## Contents

**Preface** ..................................................................................................................................................... v

### Part I  Oracle Database Vault Installation

#### 1  Oracle Database Vault Installation Overview

- Database Vault Installation Environment .................................................................................................. 1-1
- **Database Vault Accounts** .................................................................................................................... 1-1
  - Database Vault Owner .......................................................................................................................... 1-1
  - Database Vault Account Manager ......................................................................................................... 1-2
- **Default Audit Policy and Initialization Parameters** ............................................................................. 1-2
- **Installation Considerations** ................................................................................................................ 1-2
  - Hardware and Software Certification ..................................................................................................... 1-2
  - Multiple Oracle Homes ......................................................................................................................... 1-3

#### 2  Installing Oracle Database Vault as an Option

- **Preinstallation and Installation Tasks** .................................................................................................... 2-1
  - Become Familiar with the Features of Oracle Database Vault ............................................................. 2-2
  - **Check the Hardware Requirements** .................................................................................................... 2-2
    - Hardware Component Requirements ............................................................................................... 2-2
    - Hard Disk Space Requirements ......................................................................................................... 2-2
    - Verifying Hardware Requirements .................................................................................................... 2-3
  - **Check the Software Requirements** .................................................................................................... 2-3
    - Oracle Database Hardware and Software Certification ........................................................................ 2-5
    - Windows Telnet Services Support .................................................................................................... 2-5
    - Windows Terminal Services and Remote Desktop Support .............................................................. 2-5
    - Windows Support ............................................................................................................................... 2-6
    - Web Browser Support ....................................................................................................................... 2-7
  - **Check the Database Requirements** ...................................................................................................... 2-7
    - Install Oracle Enterprise Manager Console DB ................................................................................. 2-7
    - Apply Oracle Database Release 10.2.0.3 Patch Set ........................................................................... 2-8
  - **Prepare a Backup Strategy** ................................................................................................................ 2-8
  - **Verify That Oracle Clusterware Is Running (RAC Only)** ................................................................ 2-9
  - **Stop Existing Oracle Processes** ......................................................................................................... 2-9
    - Stop the Enterprise Manager Database Control Process .................................................................. 2-9
    - Stop the iSQL*Plus Process ............................................................................................................... 2-9
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shut Down All Database Instances</td>
<td>2-9</td>
</tr>
<tr>
<td>Stop Existing Listeners</td>
<td>2-10</td>
</tr>
<tr>
<td>Stop Oracle Services</td>
<td>2-10</td>
</tr>
<tr>
<td>Run Oracle Universal Installer to Install</td>
<td>2-10</td>
</tr>
<tr>
<td><strong>Installing a Loopback Adapter</strong></td>
<td>2-12</td>
</tr>
<tr>
<td>Checking if a Loopback Adapter Is Installed on Your Computer</td>
<td>2-13</td>
</tr>
<tr>
<td>Installing a Loopback Adapter on Windows 2000</td>
<td>2-13</td>
</tr>
<tr>
<td>Installing a Loopback Adapter on Windows 2003 or Windows XP</td>
<td>2-15</td>
</tr>
<tr>
<td>Removing a Loopback Adapter</td>
<td>2-16</td>
</tr>
<tr>
<td><strong>Postinstallation Tasks</strong></td>
<td>2-16</td>
</tr>
<tr>
<td>Back Up the Database</td>
<td>2-16</td>
</tr>
<tr>
<td>Change Passwords for Oracle-Supplied Accounts</td>
<td>2-17</td>
</tr>
<tr>
<td>Using SQL*Plus to Unlock Accounts and Reset Passwords</td>
<td>2-17</td>
</tr>
<tr>
<td>Enable or Disable Connections with the SYSDBA Privilege</td>
<td>2-17</td>
</tr>
<tr>
<td>Start the Listener and Database on Other Nodes (RAC Only)</td>
<td>2-18</td>
</tr>
<tr>
<td>Run DVCA to Set Instance Parameters and Lock Out SYSDBA Sessions (RAC Only)</td>
<td>2-18</td>
</tr>
<tr>
<td>Restart Enterprise Manager Database Control</td>
<td>2-20</td>
</tr>
<tr>
<td><strong>Removing Oracle Software</strong></td>
<td>2-20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part II Appendixes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong> How to Stop Processes in an Existing Oracle Real Application Clusters Database</td>
</tr>
<tr>
<td><strong>B</strong> Running DVCA After Creating a Database Vault Database</td>
</tr>
<tr>
<td><strong>C</strong> Database Listener Security Recommendations</td>
</tr>
<tr>
<td>Security Checklist for the Database Listener</td>
</tr>
<tr>
<td><strong>D</strong> Initialization Parameters</td>
</tr>
<tr>
<td><strong>E</strong> Using Response Files</td>
</tr>
<tr>
<td>How Response Files Work</td>
</tr>
<tr>
<td>General Procedure for Using Response Files</td>
</tr>
<tr>
<td>Installing Database Vault Using a Response File</td>
</tr>
<tr>
<td>Prepare the Response File</td>
</tr>
<tr>
<td>Run Oracle Universal Installer Using the Response File</td>
</tr>
<tr>
<td>Troubleshooting Silent Mode Installation</td>
</tr>
<tr>
<td><strong>F</strong> Enabling Oracle Database Vault Administrator Accessibility</td>
</tr>
<tr>
<td>Enabling Oracle Database Vault Administrator Accessibility Mode</td>
</tr>
<tr>
<td>Providing Textual Descriptions of Database Vault Administrator Charts</td>
</tr>
</tbody>
</table>

**Index**
Preface

The Oracle Database Vault Installation Guide explains how to prepare for, install, and configure Oracle Database Vault with specific instructions for the operating system and Oracle software technology components that Database Vault requires.

