Collecting a list of files to be backed up”](#) on page 66.

See [“Performing a cold backup of the Oracle database on Windows”](#) on page 63.

Collecting a list of files to be backed up

You can create a list of files that need to be backed up. These lists are used in a later step.

To create a list of files for back up

- 1 Open SQL*Plus using the following command:

```
sqlplus sys/<password> as sysdba
```

- 2 Enter following SQL commands to create lists of directories that must be backed up:

```
SELECT file_name FROM dba_data_files
UNION
SELECT file_name FROM dba_temp_files
UNION
SELECT name FROM v$controlfile;

exit;
```

Shutting down the Symantec Data Loss Prevention system on Windows

To shut down the system

- 1 On the computer that hosts the database, navigate to **Start > All Programs > Administrative Tools > Services** to open the Windows Services menu.
- 2 Open the Services menu and stop all running Symantec Data Loss Prevention services, which might include the following:
 - Vontu Update
 - Vontu Incident Persister (on the computers that also host the Enforce Server)
 - Vontu Manager (on the computers that also host the Enforce Server)
 - Vontu Monitor (on the computers that also host a detection server)
 - Vontu Monitor Controller (on the computers that also host the Enforce Server)

- Vontu Notifier (on the computers that also host the Enforce Server)

- 3 Stop the OracleService *databasename*, where *databasename* is the Global Database Name and SID selected during installation.

The database must be named *protect* for Symantec Data Loss Prevention to work correctly.

Refer to the *Symantec Data Loss Prevention Installation Guide*.

See [“Performing a cold backup of the Oracle database on Windows”](#) on page 63.

Copying the database files to the backup location on Windows

The database files that should be backed up include the files in the `\protect` directory and the database password file.

To copy the database files to the backup location

- 1 Make sure that the Oracle services are stopped.

If the Oracle services are not stopped, the backup files may be corrupt and unusable.

See [“Shutting down the Symantec Data Loss Prevention system on Windows”](#) on page 66.

- 2 On the computer that hosts the database, copy the directories (and their contents) using the list of directories that you collected previously (See [“Collecting a list of files to be backed up”](#) on page 66.) to the computer that hosts the backup files. Copy the `protect` directory into the `c:\Backup_Files\Database` directory of the computer that hosts the backup files.

Note: If you are performing this backup as part of a complete backup of a Symantec Data Loss Prevention deployment, the file path and the name of the computer that hosts the backup files should have been recorded in the Recovery Information Worksheet for reference. Otherwise, create a backup location on a computer that is accessible from the Oracle host.

- 3 On the computer that hosts the database, select the `%ORACLE_HOME%\database\PWDprotect.ora` file and copy it into the `c:\Backup_Files\Database` directory of the computer that hosts the backup files.

See [“Performing a cold backup of the Oracle database on Windows”](#) on page 63.

Restarting the system on Windows

To restart the system

- 1 On the computer that hosts the database, navigate to **Start > All Programs > Administrative Tools > Services** to open the Windows Services menu.
- 2 From the Services menu, start all of the Oracle services:
 - OracleServiceDATABASENAME
 - OracleDBConsole`databasename`

where *databasename* is the Global Database Name and SID selected during installation. For single- and two-tier installations, the database must be named *protect* for Symantec Data Loss Prevention to work correctly.

Refer to the *Symantec Data Loss Prevention Installation Guide*.
- 3 In single-tier and two-tier installations, before starting other Symantec Data Loss Prevention services, start the Vontu Notifier service.
- 4 In single-tier and two-tier installations, start the remaining Symantec Data Loss Prevention services, which might include the following:
 - Vontu Manager (on the computers that also host the Enforce Server)
 - Vontu Monitor (on the computers that also host a detection server)
 - Vontu Incident Persister (on the computers that also host the Enforce Server)
 - Vontu Update
 - Vontu Monitor Controller (on the computers that also host the Enforce Server)

See [“Performing a cold backup of the Oracle database on Windows”](#) on page 63.

Oracle hot backups on Windows platforms

If you are an experienced Oracle database administrator accustomed to managing enterprise-level Oracle installation, you may choose to perform hot backups. If you do, you should also perform archive logging. However, keep in mind that Symantec Data Loss Prevention does not support hot backup procedures and Symantec Support may not be able to provide assistance.

See [“Performing a cold backup of the Oracle database on Windows”](#) on page 63.

About recovering the database on Windows

Based on the type of database failure you experienced, choose the appropriate database recovery procedure:

- If the previous database can no longer be used, create a new database.
- If the database malfunctioned due to a system failure or user error, restore the previously existing database. For example, if an important file was accidentally deleted, you can restore the database to a point in time when the important file still existed.

See [“Restoring an existing database on Windows”](#) on page 69.

Restoring an existing database on Windows

See [“About recovering the database on Windows”](#) on page 69.

To recover the database by restoring the existing database

- 1 Make sure that the database environment is healthy. Check the existing database, the database server that hosts the existing database, and the computer that hosts the database server.
- 2 On the computer that hosts the database, navigate to **Start > All Programs > Administrative Tools > Services**. This navigation opens the Windows Services menu.
- 3 From the Windows Services menu, if you have a single-tier or a two-tier installation, stop all Symantec Data Loss Prevention services, which might include the following:
 - Vontu Update
 - Vontu Incident Persister (on the computer hosting the Enforce Server)
 - Vontu Manager (on the computer hosting the Enforce Server)
 - Vontu Monitor (on the computer or computers hosting a detection server)
 - Vontu Monitor Controller (on the computer hosting the Enforce Server)
 - Vontu Notifier (on the computer hosting the Enforce Server)
- 4 Stop all of the Oracle services.

Refer to the *Symantec Data Loss Prevention Installation Guide*.

- 5 Copy the contents of the `\Backup_Files\Database` directory to the `\oracle\product\10.2.0\oradata\protect` directory on the computer that hosts the new database. The information about the computers and directories is located on the Recovery Information Worksheet.
- 6 To open Oracle SQL*Plus, navigate to **Windows > Start > All Programs > Oracle - OraDb11g_home1 > Application Development > SQL Plus**. This navigation assumes the default locations from the Oracle installation process. This process is described in the *Symantec Data Loss Prevention Installation Guide*.
- 7 At the `SQL>` command prompt, to connect as the sysdba user, enter:


```
connect sys/password@protect as sysdba
```


where *password* is the password created for single- and two-tier installations. See the *Symantec Data Loss Prevention Installation Guide*.
- 8 At the `SQL>` prompt, enter:


```
startup
```

Installing Oracle 11g on Linux

This chapter includes the following topics:

- [About the Oracle 11g installation](#)
- [Installing Oracle 11g on Linux](#)
- [Downloading the Oracle 11g software for Linux](#)
- [Performing the preinstallation steps](#)
- [Installing the Oracle 11g software for Linux](#)
- [Creating the Symantec Data Loss Prevention database](#)
- [Creating the TNS Listener on Linux](#)
- [Configuring the local net service name](#)
- [Verifying the Symantec Data Loss Prevention database](#)
- [Creating the Oracle user account for Symantec Data Loss Prevention](#)
- [Locking the DBSNMP Oracle user account](#)
- [Configuring automatic startup and shutdown of the database](#)

About the Oracle 11g installation

To use Symantec Data Loss Prevention, you must install Oracle 11g and create a database using the Symantec Data Loss Prevention database template. You must also create an Oracle user account with the correct permissions to access and

modify the database. The Enforce Server uses this account to store configuration and incident data for the Symantec Data Loss Prevention deployment.

You can perform a two-tier or single-tier Symantec Data Loss Prevention installation. In both of these cases, the database runs on the same computer as the Enforce Server. Alternatively, you can perform a three-tier Symantec Data Loss Prevention installation. In this case, the database runs on a different computer from the Enforce Server.

In a three-tier installation, your organization's database administration team installs, creates, and maintains the Symantec Data Loss Prevention database. If your organization already has other databases that run on Oracle 11g, consider using your organization's existing Oracle 11g installation. For information about how to set up the Symantec Data Loss Prevention database in a three-tier environment, contact your Symantec representative.

If you implement a three-tier installation, you must install the Oracle Client (SQL*Plus and Database Utilities) on the Enforce Server. Installation of the Oracle Client enables database communications between the Oracle database server and the Enforce Server. The Symantec Data Loss Prevention installer needs SQL*Plus to create tables and views on the Enforce Server. For this reason, the Linux user account that is used to install Symantec Data Loss Prevention needs access to SQL*Plus.

For full details on how to install the Oracle 11g Database Client software, see the platform-specific documentation from Oracle Corporation, available from the Oracle Documentation Library at http://www.oracle.com/pls/db111/portal.portal_db?selected=11.

Note: After you create the Symantec Data Loss Prevention database and complete the Symantec Data Loss Prevention installation, you can change the database password. To change the database password, you use the Symantec Data Loss Prevention DBPasswordChanger utility.

For more information about the Symantec Data Loss Prevention DBPasswordChanger utility, see the *Symantec Data Loss Prevention Administration Guide*.

About the Oracle 11g Client software for Linux

For full details on how to install the Oracle 11g Database Client software, see the *Oracle® Database Client Installation Guide 11g Release 2 (11.2) for Linux*. To view this document, see

http://download.oracle.com/docs/cd/E11882_01/install.112/e16765/toc.htm.

Installing Oracle 11g on Linux

Install Oracle 11g and create the Symantec Data Loss Prevention database by performing the following steps on the server computer that will host the Oracle database.

Table 6-1 Installing Oracle 11g and creating the Symantec Data Loss Prevention database

Step	Action	Description
Step 1	Review the system requirements for the Oracle 11g.	See the Oracle Web pages for the system requirements for Oracle 11g and the <i>Symantec Data Loss Prevention System Requirements and Compatibility Guide</i> .
Step 2	Download the Oracle 11g software.	See “Downloading the Oracle 11g software for Linux” on page 74.
Step 3	Perform the preinstallation steps.	See “Performing the preinstallation steps” on page 75.
Step 4	Install Oracle 11g.	See “Installing the Oracle 11g software for Linux” on page 78.
Step 5	Create the Symantec Data Loss Prevention database.	See “Creating the Symantec Data Loss Prevention database” on page 16.
Step 6	Create the database listener.	See “Creating the TNS Listener on Linux” on page 84.
Step 7	Configure the local net service name.	See “Configuring the local net service name” on page 22.
Step 8	Create the Symantec Data Loss Prevention database user.	See “Creating the Oracle user account for Symantec Data Loss Prevention ” on page 24.
Step 9	Lock the DBSNMP account for security purposes.	See “Locking the DBSNMP Oracle user account” on page 25.

Table 6-1 Installing Oracle 11g and creating the Symantec Data Loss Prevention database (*continued*)

Step	Action	Description
Step 10	Install the Oracle Critical Patch Update (CPU).	The latest <i>Oracle 11g Release 2 Critical Patch Update Guide</i> explains how to download and apply the latest CPU for Oracle.
Step 11	Configure your system to start Oracle when the server computer boots.	See “ Configuring automatic startup and shutdown of the database ” on page 90.

Downloading the Oracle 11g software for Linux

You should have received a Symantec Serial Number Certificate with your order that lists a serial number for each of your products. If you did not receive the certificate, contact Symantec Customer Care as described at http://www.symantec.com/business/support/assistance_care.jsp. If you have multiple serial numbers, locate the serial number that corresponds to Oracle Standard Edition.

Go to <https://fileconnect.symantec.com> and enter the serial number. Proceed to the list of available downloads and download and extract the following files:

- `Oracle_11.2.0.3.0_Server_Lin32_1of2.zip` and `Oracle_11.2.0.3.0_Server_Lin32_2of2.zip` (for 32-bit installations)
These ZIP files contain the 32-bit Oracle 11g Release 2 software (`linux_11.2.0.3_database_1of2.zip` and `linux_11.2.0.3_database_2of2.zip`).
- `Oracle_11.2.0.3.0_Server_Lin64_1of2.zip` and `Oracle_11.2.0.3.0_Server_Lin64_2of2.zip` (for 64-bit installations)
This ZIP file contains the 64-bit Oracle 11g Release 2 software (`linux64_11.2.0.3_database_1of2.zip` and `linux64_11.2.0.3_database_2of2.zip`).
- `Oracle_11.2.0.3.0_Server_Installation_Tools_Lin.zip`
This ZIP file contains the Symantec Data Loss Prevention Oracle database template and database user SQL script (`11g_r2_32_bit_Installation_Tools.tar.gz` and `11g_r2_64_bit_Installation_Tools.tar.gz`).

Performing the preinstallation steps

Perform the following steps to prepare your Linux environment for installation.

To prepare the Linux environment

- 1 Log on as the root user. Copy the `11g_r2_32_bit_Installation_Tools.tar.gz` file (for 32-bit platforms) or `11g_r2_64_bit_Installation_Tools.tar.gz` file (for 64-bit platforms) to the Linux server and extract its contents into the temporary directory (`/tmp`). For example:

```
tar xvfz 11g_r2_32_bit_Installation_Tools.tar.gz -C /tmp
```

Extracting creates a subdirectory that is called `oracle_install` in the `/tmp` directory and extracts the files into that subdirectory.

- 2 Go to the `oracle_install` directory and run the verification script to verify the requirements for the database.

```
cd /tmp/oracle_install  
./scripts/oracle_verify.sh
```

Note: You must run this script in the `oracle_install` directory. Do not change directory to the `scripts` directory.

The script displays the following items that you need to verify:

- Physical memory
See the *Symantec Data Loss Prevention System Requirements and Compatibility Guide*.
- Swap space
Oracle requires swap space equal to the size of RAM.