Audience

This document is intended for Oracle DBAs as well as System Administrators who are involved in the installation of Oracle Database Vault and its related components.

Documentation Accessibility

Our goal is to make Oracle products, services, and supporting documentation accessible, with good usability, to the disabled community. To that end, our documentation includes features that make information available to users of assistive technology. This documentation is available in HTML format, and contains markup to facilitate access by the disabled community. Accessibility standards will continue to evolve over time, and Oracle is actively engaged with other market-leading technology vendors to address technical obstacles so that our documentation can be accessible to all of our customers. For more information, visit the Oracle Accessibility Program Web site at

http://www.oracle.com/accessibility/

Accessibility of Code Examples in Documentation

Screen readers may not always correctly read the code examples in this document. The conventions for writing code require that closing braces should appear on an otherwise empty line; however, some screen readers may not always read a line of text that consists solely of a bracket or brace.

Accessibility of Links to External Web Sites in Documentation

This documentation may contain links to Web sites of other companies or organizations that Oracle does not own or control. Oracle neither evaluates nor makes any representations regarding the accessibility of these Web sites.

TTY Access to Oracle Support Services

Oracle provides dedicated Text Telephone (TTY) access to Oracle Support Services within the United States of America 24 hours a day, seven days a week. For TTY support, call 800.446.2398.
Related Documents

For more information, refer to the following documents:

- Oracle Database Vault Release Notes for Microsoft Windows (64-Bit) on Intel Itanium
- Oracle Database Vault Administrator’s Guide
- Oracle Database Installation Guide
- Oracle Database Oracle Clusterware and Oracle Real Application Clusters Installation Guide for Microsoft Windows
- Oracle Database Oracle Clusterware and Oracle Real Application Clusters Administration and Deployment Guide

Conventions

The following text conventions are used in this document:

<table>
<thead>
<tr>
<th>Convention</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>boldface</strong></td>
<td>Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.</td>
</tr>
<tr>
<td><em>italic</em></td>
<td>Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.</td>
</tr>
<tr>
<td><code>monospace</code></td>
<td>Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.</td>
</tr>
</tbody>
</table>
Part I
Oracle Database Vault Installation

Part I introduces you to Oracle Database Vault installation concepts, requirements, and steps. This part contains the following chapters:

- Chapter 1, "Oracle Database Vault Installation Overview"
- Chapter 2, "Installing Oracle Database Vault as an Option"
Oracle Database Vault enables you to secure business data in ways that were not possible before. Database Vault uses a multifactored and multilayered approach to implementing database security.

This chapter provides an overview of the Database Vault installation process. This chapter includes the following sections:

- Database Vault Installation Environment
- Database Vault Accounts
- Installation Considerations

Database Vault Installation Environment

Oracle Database Vault can be installed as an option to the following:

- Oracle Database 10g Release 2 (10.2.0.3) standalone installation
- Oracle Database 10g Release 2 (10.2.0.3) with Oracle Real Application Clusters (RAC)

Database Vault Accounts

Database Vault prompts for two accounts that you can create during installation. These are the Database Vault Owner and the Database Vault Account Manager accounts. You must supply an account name and password for the Database Vault Owner during installation. Creating a Database Vault Account Manager is optional.

Database Vault Owner

The Database Vault Owner account is granted the `DV_OWNER` role. This account can manage Database Vault roles and configuration.

The Database Vault Owner user name can be a minimum of 2, and a maximum of 30 characters long. The account password can be a minimum of 8, and a maximum of 30 characters.

The password that you choose for the Database Vault Owner account must be a secure one. The following password restrictions are enforced:

- The password must include at least one alphabet, one digit, and one nonalphanumeric character (symbol).
- The password cannot be the same as the account name.
The password cannot contain any consecutive repeating characters.

Database Vault Account Manager

The Database Vault Account Manager is granted the DV_ACCTMGR role. This account is used to manage database user accounts. The Database Vault Account Manager is created to facilitate separation of duties. If you do not opt to create the Database Vault Account Manager account, then the DV_ACCTMGR role is granted to the Database Vault Owner account by default.

The Database Vault Account Manager user name can be a minimum of 2, and a maximum of 30 characters long. The account password can be a minimum of 8, and a maximum of 30 characters.

The same password restrictions that apply to Database Vault Owner are applicable to Database Vault Account Manager as well.

Default Audit Policy and Initialization Parameters

Oracle Database Vault installs a baseline database auditing policy. This policy covers the access control configuration information stored in Database Vault database tables, information stored in Oracle Catalog (rollback segments, tablespaces, and so on), the use of system privileges, and Oracle Label Security configuration.

See Also: Oracle Database Vault Administrator’s Guide for more information on the database audit policy

When you install Oracle Database Vault, the security specific database initialization parameters are initialized with default values. These security specific initialization parameters are listed in Appendix D

Installation Considerations

This section contains information that you should consider before deciding how to install this product. It contains the following sections:

- Hardware and Software Certification
- Multiple Oracle Homes

Hardware and Software Certification

The platform-specific hardware and software requirements included in this installation guide were current at the time this guide was published. However, because new platforms and operating system software versions might be certified after this guide is published, review the certification matrix on the Oracle MetaLink Web site for the most up-to-date list of certified hardware platforms and operating system versions. The Oracle MetaLink Web site is available at the following URL:

http://metalink.oracle.com

If you do not have a current Oracle Support Services contract, then you can access the same information at the following Web site:

http://www.oracle.com/technology/support/metalink/content.html
Multiple Oracle Homes

This product supports multiple Oracle homes. This means that you can install this release or previous releases of the software more than once on the same system, in different Oracle home directories.
Installing Oracle Database Vault as an Option

This chapter includes an overview of the major steps required to install Oracle Database Vault into an existing Oracle Database 10g release 2 (10.2.0.3) database. These procedures transform an existing Oracle Database system (including associated applications) into an Oracle Database Vault system. Databases upgraded using the procedures described in this chapter can work almost in the same manner as in earlier releases and, optionally, can leverage new Oracle Database Vault functionality. For a list of changes that Database Vault makes, refer to Appendix D, "Initialization Parameters" and the Oracle Database Vault Administrator’s Guide.

Note: In order to upgrade a pre-10g release 2 Oracle Database to Oracle Database Vault, you first need to upgrade the database to a 10g release 2 (10.2.0.3) database.

See Also: Oracle Database Upgrade Guide, 10g Release2 (10.2) for information about upgrading your Oracle Database to Oracle Database 10g release 2.

This chapter covers the following topics:

- Preinstallation and Installation Tasks
- Installing a Loopback Adapter
- Postinstallation Tasks
- Removing Oracle Software

Preinstallation and Installation Tasks

This section covers the following topics:

- Become Familiar with the Features of Oracle Database Vault
- Check the Hardware Requirements
- Check the Software Requirements
- Oracle Database Hardware and Software Certification
- Check the Database Requirements
- Prepare a Backup Strategy
- Verify That Oracle Clusterware Is Running (RAC Only)
- Stop Existing Oracle Processes
Run Oracle Universal Installer to Install

Become Familiar with the Features of Oracle Database Vault

Before you plan the upgrade process, become familiar with the features of Oracle Database Vault. The Oracle Database Vault Administrator’s Guide discusses the basic features of Oracle Database Vault.

Check the Hardware Requirements

This section describes hardware component and hard disk space requirements.

- Hardware Component Requirements
- Hard Disk Space Requirements
- Verifying Hardware Requirements

Hardware Component Requirements

Table 2–1 discusses the hardware requirements for Oracle Database Vault:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical memory (RAM)</td>
<td>1 GB minimum, 4 GB recommended</td>
</tr>
<tr>
<td>Virtual memory</td>
<td>Double the amount of RAM</td>
</tr>
<tr>
<td>Disk space</td>
<td>Total: 4.77 GB</td>
</tr>
<tr>
<td></td>
<td>See Table 2–2 for details.</td>
</tr>
<tr>
<td>Video adapter</td>
<td>256 colors</td>
</tr>
<tr>
<td>Processor</td>
<td>Intel Itanium 2 or later</td>
</tr>
</tbody>
</table>

Hard Disk Space Requirements

This section lists system requirements for Windows platforms that use the NT File System (NTFS) file systems. Oracle recommends installing Oracle components on NTFS.

The NTFS system requirements listed in this section are more accurate than the hard disk values reported by the Oracle Universal Installer Summary window. The Summary window does not include accurate values for disk space, the space required to create a database, or the size of compressed files that are expanded on the hard drive.

The hard disk requirements for Oracle Database components include 32 MB required to install Java Runtime Environment (JRE) and Oracle Universal Installer on the partition where the operating system is installed. If sufficient space is not detected, installation fails and an error message appears.
## Preinstallation and Installation Tasks

### Installing Oracle Database Vault as an Option

* Refers to the contents of the admin, flash_recovery_area, and oradata directories in the ORACLE_BASE directory.

** This size can be higher depending on the installation options selected, such as languages or additional components. If you choose to install Oracle Database with automated backups enabled, include at least 2 GB extra for data file disk space.

### Verifying Hardware Requirements

To ensure that the system meets these requirements, follow these steps:

1. Determine the physical RAM size. For a computer using Windows 2003, for example, double-click System in the Windows Control Panel and click the General tab. If the size of the physical RAM installed in the system is less than the required size, then you must install more memory before continuing.

2. Determine the size of the configured virtual memory (also known as paging file size). For a computer using Windows 2003, for example, double-click System in the Control Panel, click the Advanced tab, and click Settings in the Performance section. Then click the Advanced tab. The virtual memory is listed in the Virtual Memory section.

   If necessary, see your operating system documentation for information about how to configure additional virtual memory.

3. Determine the amount of free disk space on the system. For a computer using Windows 2003, for example, double-click My Computer, right-click the drive where the Oracle software is to be installed, and select Properties.

4. Determine the amount of disk space available in the temp directory. This is equivalent to the total amount of free disk space, minus what will be needed for the Oracle software to be installed.

### Check the Software Requirements

Oracle Database Vault is installed in an existing Oracle home. All software requirements that were met while installing Oracle Database 10g release 2 are sufficient for Oracle Database Vault.

*See Also:* Oracle Database Installation Guide for Microsoft Windows (64-Bit) on Intel Itanium for detailed information on the software requirements for installing Oracle Database