If the system does not have the required swap space, you can add temporary swap space to your system. You create a temporary swap file instead of using a raw device. You should create swap space only after you restart the server. If you create the swap space and then restart the server, then the swap space is removed when the server is restarted.

- 3 Verify that there is at least 400 MB under `/tmp`.
- 4 Verify that the Red Hat Enterprise Linux version is the version that Symantec requires for running Symantec Data Loss Prevention. See the *Symantec Data Loss Prevention System Requirements and Compatibility Guide*.

5 Verify that the following RPM packages with the required version (or higher) have been installed:

■ Required 32-bit RPMs for 32-bit installations:

```
binutils-2.17.50.0.6
compat-libstdc++-33-3.2.3
elfutils-libelf-0.125
elfutils-libelf-devel-0.125
gcc-4.1.2
gcc-c++-4.1.2
glibc-2.5-24
glibc-common-2.5
glibc-devel-2.5
glibc-headers-2.5
kernel-headers-2.6.18
ksh-20060214
libaio-0.3.106
libaio-devel-0.3.106
libgcc-4.1.2
libstdc++-4.1.2
libstdc++-devel 4.1.2
make-3.81
sysstat-7.0.2
```

■ Required 64-bit RPMs for 64-bit installations:

```
binutils-2.17.50.0.6
compat-libstdc++-33-3.2.3
elfutils-libelf-0.125
elfutils-libelf-devel-0.125
gcc-4.1.2
gcc-c++-4.1.2
glibc-2.5-24
glibc-common-2.5
glibc-devel-2.5
glibc-headers-2.5
ksh-20060214
libaio-0.3.106
libaio-devel-0.3.106
libgcc-4.1.2
libstdc++-4.1.2
libstdc++-devel 4.1.2
```

```
make-3.81  
sysstat-7.0.2
```

Note: The kernel-headers-2.6.18 package is not mandatory for database installations on Linux x86. You can ignore the OUI or CVU warning to install this package.

If any of these packages are not installed, then the script returns a message saying that packet is not installed. For example, package `gnome-libs` is not installed. Install any missing packages.

6 Run the `oracle_prepare.sh` script:

```
./scripts/oracle_prepare.sh
```

If the Oracle user does not already exist, you are prompted for the password for the new Oracle user. The Oracle user is used to install and manage the Oracle database. This script sets proper kernel parameters for the Oracle database.

`oracle_prepare.sh` overwrites certain kernel parameters in the `/etc/sysctl.conf` file. Oracle recommends the settings for these parameters. However, you may want certain parameters to be set to higher values than those suggested by Oracle. In that case, you can edit `/etc/sysctl.conf` file after running `oracle_prepare.sh`. The original values are commented out by the shell script. The new values are those recommended by Oracle. If you choose to manually edit this file, make sure that you do not make the values lower than those recommended by Oracle.

7 Restart the server so that the updated kernel parameters take effect.

- 8 If the server does not have enough swap space (as determined in the verification process), add more, temporarily:

```
dd if=/dev/zero of=tmpswap bs=1k count=4194304
chmod 600 tmpswap
mkswap tmpswap
swapon tmpswap
```

This command can take several minutes to complete.

The foregoing example creates 4 GB (1K * 4,194,304) of additional swap space, thereby avoiding the need to use a raw device.

After installing the Oracle software, you can remove any temporary swap space you previously created by entering the following commands:

```
swapoff tmpswap
rm tmpswap
```

- 9 Verify that there is enough space under `/var`. For a small to medium enterprise, `/var` should have at least 15 GB. For a large enterprise, `/var` should have at least 30 GB. For a very large enterprise, `/var` should have at least 45 GB of free space. As your organization's traffic expands, these figures should increase, and you must allocate more free space.
- 10 Verify that the `/opt` and `/boot` file systems have the required free space for your Symantec Data Loss Prevention installation. See the *Symantec Data Loss Prevention System Requirements and Compatibility Guide* for more information.

Installing the Oracle 11g software for Linux

The Enforce Server uses the Oracle thin driver and the Oracle Client. Symantec Data Loss Prevention packages the JAR files for the Oracle thin driver with the Symantec Data Loss Prevention software. But, you must also install the Oracle Client. The Symantec Data Loss Prevention installer needs SQL*Plus to create tables and views on the Enforce Server. Therefore, the Linux user account that is used to install Symantec Data Loss Prevention must be able to access to SQL*Plus.

See [“About the Oracle 11g Client software for Linux”](#) on page 72.

Although you install Oracle 11g as the Oracle user, you also need to perform some tasks as the root user. You might find it easier to switch to a dedicated root xterm window instead of changing users. Open two terminal windows; the first is for

the Oracle user, the second for the root user. Enter `su - oracle` in the first window; enter `su - root` in the second window. Keep these separate windows open throughout the Oracle installation.

The instructions in this section assume that you are logged on locally to the Linux server and running the X Window System. If you connect to the server remotely, you need a terminal emulator. You also need to set the location where the GUI tools can display their output; you use the `export display` command to do that. For example:

```
export DISPLAY=ip_address:display_number
```

Note: Refer to the configuration information in the X server management program for the IP address and display number. Typically, the display number is 0.

As you run the GUI tools later, you might get a response similar to the following:

```
X connection to localhost:10.0 broken (explicit kill or server shutdown)
```

Run the `export display` command again.

To install Oracle 11g Release 2

1 Log on as the Oracle user.

```
su - oracle
```

2 Copy the required software installation files or file to `/home/oracle`:

- For 32-bit systems, copy both `linux_11.2.0.3_database_1of2.zip` and `linux_11.2.0.3_database_2of2.zip`.
- For 64-bit systems, copy both `linux64_11.2.0.3_database_1of2.zip` and `linux64_11.2.0.3_database_2of2.zip`.

3 From `/home/oracle`, unzip all of the ZIP files you copied. For example:

```
unzip linux64_11.2.0.3_database_1of2.zip
```

You must run the `unzip` command as the Oracle user. If you run it as the root user, then the Oracle user is not able to view the extracted files unless you change the permissions. However, changing the permissions is not advisable from a security standpoint.

- 4 For 32-bit system, unzip the `linux_11.2.0.3_database_1of2.zip` and `linux_11.2.0.3_database_2of2.zip` files.

For 64-bit system, unzip the `linux64_11.2.0.3_database_1of2.zip` and `linux64_11.2.0.3_database_2of2.zip` files.

- 5 Go to `/home/oracle/database` and run the installer:

```
./runInstaller -ignoresysprereqs
```

- 6 On the **Configure Security Updates** panel, deselect **I wish to receive security updates via My Oracle Support**, and click **Next**.

Symantec certifies and provides Oracle Critical Patch Updates for use with Symantec Data Loss Prevention, along with detailed installation instructions. You do not need to receive these updates from Oracle Support.

- 7 Click **Yes** to confirm that you have not provided an email address.

- 8 In the **Download Software Updates** panel, select **Skip software updates** and click **Next**.

- 9 On the **Select Installation Option** panel, select **Install database software only** and click **Next**.

- 10 On the **Grid Installation Options** panel, select **Single instance database installation** and click **Next**.

- 11 On the **Select Product Languages** panel, click **Next** to accept English as the default language.

- 12 On the **Select Database Edition** panel, select **Standard Edition** and click **Next**.

- 13 On the **Specify Installation Location** panel, enter the following paths in the specified fields, and click **Next**:

■ **Oracle Base:** Enter `/opt/oracle`

■ **Software Location:** Enter `/opt/oracle/product/11.2.0.3/db_1`

- 14 If this is the first Oracle installation on the server computer, the installer application displays the **Create Inventory** panel. Enter `/opt/oracle/oraInventory` as the inventory path and `oinstall` as the group name, and click **Next**.

The installer may display a warning message recommending that you place the central inventory location outside of the Oracle base directory. You can safely ignore this message for Symantec Data Loss Prevention database installations.

- 15** On the **Privileged Operating System Groups** panel, click **Next** to grant the Database Administrator and Database Operator privileges to the default dba group.

The installer application performs a prerequisite check and displays the results.

- 16** On the **Summary** panel, click **Install** to begin the installation.

The installer application installs the Oracle 11g software on your computer.

- 17** The installer displays the **Execute Configuration scripts** window, which instructs you to execute two scripts as the root user. From the root xterm window, run the following two scripts:

```
/opt/oracle/oraInventory/orainstRoot.sh  
/opt/oracle/product/11.2.0.3/db_1/root.sh
```

After you run the `/opt/oracle/product/11.2.0.3/db_1/root.sh` script, you are prompted to enter the full pathname to the local binary directory. Accept the default `/usr/local/bin` directory and press **Enter**. Enter **Y** each time the scripts asks for confirmation to overwrite the following files: `dbhome`, `oraenv` and `coraenv`.

The script displays `Finished product-specific root actions` when it is finished.

- 18** Return to the **Execute Configuration scripts** screen and click **OK**.
- 19** On the **Finish** panel, click **Close** to exit the installer application.

Creating the Symantec Data Loss Prevention database

Perform the following procedure to create the Symantec Data Loss Prevention database.

Note: If you are installing Oracle 11g on a 64-bit computer to migrate an existing 32-bit Symantec Data Loss Prevention database, do not perform this procedure.

See [“Migrating from Oracle 10g 32-bit to Oracle 11g 64-bit”](#) on page 140.

To create the Symantec Data Loss Prevention database

- 1 Set the ORACLE_HOME and ORACLE_SID environment variables for your new installation. Open a command prompt, and enter:

```
export ORACLE_HOME=/opt/oracle/product/11.2.0.3/db_1
export ORACLE_SID=protect
```

If you installed Oracle 11g into a different location, substitute the correct directory in this command.

You may want to add these commands to your user profile configuration so that the ORACLE_HOME and ORACLE_SID environment variables are defined each time you log on. See your Linux documentation for details about setting environment variables.

- 2 Extract the database template file (.dbt file) from the 11g_r2_32_bit_Installation_Tools.tar.gz or 11g_r2_64_bit_Installation_Tools.tar.gz file to the \$ORACLE_HOME/assistants/dbca/templates directory. For example, extract Oracle_11g_Database_for_Vontu_v11_32_bit_Lnx.dbt for 32-bit systems or Oracle_11g_Database_for_Vontu_v11_64_bit_Lnx.dbt for 64-bit systems.
- 3 Start the Oracle Database Configuration Assistant to create the Symantec Data Loss Prevention database:

```
$ORACLE_HOME/bin/dbca
```

- 4 On the **Welcome** panel, click **Next**.
- 5 On the **Operations** panel, select **Create a Database** and click **Next**.
- 6 On the **Database Templates** panel, select **Oracle 11g Database for Vontu v11 32 bit Lnx** for 32-bit installations, or select **Oracle 11g Database for Vontu v11 64 bit Lnx** for 64-bit installations. Click **Next**.

Caution: You must use the Symantec Data Loss Prevention template to create the database. Do not use an alternate template or reuse an existing database instance. If you do not use the supplied template, failures can occur when you use Symantec Data Loss Prevention. Failures can also occur later when you try to upgrade the product.

- 7 On the **Database Identification** panel, set the database name (Global Database Name) and the Oracle System Identifier (SID) by performing the following steps in this order:
 - Enter **protect** in the **Global Database Name** field.

The **SID** field is automatically set to **protect**. Keep the SID and the Global Database Name fields as the same value, "protect."

- Click **Next**.
 - Write down the database name and SID for later use when you install the Symantec Data Loss Prevention software.
- 8 On the **Management Options** panel, perform the following steps in order:
- Deselect **Configure Enterprise Manager**.
 - Select the **Automatic Maintenance Tasks** tab and deselect **Enable automatic maintenance tasks**.
 - Click **Next**.
- 9 On the **Database Credentials** panel, perform the following steps in order:
- Select **Use the Same Administrative Password for All Accounts**.
 - Enter a password in the **Password** field.
 - Re-enter the same password in the **Confirm Password** field.
 - Click **Next**.

Follow these guidelines to create acceptable passwords:

- Passwords cannot contain more than 30 characters.
- Passwords cannot contain double quotation marks, commas, or backslashes.
- Avoid using the & character.
- Passwords are case-sensitive by default. You can change the case sensitivity through an Oracle configuration setting.
- If your password uses special characters other than `_`, `#`, or `$`, or if your password begins with a number, you must enclose the password in double quotes when you configure it.

If you enter a password that does not meet these guidelines, Oracle keeps prompting for a password. You must enter a password. Do not kill the Oracle Database Configuration Assistant.

Note: You can optionally use different passwords for each user account type. The various user account types are SYS, SYSTEM, DBSNMP, and SYSMAN.

- 10 On the **Database File Locations** panel, accept the default selection, **Use Database File Locations from Template**, and click **Finish**.

- 11 Accept the default values on the following panels, and click **Next** to move to the next panel:

- Recovery Configuration
- Database Content
- Initialization Parameters
- Database Storage
- Creation Options

The Database Configuration Assistant displays a **Confirmation** window with a summary of the database configuration.

- 12 Click **OK** on the **Confirmation** window to create the database.

The database creation can take up to 20 minutes to complete. If the database creation process fails or hangs, check the Oracle Database Configuration Assistant logs (located in the `$ORACLE_HOME/cfgtoollogs/dbca/SID` directory) for errors (for example, `/opt/oracle/product/11.2.0/db_1/cfgtoollogs/dbca/protect`).

When the database creation process is complete, another **Database Configuration Assistant** window opens and displays the database details.

- 13 Click **Exit**.

Creating the TNS Listener on Linux

Perform the following procedure to create a TNS listener for the Symantec Data Loss Prevention database.