Table 2–3 lists the software requirements for Oracle Database Vault.
### Table 2–3  Software Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Architecture</td>
<td>Processor: Intel Itanium 2 or later</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Oracle provides 32-bit (x86), 64-bit (Itanium), and 64-bit (x64) versions of Oracle Database for Microsoft Windows. The 64-bit (Itanium) database version, which this installation guide describes, runs on the 64-bit version of Windows on Itanium hardware. For additional information, visit Oracle MetaLink at: <a href="http://metalink.oracle.com">http://metalink.oracle.com</a></td>
</tr>
<tr>
<td>Operating System</td>
<td>Oracle Database for 64-bit Windows is supported on the following operating systems:</td>
</tr>
<tr>
<td></td>
<td>- Windows Server 2003 Datacenter Edition for 64-bit Itanium 2 Systems</td>
</tr>
<tr>
<td></td>
<td>- Windows Server 2003 Enterprise Edition for 64-bit Itanium 2 Systems</td>
</tr>
<tr>
<td></td>
<td>Windows Multilingual User Interface Pack is supported on Windows 2003.</td>
</tr>
<tr>
<td></td>
<td>Windows XP is not supported.</td>
</tr>
<tr>
<td>Compiler</td>
<td>The following components are supported with the Windows 2003 Microsoft Platform SDK or later compiler and Intel compiler versions 7.1 and 8.1:</td>
</tr>
<tr>
<td></td>
<td>- Oracle C++ Call Interface</td>
</tr>
<tr>
<td></td>
<td>- Oracle Call Interface</td>
</tr>
<tr>
<td></td>
<td>- External callouts</td>
</tr>
<tr>
<td></td>
<td>- PL/SQL native compilation</td>
</tr>
<tr>
<td></td>
<td>- Pro*C</td>
</tr>
<tr>
<td></td>
<td>- XDK</td>
</tr>
<tr>
<td></td>
<td>GNU Compiler Collection (GCC), Object Oriented COBOL (OOCOBOL) specifications, and Pro*COBOL are not supported.</td>
</tr>
<tr>
<td>Network Protocol</td>
<td>The Oracle Net foundation layer uses Oracle protocol support to communicate with the following industry-standard network protocols:</td>
</tr>
<tr>
<td></td>
<td>- TCP/IP</td>
</tr>
<tr>
<td></td>
<td>- TCP/IP with SSL</td>
</tr>
<tr>
<td></td>
<td>- Named Pipes</td>
</tr>
</tbody>
</table>
Oracle Database Hardware and Software Certification

The platform-specific hardware and software requirements included in this installation guide were current at the time this guide was published. However, because new platforms and operating system software versions might be certified after this guide is published, review the certification matrix on the Oracle MetaLink Web site for the most up-to-date list of certified hardware platforms and operating system versions. This Web site also provides compatible client and database versions, patches, and workaround information for bugs. The Oracle MetaLink Web site is available at:

http://metalink.oracle.com/

You must register online before using Oracle MetaLink. After logging in, click Certify & Availability from the left-hand column. From the Product Lifecycle page, click the Certifications button. Other Product Lifecycle options include Product Availability, Desupport Notices, and Alerts.

The following sections provide certification information:

- Windows Telnet Services Support
- Windows Terminal Services and Remote Desktop Support
- Windows Support
- Web Browser Support

Windows Telnet Services Support

Note: Ensure that the Telnet service is started on the Windows Services utility.

Windows Terminal Services and Remote Desktop Support

Oracle supports Terminal Services on Windows 2003. Oracle does not support the installation of Oracle components from a remote Terminal Services Client on to a 64-bit Windows server that is running a Terminal Server service. Start all configuration tools
from the Terminal Server console (using mstsc/console) and not from the Terminal Services Client.

You can configure Windows 2003 to use Terminal Services in Remote Desktop for Administration Mode or Terminal Server Mode.

See Also:

- The Microsoft Web site for more information about terminal services
- The OracleMetaLink Web site for the latest Terminal Server certification information

Windows Support

The following components are not supported:

- GNU Compiler Collection (GCC)
- Oracle Database Extensions for .NET
- Oracle Procedural Gateway
- Oracle Transparent Gateway
- Business Components for Java (BC4J)
- DCE and CyberSafe Adapter Support
- Entrust PKI Support
- Generic Connectivity
- Java Server Pages
- nCipher Accelerator Support
- Oracle Data Provider for .NET
- Oracle Enterprise Manager Grid Control CD
  A 64-bit Windows version of Oracle Enterprise Manager Grid Control is not available in this release.
- Oracle Enterprise Manager Java Console
- Oracle Messaging Gateway
- Oracle Migration Workbench
  You can execute Oracle Migration Workbench from a 32-bit Windows environment to migrate third-party databases, as supported by release 9.2.0.2.1 or later, to an Oracle Database 10g Release 2 (10.2) database installed on a 64-bit Windows computer.
- Oracle Objects for OLE
- Oracle Workflow Builder
- Pro*COBOL
- Oracle Database Extensions for .NET
- Oracle Enterprise Integration Gateways, which include the following:
Preinstallation and Installation Tasks

Installing Oracle Database Vault as an Option

Web Browser Support
Microsoft Internet Explorer 6.0 Web browser is supported.

Check the Database Requirements
In order to install Oracle Database Vault, you must be running the Enterprise Edition of Oracle Database 10g release 2 (10.2.0.3). The database should also have Oracle Enterprise Manager Console DB 10.2.0.3.0 installed.

A listener must have been configured for the existing database. Oracle Net Configuration Assistant configures the listener when you first install the database. You can also use Oracle Enterprise Manager to administer listeners.

You must have an existing password file for the database. The password file authentication parameter, REMOTE_LOGIN_PASSWORDFILE must have been set to EXCLUSIVE or SHARED.

You can set the REMOTE_LOGIN_PASSWORDFILE parameter in the init.ora file. Use the orapwd utility to create and manage password files.

See Also: Oracle Database Administrator’s Guide for more information on creating and maintaining a password file

The following topics discuss applying the 10.2.0.3 patch set and installing the required components:

- Install Oracle Enterprise Manager Console DB
- Apply Oracle Database Release 10.2.0.3 Patch Set

Install Oracle Enterprise Manager Console DB
Before installing Oracle Database Vault, you should ensure that Oracle Enterprise Manager Console DB 10.2.0.3.0 is installed. Oracle Enterprise Manager Console DB is installed using the Oracle Universal Installer (OUI). The following steps summarize installing Oracle Enterprise Manager Console DB:

1. Run Oracle Universal Installer (OUI) and perform a custom installation to install Oracle Enterprise Manager Console DB 10.2.0.1.0. Add Oracle Enterprise Manager Console DB from the list of available product components.