To create the TNS Listener

- 1 Start the Oracle Net Configuration Assistant:

```
$ORACLE_HOME/bin/netca
```

- 2 On the **Welcome** panel, select **Listener configuration** and click **Next**.
- 3 On the **Listener Configuration, Listener** panel, select **Add** and click **Next**.
- 4 On the **Listener Configuration, Listener Name** panel, enter a listener name and click **Next**.

Note: Use the default listener name, LISTENER, unless you must use a different name.

- 5 On the **Listener Configuration, Select Protocols** panel, select the **TCP** protocol and click **Next**.
- 6 On the **Listener Configuration, TCP/IP Protocol** panel, select **Use the standard port number of 1521** and click **Next**.
- 7 On the **Listener Configuration, More Listeners?** panel, select **No** and click **Next**.
- 8 On the **Listener Configuration Done** panel, click **Next**.
- 9 Leave the Oracle Net Configuration Assistant open to configure the Local Net Service Name.
- 10 Log into the Oracle host computer as the Oracle user.
- 11 Run the following command:

```
lsnrctl stop
```

- 12 Open the following file in a text editor:

```
$ORACLE_HOME/network/admin/listener.ora
```

- 13 Locate the following line:

```
(ADDRESS = (PROTOCOL = IPC) (KEY = <key_value>))
```

- 14 Change *key_value* to `PROTECT`.

- 15 Add the following line to the end of the file:

```
SECURE_REGISTER_LISTENER = (IPC)
```

- 16 Save the file and exit the text editor.

- 17 Run the following command:

```
lsnrctl start
```

- 18 Run the following commands to connect to the database using SQL Plus:

```
sqlplus /nolog
```

```
conn sys/<password> as sysdba
```

- 19 Run the following command:

```
ALTER SYSTEM SET local_listener =  
' (DESCRIPTION=(ADDRESS=(PROTOCOL=ipc) (KEY=PROTECT))) ' SCOPE=both;
```

- 20 Run the following command to register the listener:

```
ALTER SYSTEM REGISTER;
```

- 21 Exit SQL Plus by running the following command:

```
exit
```

- 22 Run the following command to verify the change:

- 23 `lsnrctl services`

The command output should display a message similar to the following:

```
Services Summary...
Service "protect" has 1 instance(s).
Instance "protect", status READY, has 1 handler(s) for this service...
  Handler(s):
    "DEDICATED" established:0 refused:0 state:ready
    LOCAL SERVER
The command completed successfully
```

Configuring the local net service name

Perform the following procedure to configure the Local Net Service Name for the Symantec Data Loss Prevention database.

To configure the local net service name

- 1 If the Oracle Net Configuration Assistant is not already running, start it:

```
$ORACLE_HOME/bin/netca
```

- 2 On the **Welcome** panel, select **Local Net Service Name configuration** and click **Next**.
- 3 On the **Net Service Name Configuration** panel, select **Add** and click **Next**.
- 4 On the **Net Service Name Configuration, Service Name** panel, enter "protect" in the **Service Name** field and click **Next**.
- 5 On the **Net Service Name Configuration, Select Protocols** panel, select **TCP** and click **Next**.
- 6 On the **Net Service Name Configuration, TCP/IP Protocol** panel:
- Enter the IP address of the Oracle server computer in the **Host name** field.
 - Select **Use the standard port number of 1521** (the default value).
 - Click **Next**.

- 7 On the **Net Service Name Configuration, Test** panel, select **No, do not test** and click **Next**.
Do not test the service configuration, because the listener has not yet started.
- 8 On the **Net Service Name Configuration, Net Service Name** panel, select accept the default name of "protect" and click **Next**.
- 9 On the **Net Service Name Configuration, Another Net Service Name?** panel, select **No** and click **Next**.
- 10 On the **Net Service Name Configuration Done** panel, select **Next**.
- 11 Click **Finish** to exit the Oracle Net Configuration Assistant.

Verifying the Symantec Data Loss Prevention database

After creating the Symantec Data Loss Prevention database, you should verify that it was created correctly.

To verify that the database was created correctly

- 1 Open a command prompt and start SQL*Plus:

```
$ORACLE_HOME/bin/sqlplus /nolog
```

- 2 Log on as the SYS user:

```
SQL> connect sys/password@protect as sysdba
```

Where *password* represents the SYS password.

- 3 Run the following query:

```
SQL> SELECT * FROM v$version;
```

- 4 Make sure that the output from the query contains the following information, which identifies the software components as version 11.2.0.3.0. For a 32-bit installation, the output should read:

BANNER

```
-----  
  
Oracle Database 11g Release 11.2.0.3.0 - 32bit Production  
PL/SQL Release 11.2.0.3.0 - Production  
CORE      11.2.0.3.0      Production  
TNS for Linux: Version 11.2.0.3.0 - Production  
NLSRTL Version 11.2.0.3.0 - Production
```

For a 64-bit installation, the output should read:

BANNER

```
-----  
  
Oracle Database 11g Release 11.2.0.3.0 - 64bit Production  
PL/SQL Release 11.2.0.3.0 - Production  
CORE      11.2.0.3.0      Production  
TNS for Linux: Version 11.2.0.3.0 - Production  
NLSRTL Version 11.2.0.3.0 - Production
```

- 5 Exit SQL*Plus:

```
SQL> exit
```

Creating the Oracle user account for Symantec Data Loss Prevention

Perform the following procedure to create an Oracle user account and name it “protect.”

To create the new Oracle user account named protect

- 1 Extract the SQL script file, `oracle_create_user.sql`, from the `11g_r2_32_bit_Installation_Tools.tar.gz` or `11g_r2_64_bit_Installation_Tools.tar.gz` file to a local directory.
- 2 Open a command prompt and go to the directory where you extracted the `oracle_create_user.sql` file.

3 Start SQL*Plus:

```
sqlplus /nolog
```

4 Run the `oracle_create_user.sql` script:

```
SQL> @oracle_create_user.sql
```

5 At the **Please enter the password for sys user prompt, enter the password for the SYS user.****6 At the **Please enter sid** prompt, enter "protect."****7 At the **Please enter required username to be created** prompt, enter "protect."****8 At the **Please enter a password for the new username** prompt, enter a new password.**

Follow these guidelines to create acceptable passwords:

- Passwords cannot contain more than 30 characters.
- Passwords cannot contain double quotation marks, commas, or backslashes.
- Avoid using the `&` character.
- Passwords are case-sensitive by default. You can change the case sensitivity through an Oracle configuration setting.
- If your password uses special characters other than `_`, `#`, or `$`, or if your password begins with a number, you must enclose the password in double quotes when you configure it.

Store the password in a secure location for future use. You will need this password to install Symantec Data Loss Prevention. If you need to change the password after you install Symantec Data Loss Prevention, see the *Symantec Data Loss Prevention Administration Guide* for instructions.

Locking the DBSNMP Oracle user account

To maintain security, you should lock the Oracle DBSNMP user account.

To lock the Oracle DBSNMP user account

- 1 Open a command prompt and start SQL*Plus:

```
sqlplus /nolog
```

- 2 Log on as the SYS user:

```
SQL> connect sys/password as sysdba
```

Where *password* is the SYS password.

- 3 Lock the DBSNMP user account:

```
SQL> ALTER USER dbsnmp ACCOUNT LOCK;
```

- 4 Exit SQL*Plus:

```
SQL> exit
```

Configuring automatic startup and shutdown of the database

You can configure automatic startup and shutdown of the database.

To configure the automatic startup and shutdown of the database

- 1 Switch to the root xterm window.
- 2 Go to the `oracle_install` directory.

```
cd /tmp/oracle/oracle_install
```

- 3 Run the `oracle_post.sh` script from the `oracle_install` directory.

```
./scripts/oracle_post.sh
```

- 4 Verify that the script completed successfully by checking if the very last line of the output is:

```
dbora 0:off 1:off 2:off 3:on 4:on 5:on 6:off
```

You may see errors before the last line (for example, `cannot access /var/log/dbora`). You can ignore these errors.

Upgrading from Oracle version 10.2.0.4 to version 11.2.0.3 on Linux

This chapter includes the following topics:

- [Upgrading an Oracle 10g database on Linux](#)
- [Performing the pre-upgrade steps](#)
- [Removing the Oracle 10g listener on Linux](#)
- [Upgrading from Oracle 10g to Oracle 11g](#)
- [Running the Network Configuration Assistant for an Oracle upgrade](#)
- [Running the Database Upgrade Assistant for an Oracle upgrade](#)
- [Configuring the TNS Listener](#)
- [Post-upgrade steps for an Oracle upgrade](#)

Upgrading an Oracle 10g database on Linux

If you have an existing Symantec Data Loss Prevention database that runs on Oracle 10g, you can choose to continue using that database, or you can upgrade the 10g database to use Oracle 11g. Follow these steps, in order, to upgrade an Oracle 10g Symantec Data Loss Prevention database to use Oracle 11g:

Table 7-1 Upgrading a Symantec Data Loss Prevention database from Oracle 10g to Oracle 11g

Step	Action	Description
Step 1	Review the system requirements for Oracle version 11.2.0.3.	See the Oracle Web pages for the system requirements for Oracle 11g and the <i>Symantec Data Loss Prevention System Requirements and Compatibility Guide</i> .
Step 2	Perform the pre-upgrade steps.	See “Performing the pre-upgrade steps” on page 95.
Step 3	Delete the existing Oracle 10g listener.	See “Removing the Oracle 10g listener on Linux” on page 95.
Step 4	Download the Oracle software.	See “Downloading the Oracle 11g software for Linux” on page 74.
Step 5	Upgrade the Oracle software.	See “Upgrading from Oracle 10g to Oracle 11g” on page 96.
Step 6	Run the Network Configuration Assistant.	See “Running the Network Configuration Assistant for an Oracle upgrade” on page 98.
Step 7	Run the Oracle Database Upgrade Assistant to upgrade the Symantec Data Loss Prevention database.	See “Running the Database Upgrade Assistant for an Oracle upgrade” on page 99.
Step 8	Configure the TNS Listener.	See “Configuring the TNS Listener” on page 100.
Step 9	Modify the configuration of the upgraded Symantec Data Loss Prevention database.	See “Post-upgrade steps for an Oracle upgrade” on page 101.

Table 7-1 Upgrading a Symantec Data Loss Prevention database from Oracle 10g to Oracle 11g (*continued*)

Step	Action	Description
Step 10	Install the Oracle Critical Patch Update (CPU).	The latest <i>Oracle 11g Release 2 Critical Patch Update Guide</i> explains how to download and apply the latest CPU for Oracle.

Performing the pre-upgrade steps

Complete the following steps before upgrading your Oracle software

To prepare your Oracle upgrade

- 1 Log in to the computer that hosts the Oracle database as the Oracle administrator. (This user is `oracle` by default.)
- 2 Open a command prompt window and enter the following command:

```
sqlplus sys/<password> as sysdba
```

The Oracle SQL*Plus command prompt (`SQL>`) displays in the Windows command prompt.

- 3 Run the following commands:

```
EXEC DBMS_STATS.GATHER_DICTIONARY_STATS;
PURGE dba_recyclebin;
exit;
```

See [“Upgrading the Oracle software”](#) on page 31.

Removing the Oracle 10g listener on Linux

Perform the following procedure to delete the existing Oracle 10g TNS listener before you upgrade to Oracle 11g.

To remove the Oracle 10g listener on Linux

- 1 Start the Oracle Net Configuration Assistant:
`$ORACLE_HOME/bin/netca`
- 2 On the **Welcome** panel, select **Listener configuration** and click **Next**.
- 3 On the **Listener Configuration, Listener** panel, select **Delete** and click **Next**.

- 4 On the **Listener Configuration, Select Listener** panel, select the name of the listener you want to delete, and click **Next**.
- 5 If the listener is running, the Net Configuration Assistant asks if you want to stop and delete the selected listener. Select **Yes**.
- 6 On the **Listener Configuration, Listener Deleted** panel, select **Next**.
- 7 On the **Listener Configuration Done** panel, select **Next**.
- 8 On the **Welcome** panel, select **Finish** to exit the Net Configuration Assistant.

Upgrading from Oracle 10g to Oracle 11g

If you have an existing Symantec Data Loss Prevention database running on Oracle 10g and you want to upgrade that database to run on Oracle 11g, follow these steps to perform the upgrade.

To upgrade an existing Symantec Data Loss Prevention database to Oracle 11g

- 1 Shut down the Enforce Server that accesses the Oracle 10g database.

See the *Symantec Data Loss Prevention System Administration Guide* for information about shutting down Symantec Data Loss Prevention servers.
- 2 Download and unzip the Oracle 11g software to the server computer that is running your Oracle 10g database.

See [“Downloading the Oracle 11g software for Linux”](#) on page 74.
- 3 Log on as the Oracle user.


```
su - oracle
```
- 4 Go to `/home/oracle/database` and run the Oracle 11g installer:


```
./runInstaller -ignoreysprereqs
```
- 5 On the **Configure Security Updates** panel, deselect **I wish to receive security updates via My Oracle Support**, and click **Next**.
- 6 Click **Yes** to confirm that you have not provided an email address.
- 7 In the **Download Software Updates** panel, select **Skip software updates** and click **Next**.
- 8 On the **Select Installation Option** panel, select **Upgrade an existing database** and click **Next**.
- 9 On the **Select Product Languages** panel, click **Next** to accept English as the default language.