2. Apply the Oracle Database release 10.2.0.3 patch set.

Note: You can configure the database to use Enterprise Manager Database Control by using Database Configuration Assistant (DBCA). However, configuring Enterprise Manager Database Control is not a prerequisite for installing Oracle Database Vault.
Apply Oracle Database Release 10.2.0.3 Patch Set
To install Oracle Database Vault, you need to upgrade the database to Oracle Database release 10.2.0.3. Oracle strongly recommends that you back up your database before performing any upgrade or installation.

See Also: Oracle Database Backup and Recovery User’s Guide for information on database backups

This section covers the following topics:

Patch Set Overview
The patch set is not a complete software distribution. You must install it in an existing Oracle Database 10g release 2 (10.2.0.1 or 10.2.0.2) installation. You can apply the Oracle Database release 10.2.0.3 patch set to the following Oracle Database 10g release 2 installations:

- Oracle Database
- Oracle Real Application Clusters
- Oracle Database Client
- Oracle Database Companion CD
- Oracle Clusterware

Oracle Universal Installer Version Requirements
This patch set includes Oracle Universal Installer release 10.2.0.3, which is also installed when you install this patch set. This is to ensure that your Oracle home can be patched in the future. You should not use the Installer from the earlier maintenance release media or Oracle home.

Patch Set Documentation
There are two documents related to this release of the Oracle Database patch set:

- Oracle Database Patch Set Notes, 10g Release 2 (10.2.0.3) Patch Set 2 for Microsoft Windows (64-Bit) on Intel Itanium
- Oracle Database List of Bugs Fixed, 10g Release 2 (10.2.0.3) Patch Set

Both of these documents are included with the patch set. In addition, they are available on the Oracle Metalink Web site:

http://metalink.oracle.com

Prepare a Backup Strategy
Oracle strongly recommends that you back up your database before performing any upgrade or installation. The ultimate success of your upgrade depends heavily on the design and execution of an appropriate backup strategy. To develop a backup strategy, consider the following questions:

- How long can the production database remain inoperable before business consequences become intolerable?
- What backup strategy should be used to meet your availability requirements?
- Are backups archived in a safe, offsite location?
- How quickly can backups be restored (including backups in offsite storage)?
- Have recovery procedures been tested successfully?

Your backup strategy should answer all of these questions and include procedures for successfully backing up and recovering your database.

**See Also:** *Oracle Database Backup and Recovery User’s Guide* for information on database backups

### Verify That Oracle Clusterware Is Running (RAC Only)

Oracle Clusterware should be running for the Database Vault installer to find the existing Real Application Clusters (RAC) databases. If you have stopped Oracle Clusterware, then you should restart it before running Oracle Universal Installer. Use the following command to start Oracle Clusterware:

C:\> CRS_HOME\bin\crsctl start crs

---

**Note:**

- You need to run the `crsctl start crs` command on all nodes of the cluster.
- The `crsctl start crs` command also starts the database. You will need to shut down the database before running Oracle Universal Installer.

---

### Stop Existing Oracle Processes

Stop all processes running in the Oracle home. You must complete this task to enable Oracle Universal Installer to relink certain executables and libraries. For RAC databases, you need to stop the processes on all nodes.

Stop the processes in the following order:

1. **Stop the Enterprise Manager Database Control Process**
2. **Stop the iSQL*Plus Process**
3. **Shut Down All Database Instances**
4. **Stop Existing Listeners**
5. **Stop Oracle Services**

#### Stop the Enterprise Manager Database Control Process

Stop the Enterprise Manager Database Control process, if it is running. Use the following command:

C:\> ORACLE_HOME\bin\emctl stop dbconsole

#### Stop the iSQL*Plus Process

Stop the iSQL*Plus process, using the following command:

C:\> ORACLE_HOME\bin\isqlplusctl stop

#### Shut Down All Database Instances

Shut down all database instances running from the Oracle home directory into which Oracle Database Vault is to be installed.
sqlplus SYS "AS SYSOPER"
Enter password:
SQL> shutdown immediate

Stop Existing Listeners
Oracle Universal Installer configures and starts a default Oracle Net listener using TCP/IP port 1521. However, if an existing Oracle Net listener process is using the same port or key value, then Oracle Universal Installer can only configure the new listener, it cannot start it. To ensure that the new listener process starts during the installation, you must shut down any existing listeners before starting Oracle Universal Installer.

Use the following command to stop the listener process:

C:\> ORACLE_HOME\bin\lsnrctl stop listenername

Stop Oracle Services
Use the following steps to stop Oracle Database services from the Control Panel:

1. Access your Windows Services dialog.

       See Also: Your operating system documentation for instructions

2. Select OracleHOME_NAME\TNSListener. Click Stop to stop this service. You need to perform this step only if you haven’t shut down the listener process using the lsnrctl command.

3. Select OracleServiceSID and click Stop.

       Note: If you are installing Database Vault for Oracle Real Application Clusters (RAC), then you need to shut down all Oracle processes on all cluster nodes. See Appendix A, "How to Stop Processes in an Existing Oracle Real Application Clusters Database" for more details.

Run Oracle Universal Installer to Install
You can use the graphical user interface (GUI) provided by Oracle Universal Installer to install Oracle Database. The following steps discuss installing Database Vault using Oracle Universal Installer:

1. Log on as a member of the Administrators group.

       If you are installing on a Primary Domain Controller (PDC) or a Backup Domain Controller (BDC), log on as a member of the Domain Administrators group.

2. Insert Oracle Database Vault installation media and navigate to the database directory. Alternatively, navigate to the directory where you downloaded or copied the installation files.

       Use the same installation media to install Oracle Database Vault on all supported Windows platforms.

3. Double-click setup.exe to start Oracle Universal Installer.

4. In the Specify Installation Details screen, you need to specify the path to the Oracle home that contains the existing Oracle Database. The Destination Path box lists the Oracle home paths of all Oracle Database release 2 (10.2.0.3) Enterprise Edition databases registered with the system.
Select the Oracle home corresponding to the database into which you want to install Oracle Database Vault.