- 10 On the **Select Database Edition** panel, select **Standard Edition** and click **Next**.
- 11 On the **Specify Installation Location** panel, enter the following paths in the specified fields, and click **Next**:
 - **Oracle Base:** Enter `/opt/oracle`
 - **Software Location:** Enter `/opt/oracle/product/11.2.0.3/db_1`
- 12 On the **Privileged Operating System Groups** panel, click **Next** to grant the Database Administrator and Database Operator privileges to the default dba group.
- 13 The installer application performs a prerequisite check and displays the results. If the installer indicates that the system failed when checking kernel parameters, click **Fix and Check again** and run the indicated scripts as the root user.
- 14 On the **Summary** panel, click **Install** to begin the installation.

The installer application installs the Oracle 11g software to your computer.

- 15 The installer displays the **Execute Configuration scripts** window, which instructs you to execute two scripts as the root user. From the root xterm window, run the following two scripts:

```
/opt/oracle/oraInventory/orainstRoot.sh
/opt/oracle/product/11.2.0.3/db_1/root.sh
```

After you run the `/opt/oracle/product/11.2.0.3/db_1/root.sh` script, you are prompted to enter the full pathname to the local binary directory. Accept the default `/usr/local/bin` directory and press **Enter**. Enter **Y** each time the scripts asks for confirmation to overwrite the following files: `dbhome`, `oraenv` and `coraenv`.

The script displays `Finished product-specific root actions` when it is finished.

- 16 On the **Finish** panel, click **Close** to exit the installer application.

The installer upgrades the Oracle 10g software and then starts the Oracle Net Configuration Assistant.

Running the Network Configuration Assistant for an Oracle upgrade

- 1 On the Oracle Net Configuration Assistant **Welcome** panel, deselect **Perform typical configuration** and click **Next**.
- 2 On the **Listener Configuration, Listener Name** panel, enter a listener name and click **Next**.

Note: Use the default listener name, LISTENER, unless you must use a different name.

- 3 On the **Listener Configuration, Select Protocols** panel, select the **TCP** protocol and click **Next**.
- 4 On the **Listener Configuration, TCP/IP Protocol** panel, select **Use the standard port number of 1521** and click **Next**.
- 5 On the **Listener Configuration, More Listeners?** panel, select **No** and click **Next**.
- 6 On the **Listener Configuration Done** panel, click **Next**.
- 7 On the **Welcome** panel, select **Local Net Service Name configuration** and click **Next**.
- 8 On the **Net Service Name Configuration** panel, select **Add** and click **Next**.
- 9 On the **Net Service Name Configuration, Service Name** panel, enter "protect" in the **Service Name** field and click **Next**.
- 10 On the **Net Service Name Configuration, Select Protocols** panel, select **TCP** and click **Next**.
- 11 On the **Net Service Name Configuration, TCP/IP Protocol** panel:
 - Enter the IP address of the Oracle server computer in the **Host name** field.
 - Select **Use the standard port number of 1521** (the default value).
 - Click **Next**.
- 12 On the **Net Service Name Configuration, Test** panel, select **No, do not test** and click **Next**.

Do not test the service configuration, because the listener has not yet started.
- 13 On the **Net Service Name Configuration, Net Service Name** panel, select accept the default name of "protect" and click **Next**.

- 14 On the **Net Service Name Configuration, Another Net Service Name?** panel, select **No** and click **Next**.
- 15 On the **Net Service Name Configuration Done** panel, select **Next**.
- 16 Click **Finish** to exit the Oracle Net Configuration Assistant.

Running the Database Upgrade Assistant for an Oracle upgrade

- 1 On the **Welcome** panel of the Database Upgrade Assistant, click **Next**.
- 2 On the **Select Database** panel:
 - Select the **PROTECT** database from the list of available databases.
 - Enter the password to the sys account in the **Password** field.
 - Click **Next** to continue.

The upgrade assistant gathers information about the PROTECT database.
- 3 The upgrade assistant may display a **Warnings** window that lists warning conditions that were determined during the upgrade check. If the window indicates that you should purge the recycle bin, start SQL*Plus and enter the `purge dba_recyclebin;` command. Then click **Yes** to continue with the upgrade. You can view review other warning conditions at a later time by examining the `$ORACLE_HOME/cfgtoollogs/dbua/protect/upgraded1/PreUpgradeResults.html` file.
- 4 On the **Upgrade Options** panel:
 - Select **Backup database** and specify a backup directory if you do not have a current backup of the PROTECT database.
 - Ensure that **Recompile invalid objects at the end of the upgrade** is selected.
 - Click **Next** to continue.
- 5 On the **Move Database Files** panel:
 - Select **Do Not Move Database Files during Upgrade**.
 - Select **File System**.
 - Click **Next** to continue.
- 6 On the **Recovery and Diagnostic Locations** panel, click **Next** to accept the default destinations.

- 7 On the **Management Options** panel, click **Next** to accept the default configuration.
- 8 If Oracle Enterprise Manager was not installed in the original Oracle 10g installation, On the **Management Options** panel, make sure there are no selections made and click **Next** to accept the default configuration.
- 9 On the **Summary** panel, click **Finish** to begin the database upgrade.

The Database Upgrade Assistant displays a **Progress** window while it performs the upgrade.

At the **Progress** window you may see the error, Identifier SYS.DBMS_JAVA must be declared. You can safely ignore this error by clicking **Ignore**.
- 10 On the **Upgrade Result** panel, click **Close**. The Database Upgrade Assistant displays a document summary. Depending on your database environment, the summary may display errors such as 00201: identifier SYS.DBMS_JAVA must be declared, which can be ignored.

Configuring the TNS Listener

To configure the TNS Listener

- 1 Log into the Oracle host computer as the Oracle user.
- 2 Run the following command:

```
lsnrctl stop
```

- 3 Open the following file in a text editor:

```
$ORACLE_HOME/network/admin/listener.ora
```

- 4 Locate the following line:

```
(ADDRESS = (PROTOCOL = IPC) (KEY = <key_value>))
```

- 5 Change *key_value* to PROTECT.
- 6 Add the following line to the end of the file:

```
SECURE_REGISTER_LISTENER = (IPC)
```

- 7 Save the file and exit the text editor.
- 8 Run the following command:

```
lsnrctl start
```

- 9** Run the following commands to connect to the database using SQL Plus:

```
sqlplus /nolog

conn sys/<password> as sysdba
```

- 10** Run the following command:

```
ALTER SYSTEM SET local_listener =
    ' (DESCRIPTION=(ADDRESS=(PROTOCOL=ipc) (KEY=PROTECT))) ' SCOPE=both;
```

- 11** Run the following command to register the listener:

```
ALTER SYSTEM REGISTER;
```

- 12** Exit SQL Plus by running the following command:

```
exit
```

- 13** Run the following command to verify the change:

- 14** `lsnrctl services`

The command output should display a message similar to the following:

```
Services Summary...
Service "protect" has 1 instance(s).
Instance "protect", status READY, has 1 handler(s) for this service...
Handler(s):
    "DEDICATED" established:0 refused:0 state:ready
    LOCAL SERVER
The command completed successfully
```

See [“Upgrading an Oracle 10g database on Linux”](#) on page 93.

Post-upgrade steps for an Oracle upgrade

To complete your Oracle upgrade

- 1** Copy the following file from the Symantec Data Loss Prevention Enforce Server host to a directory on the database host computer:

`DLP_home/Protect/install/sql/Fix_KeywordCondition.sql` (Where `DLP_home` is the directory where Symantec Data Loss Prevention was installed.)

- 2** Open a terminal session on the database server host and navigate to the directory where you copied the `Fix_KeywordCondition.sql` file.

3 Enter the following command :

```
sqlplus protect/password  
@Fix_KeywordCondition.sql  
exit;
```

4 Enter the following command to launch SQL*Plus:

```
sqlplus /nolog
```

5 Log in as the SYS user by entering the following command:

```
connect sys/<password> as sysdba
```

6 Enter the following SQL plus command:

```
alter profile default limit password_life_time unlimited;
```

7 Enter the following commands to modify the database initialization parameters:

```
alter system set memory_max_target = 1536m scope=spfile;  
alter system set memory_target = 1536m scope=spfile;  
alter system set sga_max_size = 0 scope=spfile;  
alter system set sga_target = 0 scope=spfile;  
alter system set compatible = '11.2.0.3.0' scope=spfile;  
alter system set open_cursors=1000 SCOPE=spfile;  
alter system set pga_aggregate_target = 0 scope=spfile;
```

8 Run the utlrlp.sql script to recompile any invalid objects. Enter the following command:

```
@?/rdbms/admin/utlrlp.sql
```

(The @ symbol indicates to SQL*Plus that what follows is a script. The ? symbol represents the ORACLE_HOME directory.)

9 Stop the Oracle database instance using the following commands:

```
shutdown immediate;  
exit;
```

10 Open the following file in a text editor:

```
.bash_profile
```

Make sure the value of the ORACLE_HOME is set to:

```
export ORACLE_HOME=/opt/oracle/product/11.2.0.3/db_1
```

- 11** Exit SQL*Plus by entering the following command:

```
exit;
```

- 12** (Optional) Symantec recommends that you back up your database before restarting it with the upgraded software.
- 13** Apply the latest Critical Patch Update (CPU) from Oracle. See the *Symantec Data Loss Prevention Oracle 11g Release 2 Critical Patch Update Guide* for the most recent Oracle CPU patch.

Upgrading from Oracle version 11.2.0.1 to version 11.2.0.3 on Linux

This chapter includes the following topics:

- [Upgrading an Oracle version 11.2.0.1 database to Oracle version 11.2.0.3 on Linux](#)
- [Performing the pre-upgrade steps](#)
- [Deleting the Oracle version 11.2.0.1 listener on Linux](#)
- [Upgrading the Oracle version 11.2.0.1 software](#)
- [Running the Network Configuration Assistant for an Oracle upgrade](#)
- [Running the Database Upgrade Assistant for an Oracle upgrade](#)
- [Configuring the TNS Listener](#)
- [Post-upgrade steps for an Oracle upgrade](#)

Upgrading an Oracle version 11.2.0.1 database to Oracle version 11.2.0.3 on Linux

If you have an existing Symantec Data Loss Prevention database that runs on Oracle version 11.2.0.1, you can choose to continue using that database, or you can upgrade the version 11.2.0.1 database to use Oracle version 11.2.0.3. Note that future Oracle Critical Patch Updates (CPU) are only supported for Oracle

version 11.2.0.3. Follow the steps in [Table 8-1](#) to upgrade an Oracle version 11.2.0.1 Symantec Data Loss Prevention database to use Oracle version 11.2.0.3.

Note: The current supported version of Oracle for use with Symantec Data Loss Prevention version 11.6 is Oracle 11g version 11.2.0.3.

Table 8-1 Upgrading a Symantec Data Loss Prevention database from Oracle version 11.2.0.1 to version 11.2.0.3

Step	Action	Description
Step 1	Review the system requirements for Oracle version 11.2.0.3.	See the Oracle Web pages for the system requirements for Oracle 11g and the <i>Symantec Data Loss Prevention System Requirements and Compatibility Guide</i> .
Step 2	Perform the pre-upgrade steps to prepare your system for the upgrade.	See “Performing the pre-upgrade steps” on page 107.
Step 3	Delete the existing Oracle version 11.2.0.1 listener.	See “Deleting the Oracle version 11.2.0.1 listener on Linux” on page 107.
Step 4	Download the Oracle software.	See “Downloading the Oracle 11g software for Linux” on page 74.
Step 5	Upgrade the Oracle software.	See “Upgrading the Oracle version 11.2.0.1 software” on page 108.
Step 6	Run the Network Configuration Assistant.	See “Running the Network Configuration Assistant for an Oracle upgrade” on page 110.
Step 7	Run the Oracle Database Upgrade Assistant to upgrade the Symantec Data Loss Prevention database.	See “Running the Database Upgrade Assistant for an Oracle upgrade” on page 111.
Step 8	Configure the TNS Listener.	See “Configuring the TNS Listener” on page 113.

Table 8-1 Upgrading a Symantec Data Loss Prevention database from Oracle version 11.2.0.1 to version 11.2.0.3 *(continued)*

Step	Action	Description
Step 9	Modify the configuration of the upgraded Symantec Data Loss Prevention database.	See “Post-upgrade steps for an Oracle upgrade” on page 114.
Step 10	Install the Oracle Critical Patch Update (CPU).	The latest <i>Oracle 11g Release 2 Critical Patch Update Guide</i> explains how to download and apply the latest CPU for Oracle.

Performing the pre-upgrade steps

Complete the following steps before upgrading your Oracle software

To prepare your Oracle upgrade

- 1 Log in to the computer that hosts the Oracle database as the Oracle administrator. (This user is `oracle` by default.)
- 2 Open a command prompt window and enter the following command:


```
sqlplus sys/<password> as sysdba
```

The Oracle SQL*Plus command prompt (`SQL>`) displays in the Windows command prompt.

- 3 Run the following commands:

```
EXEC DBMS_STATS.GATHER_DICTIONARY_STATS;
PURGE dba_recyclebin;
exit;
```

See [“Upgrading an Oracle version 11.2.0.1 database to Oracle version 11.2.0.3 on Linux”](#) on page 105.

Deleting the Oracle version 11.2.0.1 listener on Linux

Perform the following procedure to delete the existing Oracle version 11.2.0.1 TNS listener before you upgrade to Oracle version 11.2.0.3.