### Note:
- If an Oracle home does not have an Enterprise Edition of Oracle Database release 10.2.0.3 installed, then it is not displayed. You must ensure that the Oracle home has an Enterprise Edition of Oracle Database release 10.2.0.3 installed.
- If an Oracle home does not have Oracle Enterprise Manager Console DB 10.2.0.3.0 installed, then it is not displayed. You must ensure that the Oracle home has Oracle Enterprise Manager Console DB 10.2.0.3.0 installed.
- If an Oracle home contains an Automatic Storage Management (ASM) instance, then it is not displayed. You cannot install Oracle Database Vault into an Oracle home that also contains an ASM instance.
- If an Oracle home already contains Oracle Database Vault, then it is not displayed. You cannot install Oracle Database Vault into an Oracle home more than once.
- Oracle Clusterware should be running for the Database Vault installer to find the existing Real Application Clusters (RAC) databases. Ensure that Oracle Clusterware is running before installing Oracle Database Vault. You can use the `crsctl` command to start Oracle Clusterware.

5. Enter a user name for the Database Vault Owner account in the **Database Vault Owner** field. The user name can be a minimum of 2 and maximum of 30 characters long.

6. Enter a password for the Database Vault Owner account in the **Database Vault Owner Password** field. The password can be a minimum of 8 and a maximum of 30 characters. The password must include at least one alphabet, one digit, and one nonalphanumeric character (symbol). It cannot be the same as the account names for either the Database Vault owner or the Database Vault account manager. It cannot contain any consecutive repeating characters.

7. Reenter the password in the **Confirm Password** field.

8. Select **Create a Separate Account Manager** if you want to create a separate Account Manager to manage Oracle Database Vault accounts.

9. In the **Database Vault Account Manager** field, enter a user name for the Database Vault Account Manager if you have chosen to select the **Create a Separate Account Manager** check box. The user name can be a minimum of 2 and a maximum of 30 characters.

10. Enter a password for the Database Vault Account Manager account in the **Account Manager Password** field. The password can be a minimum of 8 and a maximum of 30 characters. The password must include at least one alphabet, one digit, and one nonalphanumeric character (symbol). It cannot be the same as the account names for either the Database Vault owner or the Database Vault account manager. It cannot contain any consecutive repeating characters.

11. Reenter the password in the **Confirm Password** field. Click **Next**.
12. The Select Existing Database screen is displayed. A list of all databases running from the selected Oracle home is displayed. Select the database into which you wish to install Oracle Database Vault.

---

**Note:**
- If the selected Oracle home contains more than one database, then Operating System (OS) authentication is turned off for all the databases in the Oracle home.
- Oracle recommends that you install Oracle Database Vault into an Oracle home containing only a single database.
- If a database is not listed, then check to make sure that you have followed the instructions under "Check the Database Requirements" on page 2-7.

---

13. Enter the existing SYS user password for the selected database in the **Existing Database SYS Password** field.

14. Reenter the SYS password in the **Confirm Password** field. Click **Next**.

---

**Note:** At this point, the database requirements are validated.

15. You are prompted to shut down all Oracle processes running from the Oracle home before proceeding. Shut down the Oracle processes, if you have not already done so.

**See Also:** "Stop Existing Oracle Processes" on page 2-9 for more information on stopping existing Oracle processes.

16. Product-specific prerequisite checks are performed. Confirm that all tests have passed. Click **Next** to continue.

17. The Summary screen is displayed with the installation details. Verify the details and click **Install**.

18. The Installation screen is displayed. After the installation completes, the Database Vault Configuration Assistant (DVCA) is run automatically. DVCA helps configure the Database Vault installation.

---

**Installing a Loopback Adapter**

When you install a loopback adapter, the loopback adapter assigns a local IP address for your computer. After you install a loopback adapter on your computer, you have at least two network adapters on your computer: your own network adapter and the loopback adapter. Oracle Database needs to have Windows using the loopback adapter as the primary adapter.

The primary adapter is determined by the order in which you installed the adapters: it is the last adapter installed. If you install additional network adapters after you install the loopback adapter, you need to deinstall the loopback adapter and reinstall it.

A loopback adapter is required if:

- You are installing on a DHCP computer, or
You are installing on a non-networked computer and plan to connect the computer to a network after installation.

This section covers the following topics:

- Checking if a Loopback Adapter Is Installed on Your Computer
- Installing a Loopback Adapter on Windows 2000
- Installing a Loopback Adapter on Windows 2003 or Windows XP
- Removing a Loopback Adapter

Checking if a Loopback Adapter Is Installed on Your Computer

To check if a loopback adapter is installed on your computer, run the `ipconfig /all` command:

```
SYSTEM_DRIVE:\> ipconfig /all
```

If there is a loopback adapter installed, you would see a section that lists the values for the loopback adapter. For example:

```
Ethernet adapter Local Area Connection 2:
  Connection-specific DNS Suffix . : Microsoft Loopback Adapter
  Physical Address . . . . . . . . . . : 02-00-4C-4F-4F-50
  DHCP Enabled. . . . . . . . . . . . . : Yes
  Autoconfiguration Enabled . . . . : Yes
  Autoconfiguration IP Address. . . : 169.254.25.129
  Subnet Mask . . . . . . . . . . . . : 255.255.0.0
```

Installing a Loopback Adapter on Windows 2000

Windows 2000 reports on the last network adapter installed. This means that if you install additional network adapters after you install the loopback adapter, you need to remove and reinstall the loopback adapter. The loopback adapter must be the last network adapter installed on the computer.