To delete the Oracle version 11.2.0.1 listener on Linux

- 1 Start the Oracle Net Configuration Assistant:

```
$ORACLE_HOME/bin/netca
```

- 2 On the **Welcome** panel, select **Listener configuration** and click **Next**.
- 3 On the **Listener Configuration, Listener** panel, select **Delete** and click **Next**.
- 4 On the **Listener Configuration, Select Listener** panel, select the name of the listener you want to delete, and click **Next**.
- 5 If the listener is running, the Net Configuration Assistant asks if you want to stop and delete the selected listener. Select **Yes**.
- 6 On the **Listener Configuration, Listener Deleted** panel, select **Next**.
- 7 On the **Listener Configuration Done** panel, select **Next**.
- 8 On the **Welcome** panel, select **Finish** to exit the Net Configuration Assistant.

See [“Upgrading an Oracle version 11.2.0.1 database to Oracle version 11.2.0.3 on Linux”](#) on page 105.

Upgrading the Oracle version 11.2.0.1 software

If you have an existing Symantec Data Loss Prevention database running on Oracle version 11.2.0.1 and you want to upgrade that database to run on Oracle version 11.2.0.3, follow the steps in this section to perform the upgrade.

Note: This type of upgrade uses an "out-of-place" installation procedure that installs Oracle software into a new `ORACLE_HOME` location.

To upgrade the Oracle version 11.2.0.1 software to version 11.2.0.3

- 1 Shut down the Enforce Server that accesses the Oracle version 11.2.0.1 database.

See the *Symantec Data Loss Prevention System Administration Guide* for information about shutting down Symantec Data Loss Prevention servers.
- 2 Download and unzip the Oracle version 11.2.0.3 software to the server computer that is running your Oracle version 11.2.0.1 database.

See [“Downloading the Oracle 11g software for Linux”](#) on page 74.
- 3 Log on as the Oracle user.

```
su - oracle
```

- 4 Go to `/home/oracle/database` and run the Oracle version 11.2.0.3 installer:

`./runInstaller -ignoreprereqs`
- 5 On the **Configure Security Updates** panel, deselect **I wish to receive security updates via My Oracle Support**, and click **Next**.
- 6 Click **Yes** to confirm that you have not provided an email address.
- 7 In the **Download Software Updates** panel, select **Skip software updates** and click **Next**.
- 8 On the **Select Installation Option** panel, select **Upgrade an existing database** and click **Next**.
- 9 On the **Select Product Languages** panel, click **Next** to accept English as the default language.
- 10 On the **Select Database Edition** panel, select **Standard Edition** and click **Next**.
- 11 On the **Specify Installation Location** panel, enter the following paths in the specified fields, and click **Next**:
 - **Oracle Base:** Enter `/opt/oracle`.
 - **Software Location:** Enter `/opt/oracle/product/11.2.0.3/db_1`.
- 12 On the **Privileged Operating System Groups** panel, click **Next** to grant the Database Administrator and Database Operator privileges to the default `dba` group.
- 13 The installer application performs a prerequisite check and displays the results. If the installer indicates that the system failed when checking kernel parameters, click **Fix and Check again** and run the indicated scripts as the root user.
- 14 On the **Summary** panel, click **Install** to begin the installation.

The installer application installs the Oracle version 11.2.0.3 software to your computer.

- 15 The installer displays the **Execute Configuration scripts** window, which instructs you to execute two scripts as the root user. From the root xterm window, run the following two scripts:

```
/opt/oracle/oraInventory/orainstRoot.sh  
/opt/oracle/product/11.2.0.3/db_1/root.sh
```

After you run the `/opt/oracle/product/11.2.0.3/db_1/root.sh` script, you are prompted to enter the full pathname to the local binary directory. Accept the default `/usr/local/bin` directory and press **Enter**. Enter **Y** each time the scripts asks for confirmation to overwrite the following files: `dbhome`, `oraenv` and `coraenv`.

The script displays `Finished product-specific root actions` when it is finished.

- 16 On the **Finish** panel, click **Close** to exit the installer application.

The installer upgrades the Oracle version 11.2.0.1 software and then starts the Oracle Net Configuration Assistant.

See [“Upgrading an Oracle version 11.2.0.1 database to Oracle version 11.2.0.3 on Linux”](#) on page 105.

Running the Network Configuration Assistant for an Oracle upgrade

To run the Network Configuration Assistant

- 1 On the Oracle Net Configuration Assistant **Welcome** panel, deselect **Perform typical configuration** and click **Next**.
- 2 On the **Listener Configuration, Listener Name** panel, enter a listener name and click **Next**.

Note: Use the default listener name, `LISTENER`, unless you must use a different name.

- 3 On the **Listener Configuration, Select Protocols** panel, select the **TCP** protocol and click **Next**.
- 4 On the **Listener Configuration, TCP/IP Protocol** panel, select **Use the standard port number of 1521** and click **Next**.
- 5 On the **Listener Configuration, More Listeners?** panel, select **No** and click **Next**.

- 6 On the **Listener Configuration Done** panel, click **Next**.
- 7 On the **Welcome** panel, select **Local Net Service Name configuration** and click **Next**.
- 8 On the **Net Service Name Configuration** panel, select **Add** and click **Next**.
- 9 On the **Net Service Name Configuration, Service Name** panel, enter "protect" in the **Service Name** field and click **Next**.
- 10 On the **Net Service Name Configuration, Select Protocols** panel, select **TCP** and click **Next**.
- 11 On the **Net Service Name Configuration, TCP/IP Protocol** panel:
 - Enter the IP address of the Oracle server computer in the **Host name** field.
 - Select **Use the standard port number of 1521** (the default value).
 - Click **Next**.
- 12 On the **Net Service Name Configuration, Test** panel, select **No, do not test** and click **Next**.

Do not test the service configuration, because the listener has not yet started.
- 13 On the **Net Service Name Configuration, Net Service Name** panel, select accept the default name of "protect" and click **Next**.
- 14 On the **Net Service Name Configuration, Another Net Service Name?** panel, select **No** and click **Next**.
- 15 On the **Net Service Name Configuration Done** panel, select **Next**.
- 16 Click **Finish** to exit the Oracle Net Configuration Assistant.

See [“Upgrading an Oracle version 11.2.0.1 database to Oracle version 11.2.0.3 on Linux”](#) on page 105.

Running the Database Upgrade Assistant for an Oracle upgrade

To run the Database Upgrade Assistant

- 1 On the **Welcome** panel of the Database Upgrade Assistant, click **Next**.
- 2 On the **Select Database** panel:
 - Select the PROTECT database from the list of available databases.
 - Enter the password to the sys account in the **Password** field.
 - Click **Next** to continue.

The upgrade assistant gathers information about the PROTECT database.

- 3 The upgrade assistant may display a **Warnings** window that lists warning conditions that were determined during the upgrade check. If the window indicates that you should purge the recycle bin, start SQL*Plus and enter the `purge dba_recyclebin;` command. Then click **Yes** to continue with the upgrade. You can view review other warning conditions at a later time by examining the

`$ORACLE_HOME/cfgtoollogs/dbua/protect/upgradel/PreUpgradeResults.html` file.

- 4 On the **Upgrade Options** panel:
 - Select **Backup database** and specify a backup directory if you do not have a current backup of the PROTECT database.
 - Ensure that **Recompile invalid objects at the end of the upgrade** is selected.
 - Click **Next** to continue.
- 5 On the **Move Database Files** panel:
 - Select **Do Not Move Database Files during Upgrade**.
 - Select **File System**.
 - Click **Next** to continue.
- 6 On the **Recovery and Diagnostic Locations** panel, click **Next** to accept the default destinations.
- 7 On the **Management Options** panel, click **Next** to accept the default configuration.
- 8 If Oracle Enterprise Manager was not installed in the original Oracle version 11.2.0.1 installation, On the **Management Options** panel, make sure there are no selections made and click **Next** to accept the default configuration.
- 9 On the **Summary** panel, click **Finish** to begin the database upgrade.

The Database Upgrade Assistant displays a **Progress** window while it performs the upgrade.

At the **Progress** window you may see the error, Identifier SYS.DBMS_JAVA must be declared. You can safely ignore this error by clicking **Ignore**.

- 10 On the **Upgrade Result** panel, click **Close**. The Database Upgrade Assistant displays a document summary. Depending on your database environment, the summary may display errors such as 00201: identifier SYS.DBMS_JAVA must be declared, which can be ignored.

See [“Upgrading an Oracle version 11.2.0.1 database to Oracle version 11.2.0.3 on Linux”](#) on page 105.

Configuring the TNS Listener

To configure the TNS Listener

1 Log into the Oracle host computer as the Oracle user.

2 Run the following command:

```
lsnrctl stop
```

3 Open the following file in a text editor:

```
$ORACLE_HOME/network/admin/listener.ora
```

4 Locate the following line:

```
(ADDRESS = (PROTOCOL = IPC) (KEY = <key_value>))
```

5 Change *key_value* to PROTECT.

6 Add the following line to the end of the file:

```
SECURE_REGISTER_LISTENER = (IPC)
```

7 Save the file and exit the text editor.

8 Run the following command:

```
lsnrctl start
```

9 Run the following commands to connect to the database using SQL Plus:

```
sqlplus /nolog
```

```
conn sys/<password> as sysdba
```

10 Run the following command:

```
ALTER SYSTEM SET local_listener =  
'(DESCRIPTION=(ADDRESS=(PROTOCOL=ipc) (KEY=PROTECT)))' SCOPE=both;
```

11 Run the following command to register the listener:

```
ALTER SYSTEM REGISTER;
```

12 Exit SQL Plus by running the following command:

```
exit
```

13 Run the following command to verify the change:

14 `lsnrctl services`

The command output should display a message similar to the following:

```
Services Summary...
Service "protect" has 1 instance(s).
Instance "protect", status READY, has 1 handler(s) for this service...
  Handler(s):
    "DEDICATED" established:0 refused:0 state:ready
    LOCAL SERVER
The command completed successfully
```

Post-upgrade steps for an Oracle upgrade

To complete your Oracle upgrade

- 1** Copy the following file from the Symantec Data Loss Prevention Enforce Server host to a directory on the database host computer:

`DLP_home/Protect/install/sql/Fix_KeywordCondition.sql` (Where `DLP_home` is the directory where Symantec Data Loss Prevention was installed.)

- 2** Open a terminal session on the database server host and navigate to the directory where you copied the `Fix_KeywordCondition.sql` file.

- 3** Enter the following command :

```
sqlplus protect/password
@Fix_KeywordCondition.sql
exit;
```

- 4** Enter the following command to launch SQL*Plus:

```
sqlplus /nolog
```

- 5** Log in as the SYS user by entering the following command:

```
connect sys/<password> as sysdba
```

- 6** Enter the following SQL plus command:

```
alter profile default limit password_life_time unlimited;
```

- 7** Enter the following commands to modify the database initialization parameters:

32-bit:

```
alter system set memory_max_target = 1536m scope=spfile;  
alter system set memory_target = 1536m scope=spfile;  
alter system set sga_max_size = 0 scope=spfile;  
alter system set sga_target = 0 scope=spfile;  
alter system set compatible = '11.2.0.2.0' scope=spfile;  
alter system set open_cursors=1000 SCOPE=spfile;  
alter system set pga_aggregate_target = 0 scope=spfile;
```

64-bit:

```
alter system set memory_max_target = 3072m scope=spfile;  
alter system set memory_target = 3072m scope=spfile;  
alter system set sga_max_size = 0 scope=spfile;  
alter system set sga_target = 0 scope=spfile;  
alter system set compatible = '11.2.0.2.0' scope=spfile;  
alter system set open_cursors=1000 SCOPE=spfile;  
alter system set pga_aggregate_target = 0 scope=spfile;
```

- 8** Run the `utlrp.sql` script to recompile any invalid objects. Enter the following command:

```
@?/rdbms/admin/utlrp.sql
```

(The `@` symbol indicates to SQL*Plus that what follows is a script. The `?` symbol represents the `ORACLE_HOME` directory.)

- 9** Stop the Oracle database instance using the following commands:

```
shutdown immediate;  
exit;
```

- 10** Run the following command:

```
cd /home/oracle
```

- 11** Open the following file in a text editor:

```
.bash_profile
```

Make sure the value of the `ORACLE_HOME` is set to:

```
export ORACLE_HOME=/opt/oracle/product/11.2.0.3/db_1
```

- 12** Run the following command to exit as the `oracle` user and then sign in again as the `oracle` user:

```
exit  
su - oracle
```

- 13** (Optional) Symantec recommends that you back up your database before restarting it with the upgraded software.
- 14** Apply the latest Critical Patch Update (CPU) from Oracle. See the *Symantec Data Loss Prevention Oracle 11g Release 2 Critical Patch Update Guide* for the most recent Oracle CPU patch.

See [“Upgrading an Oracle version 11.2.0.1 database to Oracle version 11.2.0.3 on Linux”](#) on page 105.

Upgrading from Oracle version 11.2.0.2 to version 11.2.0.3 on Linux

This chapter includes the following topics:

- [Upgrading an Oracle version 11.2.0.2 database to Oracle version 11.2.0.3 on Linux](#)
- [Performing the pre-upgrade steps](#)
- [Deleting the Oracle version 11.2.0.2 listener on Linux](#)
- [Upgrading the Oracle version 11.2.0.2 software](#)
- [Running the Network Configuration Assistant for an Oracle upgrade](#)
- [Running the Database Upgrade Assistant for an Oracle upgrade](#)
- [Configuring the TNS Listener](#)
- [Post-upgrade steps for an Oracle upgrade](#)

Upgrading an Oracle version 11.2.0.2 database to Oracle version 11.2.0.3 on Linux

If you have an existing Symantec Data Loss Prevention database that runs on Oracle version 11.2.0.2, you can choose to continue using that database, or you can upgrade the version 11.2.0.2 database to use Oracle version 11.2.0.3. Note that future Oracle Critical Patch Updates (CPU) are only supported for Oracle

version 11.2.0.3. Follow the steps in [Table 9-1](#) to upgrade an Oracle version 11.2.0.2 Symantec Data Loss Prevention database to use Oracle version 11.2.0.3.