To install a loopback adapter on Windows 2000:

1. From the Start menu, select Settings, then Control Panel.
2. Double-click Add/Remove Hardware to start the Add/Remove Hardware wizard.
3. In the Welcome window, click Next.
4. In the Choose a Hardware Task window, select Add/Troubleshoot a device, and click Next.
5. In the Choose a Hardware Device window, select Add a new device, and click Next.
6. In the Find New Hardware window, select No, I want to select the hardware from a list, and click Next.
7. In the Hardware Type window, select Network adapters, and click Next.
8. In the Select Network Adapter window, do the following:
   a. Manufacturers: Select Microsoft.
   b. Network Adapter: Select Microsoft Loopback Adapter.
   c. Click Next.
9. In the Start Hardware Installation window, click **Next**.

10. In the Completing the Add/Remove Hardware Wizard window, click **Finish**.

11. Right-click **My Network Places** on the desktop and select **Properties**. This displays the Network and Dial-up Connections control panel.

12. Right-click the connection that was just created. This is usually "Local Area Connection 2". Select **Properties**.

13. On the **General** tab, select **Internet Protocol (TCP/IP)**, and click **Properties**.

14. In the Properties dialog box, click **Use the following IP address** and do the following:
   a. **IP Address**: Enter a non-routable IP address for the loopback adapter. Oracle recommends the following non-routable addresses:
      - 192.168.xxx (x is any value between 0 and 255)
      - 10.10.10.10
   b. **Subnet mask**: Enter 255.255.255.0.
   c. Record the values you entered, which you will need later in this procedure.
   d. Leave all other fields empty.
   e. Click **OK**.

15. Close the Network Connections window.

16. Restart the computer.

17. Add a line to the \SYSTEM_DRIVE:\WINNT\system32\drivers\etc\hosts file with the following format, right after the localhost line:

```
IP_address   hostname.domainname   hostname
```

   where:
   - **IP_address** is the non-routable IP address you entered in step 14.
   - **hostname** is the name of the computer.
   - **domainname** is the name of the domain.

   For example:

```
10.10.10.10   mycomputer.mydomain.com   mycomputer
```

18. Check the network configuration:

   a. Open **System** in the Control Panel, and select the **Network Identification** tab. In **Full computer name**, make sure you see the host name and the domain name, for example, **sales.us.mycompany.com**.

   b. Click **Properties**.

      In **Computer name**, you should see the host name, and in **Full computer name**, you should see the host name and domain name. Using the previous example, the host name would be **sales** and the domain would be **us.mycompany.com**.

   c. Click **More**. In **Primary DNS suffix of this computer**, the domain name, for example, **us.mycompany.com**, should appear.

   d. Exit the **System** Control Panel.
Installing a Loopback Adapter on Windows 2003 or Windows XP

To install a loopback adapter on Windows 2003 or Windows XP:

1. Open the Windows Control Panel.
2. Double-click **Add Hardware** to start the Add Hardware wizard.
3. In the Welcome window, click **Next**.
4. In the **Is the hardware connected?** window, select **Yes, I have already connected the hardware**, and click **Next**.
5. In the **The following hardware is already installed on your computer** window, in the list of installed hardware, select **Add a new hardware device**, and click **Next**.
6. In the **The wizard can help you install other hardware** window, select **Install the hardware that I manually select from a list**, and click **Next**.
7. From the list of hardware types, select the type of hardware you are installing window, select **Network adapters**, and click **Next**.
8. In the **Select Network Adapter** window, make the following selections:
   - **Manufacturer**: Select **Microsoft**.
   - **Network Adapter**: Select **Microsoft Loopback Adapter**.
9. Click **Next**.
10. In the **The wizard is ready to install your hardware** window, click **Next**.
11. In the Completing the Add Hardware Wizard window, click **Finish**.
12. If you are using Windows 2003, restart your computer.
13. Right-click **My Network Places** on the desktop and choose **Properties**. This displays the Network Connections Control Panel.
14. Right-click the connection that was just created. This is usually named "Local Area Connection 2". Choose **Properties**.
15. On the **General** tab, select **Internet Protocol (TCP/IP)**, and click **Properties**.
16. In the **Properties** dialog box, click **Use the following IP address** and do the following:
   a. **IP Address**: Enter a non-routable IP for the loopback adapter. Oracle recommends the following non-routable addresses:
      - 192.168.x.x (x is any value between 0 and 255)
      - 10.10.10.10
   b. **Subnet mask**: Enter 255.255.255.0.
   c. Record the values you entered, which you will need later in this procedure.
   d. Leave all other fields empty.
   e. Click **OK**.
17. Click **OK**.
18. Close **Network Connections**.
19. Restart the computer.
20. Add a line to the **SYSTEM_DRIVE:\WINDOWS\system32\drivers\etc\hosts** file with the following format, after the **localhost** line:
IP_address hostname.domainname hostname

where:
- **IP_address** is the non-routable IP address you entered in step 16.
- **hostname** is the name of the computer.
- **domainname** is the name of the domain.

For example:
10.10.10.10 mycomputer.mydomain.com mycomputer

21. Check the network configuration:
   a. Open **System** in the Control Panel, and select the **Computer Name** tab. In **Full computer name**, make sure you see the host name and the domain name, for example, **sales.us.mycompany.com**.
   b. Click **Change**. In **Computer name**, you should see the hostname, and in **Full computer name**, you should see the host name and domain name. Using the previous example, the host name would be **sales** and the domain would be **us.mycompany.com**.
   c. Click **More**. In **Primary DNS suffix of this computer**, you should see the domain name, for example, **us.mycompany.com**.

### Removing a Loopback Adapter

To remove a loopback adapter:
1. Display **System** in the Windows Control Panel.
2. In the Hardware tab, click **Device Manager**.
3. In the Device Manager window, expand **Network adapters**. You should see **Microsoft Loopback Adapter**.
4. Right-click **Microsoft Loopback Adapter** and select **Uninstall**.
5. Click **OK**.