Note: The current supported version of Oracle for use with Symantec Data Loss Prevention version 11.6 is Oracle 11g version 11.2.0.3.

Table 9-1 Upgrading a Symantec Data Loss Prevention database from Oracle version 11.2.0.2 to version 11.2.0.3

Step	Action	Description
Step 1	Review the system requirements for Oracle version 11.2.0.3.	See the Oracle Web pages for the system requirements for Oracle 11g and the <i>Symantec Data Loss Prevention System Requirements and Compatibility Guide</i> .
Step 2	Perform the pre-upgrade steps to prepare your system for the upgrade.	See “Performing the pre-upgrade steps” on page 119.
Step 3	Delete the existing Oracle version 11.2.0.2 listener.	See “Deleting the Oracle version 11.2.0.2 listener on Linux” on page 119.
Step 4	Download the Oracle software.	See “Downloading the Oracle 11g software for Linux” on page 74.
Step 5	Upgrade the Oracle software.	See “Upgrading the Oracle version 11.2.0.2 software” on page 120.
Step 6	Run the Network Configuration Assistant.	See “Running the Network Configuration Assistant for an Oracle upgrade” on page 122.
Step 7	Run the Oracle Database Upgrade Assistant to upgrade the Symantec Data Loss Prevention database.	See “Running the Database Upgrade Assistant for an Oracle upgrade” on page 123.
Step 8	Configure the TNS Listener.	See “Configuring the TNS Listener” on page 125.

Table 9-1 Upgrading a Symantec Data Loss Prevention database from Oracle version 11.2.0.2 to version 11.2.0.3 *(continued)*

Step	Action	Description
Step 9	Modify the configuration of the upgraded Symantec Data Loss Prevention database.	See “Post-upgrade steps for an Oracle upgrade” on page 126.
Step 10	Install the Oracle Critical Patch Update (CPU).	The latest <i>Oracle 11g Release 2 Critical Patch Update Guide</i> explains how to download and apply the latest CPU for Oracle.

Performing the pre-upgrade steps

Complete the following steps before upgrading your Oracle software

To prepare your Oracle upgrade

- 1 Log in to the computer that hosts the Oracle database as the Oracle administrator. (This user is `oracle` by default.)
- 2 Open a command prompt window and enter the following command:

```
sqlplus sys/<password> as sysdba
```

The Oracle SQL*Plus command prompt (`SQL>`) displays in the Windows command prompt.

- 3 Run the following commands:

```
EXEC DBMS_STATS.GATHER_DICTIONARY_STATS;
PURGE dba_recyclebin;
exit;
```

See [“Upgrading an Oracle version 11.2.0.2 database to Oracle version 11.2.0.3 on Linux”](#) on page 117.

Deleting the Oracle version 11.2.0.2 listener on Linux

Perform the following procedure to delete the existing Oracle version 11.2.0.2 TNS listener before you upgrade to Oracle version 11.2.0.3.

To delete the Oracle version 11.2.0.2 listener on Linux

- 1 Start the Oracle Net Configuration Assistant:

```
$ORACLE_HOME/bin/netca
```

- 2 On the **Welcome** panel, select **Listener configuration** and click **Next**.
- 3 On the **Listener Configuration, Listener** panel, select **Delete** and click **Next**.
- 4 On the **Listener Configuration, Select Listener** panel, select the name of the listener you want to delete, and click **Next**.
- 5 If the listener is running, the Net Configuration Assistant asks if you want to stop and delete the selected listener. Select **Yes**.
- 6 On the **Listener Configuration, Listener Deleted** panel, select **Next**.
- 7 On the **Listener Configuration Done** panel, select **Next**.
- 8 On the **Welcome** panel, select **Finish** to exit the Net Configuration Assistant.

See [“Upgrading an Oracle version 11.2.0.2 database to Oracle version 11.2.0.3 on Linux”](#) on page 117.

Upgrading the Oracle version 11.2.0.2 software

If you have an existing Symantec Data Loss Prevention database running on Oracle version 11.2.0.2 and you want to upgrade that database to run on Oracle version 11.2.0.3, follow the steps in this section to perform the upgrade.

Note: This type of upgrade uses an "out-of-place" installation procedure that installs Oracle software into a new `ORACLE_HOME` location.

To upgrade the Oracle version 11.2.0.2 software to version 11.2.0.3

- 1 Shut down the Enforce Server that accesses the Oracle version 11.2.0.2 database.

See the *Symantec Data Loss Prevention System Administration Guide* for information about shutting down Symantec Data Loss Prevention servers.
- 2 Download and unzip the Oracle version 11.2.0.3 software to the server computer that is running your Oracle version 11.2.0.2 database.

See [“Downloading the Oracle 11g software for Linux”](#) on page 74.
- 3 Log on as the Oracle user.

```
su - oracle
```


- 4 Go to `/home/oracle/database` and run the Oracle version 11.2.0.3 installer:

`./runInstaller -ignoreprereqs`
- 5 On the **Configure Security Updates** panel, deselect **I wish to receive security updates via My Oracle Support**, and click **Next**.
- 6 Click **Yes** to confirm that you have not provided an email address.
- 7 In the **Download Software Updates** panel, select **Skip software updates** and click **Next**.
- 8 On the **Select Installation Option** panel, select **Upgrade an existing database** and click **Next**.
- 9 On the **Select Product Languages** panel, click **Next** to accept English as the default language.
- 10 On the **Select Database Edition** panel, select **Standard Edition** and click **Next**.
- 11 On the **Specify Installation Location** panel, enter the following paths in the specified fields, and click **Next**:
 - **Oracle Base:** Enter `/opt/oracle`.
 - **Software Location:** Enter `/opt/oracle/product/11.2.0.3/db_1`.
- 12 On the **Privileged Operating System Groups** panel, click **Next** to grant the Database Administrator and Database Operator privileges to the default `dba` group.
- 13 The installer application performs a prerequisite check and displays the results. If the installer indicates that the system failed when checking kernel parameters, click **Fix and Check again** and run the indicated scripts as the root user.
- 14 On the **Summary** panel, click **Install** to begin the installation.

The installer application installs the Oracle version 11.2.0.3 software to your computer.

- 15** The installer displays the **Execute Configuration scripts** window, which instructs you to execute two scripts as the root user. From the root xterm window, run the following two scripts:

```
/opt/oracle/oraInventory/orainstRoot.sh  
/opt/oracle/product/11.2.0.3/db_1/root.sh
```

After you run the `/opt/oracle/product/11.2.0.3/db_1/root.sh` script, you are prompted to enter the full pathname to the local binary directory. Accept the default `/usr/local/bin` directory and press **Enter**. Enter **Y** each time the scripts asks for confirmation to overwrite the following files: `dbhome`, `oraenv` and `coraenv`.

The script displays `Finished product-specific root actions` when it is finished.

- 16** On the **Finish** panel, click **Close** to exit the installer application.

The installer upgrades the Oracle version 11.2.0.2 software and then starts the Oracle Net Configuration Assistant.

See [“Upgrading an Oracle version 11.2.0.2 database to Oracle version 11.2.0.3 on Linux”](#) on page 117.

Running the Network Configuration Assistant for an Oracle upgrade

To run the Network Configuration Assistant

- 1** On the Oracle Net Configuration Assistant **Welcome** panel, deselect **Perform typical configuration** and click **Next**.
- 2** On the **Listener Configuration, Listener Name** panel, enter a listener name and click **Next**.

Note: Use the default listener name, `LISTENER`, unless you must use a different name.

- 3** On the **Listener Configuration, Select Protocols** panel, select the **TCP** protocol and click **Next**.
- 4** On the **Listener Configuration, TCP/IP Protocol** panel, select **Use the standard port number of 1521** and click **Next**.
- 5** On the **Listener Configuration, More Listeners?** panel, select **No** and click **Next**.

- 6 On the **Listener Configuration Done** panel, click **Next**.
- 7 On the **Welcome** panel, select **Local Net Service Name configuration** and click **Next**.
- 8 On the **Net Service Name Configuration** panel, select **Add** and click **Next**.
- 9 On the **Net Service Name Configuration, Service Name** panel, enter "protect" in the **Service Name** field and click **Next**.
- 10 On the **Net Service Name Configuration, Select Protocols** panel, select **TCP** and click **Next**.
- 11 On the **Net Service Name Configuration, TCP/IP Protocol** panel:
 - Enter the IP address of the Oracle server computer in the **Host name** field.
 - Select **Use the standard port number of 1521** (the default value).
 - Click **Next**.
- 12 On the **Net Service Name Configuration, Test** panel, select **No, do not test** and click **Next**.

Do not test the service configuration, because the listener has not yet started.
- 13 On the **Net Service Name Configuration, Net Service Name** panel, select accept the default name of "protect" and click **Next**.
- 14 On the **Net Service Name Configuration, Another Net Service Name?** panel, select **No** and click **Next**.
- 15 On the **Net Service Name Configuration Done** panel, select **Next**.
- 16 Click **Finish** to exit the Oracle Net Configuration Assistant.

See [“Upgrading an Oracle version 11.2.0.2 database to Oracle version 11.2.0.3 on Linux”](#) on page 117.

Running the Database Upgrade Assistant for an Oracle upgrade

To run the Database Upgrade Assistant

- 1 On the **Welcome** panel of the Database Upgrade Assistant, click **Next**.
- 2 On the **Select Database** panel:
 - Select the PROTECT database from the list of available databases.
 - Enter the password to the sys account in the **Password** field.
 - Click **Next** to continue.

The upgrade assistant gathers information about the PROTECT database.

- 3 The upgrade assistant may display a **Warnings** window that lists warning conditions that were determined during the upgrade check. If the window indicates that you should purge the recycle bin, start SQL*Plus and enter the `purge dba_recyclebin;` command. Then click **Yes** to continue with the upgrade. You can view review other warning conditions at a later time by examining the

`$ORACLE_HOME/cfgtoollogs/dbua/protect/upgradel/PreUpgradeResults.html` file.

- 4 On the **Upgrade Options** panel:
 - Select **Backup database** and specify a backup directory if you do not have a current backup of the PROTECT database.
 - Ensure that **Recompile invalid objects at the end of the upgrade** is selected.
 - Click **Next** to continue.

- 5 On the **Move Database Files** panel:
 - Select **Do Not Move Database Files during Upgrade**.
 - Select **File System**.
 - Click **Next** to continue.

- 6 On the **Recovery and Diagnostic Locations** panel, click **Next** to accept the default destinations.

- 7 On the **Management Options** panel, click **Next** to accept the default configuration.

- 8 If Oracle Enterprise Manager was not installed in the original Oracle version 11.2.0.2 installation, On the **Management Options** panel, make sure there are no selections made and click **Next** to accept the default configuration.

- 9 On the **Summary** panel, click **Finish** to begin the database upgrade.

The Database Upgrade Assistant displays a **Progress** window while it performs the upgrade.

At the **Progress** window you may see the error, Identifier `SYS.DBMS_JAVA` must be declared. You can safely ignore this error by clicking **Ignore**.

- 10 On the **Upgrade Result** panel, click **Close**. The Database Upgrade Assistant displays a document summary. Depending on your database environment, the summary may display errors such as `00201: identifier SYS.DBMS_JAVA must be declared`, which can be ignored.

See [“Upgrading an Oracle version 11.2.0.2 database to Oracle version 11.2.0.3 on Linux”](#) on page 117.

Configuring the TNS Listener

To configure the TNS Listener

1 Log into the Oracle host computer as the Oracle user.

2 Run the following command:

```
lsnrctl stop
```

3 Open the following file in a text editor:

```
$ORACLE_HOME/network/admin/listener.ora
```

4 Locate the following line:

```
(ADDRESS = (PROTOCOL = IPC) (KEY = <key_value>))
```

5 Change *key_value* to PROTECT.

6 Add the following line to the end of the file:

```
SECURE_REGISTER_LISTENER = (IPC)
```

7 Save the file and exit the text editor.

8 Run the following command:

```
lsnrctl start
```

9 Run the following commands to connect to the database using SQL Plus:

```
sqlplus /nolog
```

```
conn sys/<password> as sysdba
```

10 Run the following command:

```
ALTER SYSTEM SET local_listener =  
'(DESCRIPTION=(ADDRESS=(PROTOCOL=ipc) (KEY=PROTECT)))' SCOPE=both;
```

11 Run the following command to register the listener:

```
ALTER SYSTEM REGISTER;
```

12 Exit SQL Plus by running the following command:

```
exit
```

13 Run the following command to verify the change:

14 `lsnrctl services`

The command output should display a message similar to the following:

```
Services Summary...
Service "protect" has 1 instance(s).
Instance "protect", status READY, has 1 handler(s) for this service...
  Handler(s):
    "DEDICATED" established:0 refused:0 state:ready
      LOCAL SERVER
The command completed successfully
```

See [“Upgrading an Oracle version 11.2.0.2 database to Oracle version 11.2.0.3 on Linux”](#) on page 117.

Post-upgrade steps for an Oracle upgrade

To complete your Oracle upgrade

1 Copy the following file from the Symantec Data Loss Prevention Enforce Server host to a directory on the database host computer:

`DLP_home/Protect/install/sql/Fix_KeywordCondition.sql` (Where `DLP_home` is the directory where Symantec Data Loss Prevention was installed.)

2 Open a terminal session on the database server host and navigate to the directory where you copied the `Fix_KeywordCondition.sql` file.

3 Enter the following command :

```
sqlplus protect/password
@Fix_KeywordCondition.sql
exit;
```

4 Enter the following command to launch SQL*Plus:

```
sqlplus /nolog
```

5 Log in as the SYS user by entering the following command:

```
connect sys/<password> as sysdba
```

6 Enter the following SQL plus command:

```
alter profile default limit password_life_time unlimited;
```

- 7** Enter the following commands to modify the database initialization parameters:

32-bit:

```
alter system set memory_max_target = 1536m scope=spfile;  
alter system set memory_target = 1536m scope=spfile;  
alter system set sga_max_size = 0 scope=spfile;  
alter system set sga_target = 0 scope=spfile;  
alter system set compatible = '11.2.0.3.0' scope=spfile;  
alter system set open_cursors=1000 SCOPE=spfile;  
alter system set pga_aggregate_target = 0 scope=spfile;
```

64-bit:

```
alter system set memory_max_target = 3072m scope=spfile;  
alter system set memory_target = 3072m scope=spfile;  
alter system set sga_max_size = 0 scope=spfile;  
alter system set sga_target = 0 scope=spfile;  
alter system set compatible = '11.2.0.3.0' scope=spfile;  
alter system set open_cursors=1000 SCOPE=spfile;  
alter system set pga_aggregate_target = 0 scope=spfile;
```

- 8** Run the `utlrp.sql` script to recompile any invalid objects. Enter the following command:

```
@?/rdbms/admin/utlrp.sql
```

(The `@` symbol indicates to SQL*Plus that what follows is a script. The `?` symbol represents the `ORACLE_HOME` directory.)

- 9** Stop the Oracle database instance using the following commands:

```
shutdown immediate;  
exit;
```

- 10** Run the following command:

```
cd /home/oracle
```

- 11** Open the following file in a text editor:

```
.bash_profile
```

Make sure the value of the `ORACLE_HOME` is set to:

```
export ORACLE_HOME=/opt/oracle/product/11.2.0.3/db_1
```

- 12** Run the following command to exit as the `oracle` user and then sign in again as the `oracle` user:

```
exit  
su - oracle
```

- 13** (Optional) Symantec recommends that you back up your database before restarting it with the upgraded software.
- 14** Apply the latest Critical Patch Update (CPU) from Oracle. See the *Symantec Data Loss Prevention Oracle 11g Release 2 Critical Patch Update Guide* for the most recent Oracle CPU patch.

See [“Upgrading an Oracle version 11.2.0.2 database to Oracle version 11.2.0.3 on Linux”](#) on page 117.

Backing up and restoring the Oracle database on Linux

This chapter includes the following topics:

- [Performing a cold backup of the Oracle database on Linux](#)
- [About recovering the database on Linux](#)
- [Restoring an existing database on Linux](#)

Performing a cold backup of the Oracle database on Linux

Cold backups are recommended primarily for non-database administrator users, and they are appropriate for single- and two-tier installations. You perform a cold backup by

- Stopping the Symantec Data Loss Prevention system
- Shutting down the Oracle database
- Copying important files to a safe backup location

If your company has a three-tier installation and its own database administration team, you may not need to perform cold backups. Also, you may not need to perform a cold backup if your company already has its own database backup policies and procedures.

The cold backup procedures that are included in this guide are the only backup procedures that Symantec supports.

See [“Oracle hot backups on Linux platforms”](#) on page 136.

Table 10-1 Steps to perform a cold backup of the Oracle database

Step	Action	Description
Step 1	Create recovery aid files.	See “Creating recovery aid files on Linux” on page 130.
Step 2	Collect a list of directories that should be backed up.	See “Collecting a list of files to be backed up” on page 132.
Step 3	Shut down all of the Symantec Data Loss Prevention and Oracle Services.	See “Shutting down the Symantec Data Loss Prevention system on Linux” on page 133.
Step 4	Copy the database files to the backup location.	See “Copying the database files to the backup location on Linux” on page 134.
Step 5	Restart the Oracle and Symantec Data Loss Prevention services.	See “Restarting the system on Linux” on page 134.

Creating recovery aid files on Linux

You should create recovery aid files for use in recovery procedures. A trace file of the control file and a copy of the init.ora file are very helpful for database recovery.

The trace file of the control file contains the names and locations of all of the data files. This trace includes any additional data files that have been added to the database. It also contains the redo logs and the commands that can be used to recreate the database structure.

The init.ora file contains the initialization parameters for Oracle, including the names and locations of the database control files.

To create a trace file of the control file

- 1 Log on to the computer that hosts the Oracle database as the `oracle` user.
- 2 To open Oracle SQL*Plus, enter:

```
sqlplus /nolog
```

- 3** At the `SQL>` command prompt, to connect as the `sysdba` user, enter

```
connect sys/password@protect as sysdba
```

where *password* is the password created for single-tier and two-tier installations.

See the *Symantec Data Loss Prevention Installation Guide*.

- 4** After receiving the *Connected* message, at the `SQL>` command prompt, enter:

```
alter session set tracefile_identifier = 'controlfile';
```

- 5** Run the following command:

```
alter database backup controlfile to trace;
```

- 6** To find the directory in which the trace file was created, in the next line, enter:

```
show parameter user_dump;
```

- 7** Run the following command:

```
create pfile='/Recovery_Aid/inittemp.ora' from spfile;
```

- 8** Enter the following command:

```
create pfile='/Recovery_Aid/init.ora' from spfile;
```

- 9** To exit Oracle SQL*Plus, enter:

```
exit
```

- 10 Change to the directory from step 6. Copy the trace file to the `/Recovery_Aid` subdirectory on the backup computer that you created earlier.

If you have not yet created this directory, create the following directory on a computer other than the computer that hosts the Oracle database:

```
/opt/SymantecDLP_Backup_Files/Recovery_Aid
```

Set permissions for this directory for the Oracle user by running the following command:

```
chmod 777 /opt/SymantecDLP/ -R
```

Other trace files are located in the `user_dump` directory. Be sure to copy the file with the most recent date and timestamp.

To check the date and the timestamps of the files in the directory, enter:

```
ls -l *controlfile.trc
```

- 11 Rename the file so that it can be easily identified, for example:

```
controlfilebackupMMDDYY.trc.
```

See [“Collecting a list of files to be backed up”](#) on page 132.

See [“Performing a cold backup of the Oracle database on Linux”](#) on page 129.

Collecting a list of files to be backed up

You can create a list of files that need to be backed up. These lists are used in a later step.

To create a list of files for back up

- 1 Open SQL*Plus using the following command:

```
sqlplus sys/<password> as sysdba
```

- 2 Enter following SQL commands to create lists of directories that must be backed up:

```
SELECT file_name FROM dba_data_files
UNION
SELECT file_name FROM dba_temp_files
UNION
SELECT name FROM v$controlfile;

exit;
```

Shutting down the Symantec Data Loss Prevention system on Linux

To shut down the system

- 1 On the computer that hosts the database, log on as root.

- 2 Go to the `/opt/SymantecDLP/Protect/bin` directory.

- 3 Stop all running Symantec Data Loss Prevention services:

```
./VontuUpdate.sh stop
```

```
./VontuIncidentPersister.sh stop (on the computers that also host the  
Enforce Server)
```

```
./VontuManager.sh stop (on the computers that also host the Enforce Server)
```

```
./VontuMonitor.sh stop (on the computers that also host a detection server)
```

```
./VontuMonitorController.sh stop (on the computers that also host the  
Enforce Server)
```

```
./VontuNotifier.sh stop (on the computers that also host the Enforce  
Server)
```

Services can be started by going to the `/etc` directory and running the following command:

```
.init.d/VontuServiceName start
```

Services can be stopped by changing to the `/etc` directory and running the following command:

```
.init.d/VontuServiceName stop
```

- 4 On the computer that hosts the database, log on as the oracle user.

- 5 To open Oracle SQL*Plus, enter:

```
sqlplus /nolog
```

- 6 At the `SQL>` command prompt, to connect as the sysdba user, enter:

```
connect sys/password@protect as sysdba
```

where *password* is the password created for single-tier and two-tier installations.

See the *Symantec Data Loss Prevention Installation Guide*.

- 7 After receiving the *Connected* message, at the `SQL>` command prompt, to stop all of the Oracle services, enter:

```
shutdown immediate
```

See [“Performing a cold backup of the Oracle database on Linux”](#) on page 129.

Copying the database files to the backup location on Linux

The database files that should be backed up include the files in the `/Recovery_Aid` directory and the database password file.

To copy the database files to the backup location

- 1 Make sure that the Oracle services are stopped.

If the Oracle services are not stopped, the backup files may be corrupt and unusable.

See [“Shutting down the Symantec Data Loss Prevention system on Linux”](#) on page 133.

- 2 On the computer that hosts the database, copy the directories (and their contents) using the list of directories that you collected previously (See [“Collecting a list of files to be backed up”](#) on page 132.) to the `/opt/Backup_Files/Database` directory of the computer that hosts the backup files.

Note: If you are performing this backup as part of a complete backup of a Symantec Data Loss Prevention deployment, the file path and the name of the computer that hosts the backup files should have been recorded in the Recovery Information Worksheet for reference. Otherwise, create a backup location on a computer that is accessible from the Oracle host.

- 3 On the computer that hosts the database, copy the `$ORACLE_HOME/dbs/orapwprotect` file into the `/opt/Backup_Files/Database` directory of the computer that hosts the backup files.

The file path and the name of the computer that hosts the backup files should have been recorded in the Recovery Information Worksheet for reference.

See [“Performing a cold backup of the Oracle database on Linux”](#) on page 129.

Restarting the system on Linux

To restart the system

- 1 On the computer that hosts the database, log on as the oracle user.
- 2 To open Oracle SQL*Plus, enter:

```
sqlplus /nolog
```

- 3** At the `SQL>` command prompt, to connect as the `sysdba` user, enter:

```
connect sys/password@protect as sysdba
```

where *password* is the password created for single-tier and two-tier installations.

Refer to the *Symantec Data Loss Prevention Installation Guide*.

- 4** After you receive the *Connected* message, at the `SQL>` command prompt, start all of the Oracle services. To start all of the Oracle services, enter the following command:

```
startup
```

- 5** On the computer that hosts the database, log on as root.
- 6** In single-tier and two-tier installations, change directory to
`/opt/SymantecDLP/Protect/bin.`
- 7** In single-tier and two-tier installations, before starting other Symantec Data Loss Prevention services, start the Vontu Notifier service.

```
./VontuNotifier.sh start
```

- 8** In single-tier and two-tier installations, start the remaining Symantec Data Loss Prevention services.

```
./VontuManager.sh start (on the computers that also host the Enforce Server)
```

```
./VontuMonitor.sh start (on the computers that also host a detection server)
```

```
./VontuIncidentPersister.sh start (on the computers that also host the Enforce Server)
```

```
./VontuUpdate.sh start
```

```
./VontuMonitorController.sh start (on the computers that also host the Enforce Server)
```

Services can be started by changing to the `etc` directory and running the following command:

```
.init.d/VontuServiceName start
```

Services can be stopped by changing to the `etc` directory and running the following command:

```
.init.d/VontuServiceName stop.
```

See [“Performing a cold backup of the Oracle database on Linux”](#) on page 129.

Oracle hot backups on Linux platforms

If you are an experienced Oracle database administrator accustomed to managing enterprise-level Oracle installation, you may choose to perform hot backups. If you perform a hot backup, you should run the Oracle database in archive log mode. However, keep in mind that Symantec does not support hot backup procedures and may not be able to provide assistance.

See [“Performing a cold backup of the Oracle database on Linux”](#) on page 129.

About recovering the database on Linux

Based on the type of database failure you experienced, choose the appropriate database recovery procedure:

- If the previous database can no longer be used, create a new database.
- If the database malfunctioned due to a system failure or user error, restore the previously existing database. For example, if an important file was accidentally deleted, you can restore the database to a point in time when the important file still existed.

See [“Restoring an existing database on Linux”](#) on page 136.

Restoring an existing database on Linux

To recover the database by restoring the existing database

- 1 Make sure that the database environment is healthy. Check the existing database, the database server that hosts the existing database, and the computer that hosts the database server.
- 2 On the computer that hosts the database, log on as root.
- 3 In single-tier and two-tier installations, change directory to
`/opt/SymantecDLP/Protect/bin.`

- 4** To stop all running Symantec Data Loss Prevention services, enter:

```
./VontuUpdate.sh stop
./VontuIncidentPersister.sh stop (on the computers that also host the
Enforce Server)
./VontuManager.sh stop (on the computers that also host the Enforce Server)
./VontuMonitor.sh stop (on the computers that also host a detection server)
./VontuMonitorController.sh stop (on the computers that also host the
Enforce Server)
./VontuNotifier.sh stop (on the computers that also host the Enforce
Server)
```

Services can be stopped by changing to the `etc` directory and running the following command:

```
.init.d/VontuServiceName stop
```

Services can be started by changing to the `etc` directory and running the following command:

```
.init.d/VontuServiceName start
```

- 5** On the computer that hosts the database, log on as the oracle user.

To open Oracle SQL*Plus, enter:

```
sqlplus /nolog
```

At the `SQL>` command prompt, to connect as the `sysdba` user, enter:

```
connect sys/password@protect as sysdba
```

where *password* is the password created for single-tier and two-tier installations.

See the *Symantec Data Loss Prevention Installation Guide*.

- 6** After receiving the "Connected" message, at the `SQL>` command prompt, stop all of the Oracle services by entering:

```
shutdown immediate
```

- 7** To exit Oracle SQL*Plus, enter:

```
exit
```

- 8 Copy the contents of the `Backup_Files/Database` directory to the `opt/oracle/oradata/protect` directory on the computer that hosts the new database. The file path and the name of the computer that hosts the backup files should have been recorded in the Recovery Information Worksheet for reference.

- 9 To open Oracle SQL*Plus, enter:

```
sqlplus /nolog
```

- 10 At the `SQL>` command prompt, to connect as the sysdba user, enter:

```
connect sys/password@protect as sysdba
```

where *password* is the password created for single- and two-tier installations.

See the *SSymantec Data Loss Prevention Installation Guide*.

- 11 At the `SQL>` prompt, enter:

```
startup
```

Migrating from a 32-bit Oracle 10g to 64-bit Oracle 11g database

This chapter includes the following topics:

- [About migrating Oracle from a 32-bit to 64-bit Oracle database](#)
- [Migrating from Oracle 10g 32-bit to Oracle 11g 64-bit](#)
- [Migrating 32-bit Oracle database files](#)

About migrating Oracle from a 32-bit to 64-bit Oracle database

Migrating from Oracle 10g (32-bit) to Oracle 11g (64-bit) requires that you use two separate server computers during the migration process. You begin using the existing 32-bit server computer, where you install a 32-bit version of Oracle 11g and upgrade the Oracle 10g database files. On the 64-bit server computer, you install Oracle 11g without creating a dedicated Symantec Data Loss Prevention database. The migration process is completed by copying the upgraded database files from the 32-bit computer to the correct locations on the 64-bit computer.

See [“Migrating from Oracle 10g 32-bit to Oracle 11g 64-bit”](#) on page 140.

Oracle migration is frequently performed as part of a larger process to migrate the Enforce Server to a new computer. If you are migrating the Enforce Server from a 32-bit computer to a 64-bit computer, also refer to the *Symantec Data Loss Prevention System Administration Guide* for additional steps that you must perform to migrate Enforce Server configuration data.

Note: If you also want to upgrade your Oracle software to version 11.2.0.3, first perform the upgrade procedure on the 32-bit computer (see the appropriate section for your current Oracle version in this guide) , then perform the migration procedure as described in this section.

Migrating from Oracle 10g 32-bit to Oracle 11g 64-bit

The instructions for migrating the Oracle database from a 32-bit server computer to a 64-bit server computer apply to both Windows and Linux systems. During the migration process, you use many of the same instructions that are provided earlier in this document. For example, you use earlier instructions to perform the database upgrade on the 32-bit server computer. The migration instructions direct you to the correct procedures.

Note: If you also want to upgrade your Oracle software to version 11.2.0.3, first perform the upgrade procedure on the 32-bit computer, then perform the migration procedure as described in this section.

Table 11-1 Migrating from Oracle 10g 32-bit to Oracle 11g 64-bit

Step	Action	Description
Step 1	Upgrade Oracle 10g to Oracle 11g on the 32-bit server computer.	<p>On the same 32-bit server computer that hosts your Oracle 10g installation, install Oracle 11g and upgrade the Oracle 10g database.</p> <p>Make sure that you install Oracle 11g in its own, dedicated Oracle home directory. Accepting the default Oracle 11g installation location creates an Oracle home directory that is separate from the home directory that was used with Oracle 10g.</p> <p>For more information, follow the procedures in this book for your platform and Oracle version to upgrade to Oracle version 11.2.0.3</p>

Table 11-1 Migrating from Oracle 10g 32-bit to Oracle 11g 64-bit (*continued*)

Step	Action	Description
Step 2	Install Oracle 11g on the 64-bit server computer.	<p>On the 64-bit server computer, install Oracle 11g without creating a database. Follow the instructions in this guide for installing Oracle 11g on your platform, but do not perform the step to create the Symantec Data Loss Prevention database.</p> <p>See “Installing the Oracle 11g software for Windows” on page 15.</p> <p>See “Installing the Oracle 11g software for Linux” on page 78.</p> <p>If you already installed Oracle 11g with a database on the 64-bit server computer, use the Oracle Database Configuration Assistant to remove the database.</p>
Step 3	Create the TNS listener on the 64-bit server computer.	<p>See “Creating the TNS Listener on Windows” on page 19.</p> <p>See “Creating the TNS Listener on Linux” on page 84.</p>
Step 4	Migrate 32-bit database files to the 64-bit server computer.	<p>On the 32-bit server computer, generate an Oracle 11g <code>pfile</code> from the <code>spfile</code>. Then copy all Oracle 11g database files from their locations on the 32-bit server computer to the same locations on the 64-bit server computer.</p> <p>See “Migrating 32-bit Oracle database files” on page 142.</p>
Step 5	Install the Oracle Critical Patch Update (CPU) on the 64-bit server computer.	<p>The latest <i>Oracle 11g Release 2 Critical Patch Update Guide</i> explains how to download and apply the latest CPU for Oracle.</p>

Migrating 32-bit Oracle database files

Follow one of the following procedures (Linux or Windows) to migrate the necessary Oracle database files from a 32-bit Oracle 11g installation to a 64-bit Oracle 11g installation:

- See [“Migrating 32-bit Oracle database files \(Windows\)”](#) on page 142.
- See [“Migrating 32-bit Oracle database files \(Linux\)”](#) on page 145.

Migrating 32-bit Oracle database files (Windows)

- 1 On the 32-bit server computer, open a command prompt and start SQL*Plus:

```
sqlplus /nolog
```

- 2 Log on as the SYS user:

```
SQL> connect sys/password as sysdba
```

Where *password* represents the SYS password.

- 3 Create a list of directories for migration by running the following command in SQL*Plus:

```
SELECT SUBSTR(file_name, 1, INSTR(file_name, '\', -1, 1) - 1)  
directory FROM dba_data_files;
```

- 4 Determine the directory for creating a new pfile by running the following command in SQL*Plus:

```
SELECT SUBSTR(value, 1, INSTR(value, '\', -1, 1) - 1) directory  
FROM v$parameter WHERE name = 'spfile';
```

- 5 Create a pfile from the spfile by running the following commands:

```
SQL> create pfile='<path>\init.ora' from spfile;
```

Where *<path>* is the path returned by the command you ran in step 4.

- 6 Stop the Oracle service before copying the files. For more information on stopping and starting Windows services see your Microsoft Windows documentation.

- Copy the Oracle database files from the 32-bit server computer to the 64-bit server computer. Always ensure that you copy the files to the same directory location on the 64-bit server destination. If the directories do not exist on the destination server, create them.

Copy the following files and directories to the corresponding directory on the 64-bit server computer.

Location	Description
<p><code><path></code></p> <p>Where <code><path></code> is the path returned by the command you ran in step 3.</p>	Copy the contents of all directories returned by the command you ran in step 3 to migrate database, log, and control files.
<p><code>%ORACLE_HOME%\database\PWDprotect.ora</code></p>	Copy the remote password file.
<p><code><path></code></p> <p>Where <code><path></code> is the path returned by the command you ran in step 4.</p>	Copy the directory and <code>pfile</code> returned by the command you ran in step 4 .
<p><code>flash_recovery_area*</code></p>	If you configured disk-based backup and recovery for Oracle, copy the complete contents of the <code>flash_recovery_area\</code> directory.

- If 64-bit server computer uses a different directory structure for the Oracle installation, you must manually edit the `init.ora` file that your created to specify the correct location for directories on the 64-bit server computer.

For example, if the 32-bit Oracle software was installed on the `c:\` drive and the 64-bit Oracle software was installed on the `d:\` drive, edit

`c:\oracle\product\11.2.0\db_1\admin\protect\pfile\init.ora` and change all drive references from `c:\` to `d:\`.

- On the 64-bit server computer, open a command prompt and set the `ORACLE_HOME` and `ORACLE_SID` environment variables. For example:

```
set ORACLE_HOME=c:\oracle\product\11.2.0\db_1
set ORACLE_SID=protect
```

- If you did not re-create the TNS listener on the 64-bit server computer, you must do so now.

See [“Creating the TNS Listener on Windows”](#) on page 19.

- 11** Create a new Oracle service from the `pfile` that you migrated from the 32-bit system. Open a command prompt and run the following commands:

```
cd %ORACLE_HOME%\database  
oradim -new -sid protect -startmode auto -pfile init.ora
```

- 12** Start SQL*Plus and generate a `spfile` by running the following commands:

```
sqlplus /nolog  
SQL> connect / as sysdba  
SQL> create spfile from pfile= 'init.ora';
```

- 13** Shut down the database and start it in upgrade mode by running the following commands:

```
SQL> shutdown immediate  
SQL> startup upgrade
```

- 14** Run the following script:

```
SQL> @?\rdbms\admin\utlirp.sql
```

- 15** Configure the Oracle system memory for the 64-bit Oracle Database by running the following commands:

```
SQL> alter system set memory_max_target = 3072m scope=spfile;  
SQL> alter system set memory_target = 3072m scope=spfile;
```

- 16** Restart the database by running the following commands:

```
SQL> shutdown immediate  
SQL> startup
```

- 17** Run the following script:

```
SQL> @?\rdbms\admin\utlirp.sql
```

- 18** Back up the database. For more information, see the *Symantec Data Loss Prevention System Maintenance Guide*.

Migrating 32-bit Oracle database files (Linux)

- 1 On the 32-bit server computer, open a command prompt and start SQL*Plus:

```
sqlplus /nolog
```

- 2 Log on as the SYS user:

```
SQL> connect sys/password as sysdba
```

Where *password* represents the SYS password.

- 3 Create a list of directories for migration by running the following command in SQL*Plus:

```
SELECT SUBSTR(file_name, 1, INSTR(file_name, '/', -1, 1) - 1)
       directory FROM dba_data_files;
```

- 4 Determine the directory for creating a new pfile by running the following command in SQL*Plus:

```
SELECT SUBSTR(value, 1, INSTR(value, '/', -1, 1) - 1)
       directory FROM v$parameter WHERE name = 'spfile';
```

- 5 Create a pfile from the spfile.

```
SQL> create pfile='<path>/init.ora'
       from spfile;
```

Where *<path>* is the path returned by the command you ran in step 4.

- 6 Shut down the Oracle database before copying the files:

```
SQL> shutdown immediate
```

- 7 Exit SQL*Plus:

```
SQL> exit
```

- 8 Copy the Oracle database files from the 32-bit server computer to the 64-bit server computer. Always ensure that you copy the files to the same directory location on the 64-bit server destination. If the directories do not exist on the destination server, create them.

Copy the following files and directories to the corresponding directories on the 64-bit server computer:

Location	Description
<code><path></code> Where <code><path></code> is the path returned by the command you ran in step 3.	Copy the contents of all directories returned by the command you ran in step 3 to migrate database, log, and control files.
<code>\$ORACLE_HOME/dbs/orapwprotect</code>	Copy the remote password file.
<code><path></code> Where <code><path></code> is the path returned by the command you ran in step 4.	Copy the directory and <code>pfile</code> returned by the command you ran in step 4.
<code>flash_recovery_area/*</code>	If you configured disk-based backup and recovery for Oracle, copy the complete contents of the <code>flash_recovery_area/</code> directory.

Make sure that the copied files have the same permissions as the source files, and that they are owned by the same “oracle” user and “oinstall” group as the source files.

Use text editor to open the `init.ora` file that you created and copied from the 32-bit system in step 5. Make sure the directories specified by the following parameters are present on your 64-bit system. Create any missing directories and make sure that these directories have the same permissions as the source files. Also make sure that the files are owned by the same “oracle” user and “oinstall” group as the source files.

- `audit_file_dest`
- `core_dump_dest`
- `diagnostic_test`

- 9 If the 64-bit server computer uses a different directory structure for the Oracle installation, you must manually edit the `init.ora` file that your created to specify the correct location for directories on the 64-bit server computer.
- 10 On the 64-bit server computer, open a command prompt or terminal window and set the `ORACLE_HOME` and `ORACLE_SID` environment variables using the following commands:

```
export ORACLE_HOME=/opt/oracle/product/11.2.0/db_1
export ORACLE_SID=protect
```

- 11 Export the `PATH` environmment variable using the following command:

```
export PATH=$PATH:$ORACLE_HOME/bin
```

- 12** If you did not re-create the TNS listener on the 64-bit server computer, you must do so now.

See [“Creating the TNS Listener on Linux”](#) on page 84.

- 13** Create an Oracle instance from the migrated database files by running the following commands:

```
cd <ORACLE_HOME>/dbs
sqlplus /nolog
SQL> connect / as sysdba
```

- 14** Start the 64-bit Oracle database by running the following command:

```
SQL> startup upgrade pfile=init.ora
```

- 15** Run the following command to invalidate all of the PL/SQL modules:

```
SQL> @?/rdbms/admin/utlirp.sql
```

- 16** Restart the 64-bit Oracle Database by running the following commands:

```
SQL> shutdown immediate;
SQL> startup pfile=init.ora
```

- 17** Revalidate the existing PL/SQL modules to make sure that they are in the format required by the 64-bit Oracle Database by running the following command:

```
SQL> @?/rdbms/admin/utlirp.sql
```

- 18** Create an spfile and restart the Oracle Database using the spfile by running the following commands:

```
SQL> create spfile from pfile= 'init.ora';
SQL> shutdown immediate;
SQL> startup
```

- 19** Configure the Oracle system memory for the 64-bit database by running the following commands:

```
SQL> alter system set memory_max_target = 3072m scope=spfile;
SQL> alter system set memory_target = 3072m scope=spfile;
```

20 Restart the database by running the following commands:

```
SQL> shutdown immediate  
SQL> startup
```

21 Back up the database. For more information, see the *Symantec Data Loss Prevention System Maintenance Guide*.

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