### Postinstallation Tasks

This section lists the tasks to perform after you have completed an upgrade of your database. The following topics are discussed:
- **Back Up the Database**
- **Change Passwords for Oracle-Supplied Accounts**
- **Enable or Disable Connections with the SYSDBA Privilege**
- **Start the Listener and Database on Other Nodes (RAC Only)**
- **Run DVCA to Set Instance Parameters and Lock Out SYSDBA Sessions (RAC Only)**
- **Restart Enterprise Manager Database Control**

### Back Up the Database

Make sure you perform a full backup of the production database. See *Oracle Database Backup and Recovery User’s Guide* for details on backing up a database.
Change Passwords for Oracle-Supplied Accounts

Oracle strongly recommends that you change the password for each account after installation. This enables you to effectively implement the strong security provided by Oracle Database Vault.

Note: If you are creating a database using Database Configuration Assistant, you can unlock accounts after the database is created by clicking Password Management before you exit from Database Configuration Assistant.

Using SQL*Plus to Unlock Accounts and Reset Passwords
To unlock and reset user account passwords using SQL*Plus:

1. Start SQL*Plus and log in using the Database Vault Account Manager account. If you did not create the Database Vault Account Manager account during installation, then you will need to log in using the Database Vault Owner account.

2. Enter a command similar to the following, where account is the user account that you want to unlock and password is the new password:

   ```sql
   SQL> ALTER USER account [ IDENTIFIED BY password ] ACCOUNT UNLOCK;
   ```

   In this example:
   - The ACCOUNT UNLOCK clause unlocks the account.
   - The IDENTIFIED BY password clause resets the password.

   Note: If you unlock an account but do not reset the password, then the password remains expired. The first time someone connects as that user, they must change the user’s password.

To permit unauthenticated access to your data through HTTP, unlock the ANONYMOUS user account.

Enable or Disable Connections with the SYSDBA Privilege
In a default Database Vault installation, the operating system authentication to the database is disabled. In addition, connections to the database using the SYSDBA privilege (that is, those that use the AS SYSDBA clause) are disabled. This is a security feature and is implemented to prevent misuse of the SYSDBA privilege.

If a password file has been created using the orapwd utility with the nosysdba flag set to y (Yes) (the default action of a Database Vault installation), users will not be able to log in to an Oracle Database Vault instance using the SYS account or any account with SYSDBA privilege using the AS SYSDBA clause. You can reenable the ability to connect with the SYSDBA privilege by re-creating the password file with the nosysdba flag set to n (No). You might need to reenable the ability to connect with SYSDBA privileges, if certain products or utilities require it’s use.

When you re-create the password file, any accounts other than SYS that were granted the SYSDBA or SYSOPER privileges will have those privileges removed. You will need to regrant the privileges for these accounts after you have re-created the password file.

Use the following syntax to run orapwd:

```
C:\> ORACLE_HOME\bin\orapwd file=filename password=password [entries=users] force=y/n nosysdba=y/n
```
Postinstallation Tasks

Where:

- **file**: Name of password file (mandatory)
- **password**: Password for SYS (mandatory). Enter at least six alphanumeric characters.
- **entries**: Maximum number of distinct DBA users
- **force**: Whether to overwrite the existing file (optional). Enter y (for yes) or n (for no)
- **nosysdba**: Whether to enable or disable the SYS logon (optional for Oracle Database Vault only). Enter y (for yes) or n (for no)

The default is no, so if you omit this flag, the password file will be created enabling SYSDBA access for Oracle Database Vault instances.

For example:

```
C:\> oracle\product\10.2.0\db_1\bin\orapwd
file=C:\oracle\product\10.2.0\db_1\dbs\orapwORCL password=5hjk99 force=y
nosysdba=n
```

---

**Note**: Do not insert spaces around the equal (=) character.

---

**See Also**: Oracle Database Administrator’s Guide for more information on using the orapwd utility.

---

**Start the Listener and Database on Other Nodes (RAC Only)**

You need to start the listener and database on all RAC nodes other than the one on which the installation is performed. Use the following commands to start the listener and the database:

```
C:\> ORACLE_HOME\bin\lsnrctl start LISTENER_nodename
C:\> ORACLE_HOME\bin\srvctl start instance -d sid -i instance_name -c "SYS/password AS SYSDBA"
```

---

**Note**: You need to enable SYSDBA connections on all nodes before running these commands. See "Enable or Disable Connections with the SYSDBA Privilege" on page 2-17 for more information on enabling SYSDBA connections.

---

**Note**: You must use the Server Control (srvctl) utility to start and stop Oracle Database Vault RAC instances. Do not use SQL*Plus to start and stop RAC instances. You need to enable SYSDBA connections before you can use the srvctl command.

---

**Run DVCA to Set Instance Parameters and Lock Out SYSDBA Sessions (RAC Only)**

After installing Database Vault for a Real Application Clusters (RAC) instance, you need to run Database Vault Configuration Assistant (DVCA) with the -action optionrac switch on all other RAC nodes. This sets instance parameters and disables SYSDBA operating system authentication.
You need to run this command on all RAC nodes other than the node on which the Database Vault installation is performed. This step is required to enable the enhanced security features provided by Oracle Database Vault.

Note: The listener and database instance should be running on the nodes on which you run DVCA.

Use the following syntax to run DVCA:

```
C:\> ORACLE_HOME\bin\dvca -action optionrac -racnode host_name -oh oracle_home
-jdbc_str jdbc_connection_string -sys_passwd sys_password
[-logfile ./dvca.log] [-silent] [-nodecrypt] [-lockout]
```

Where:

- **action**: The action to perform. *optionrac* performs the action of updating the instance parameters for the RAC instance and optionally disabling SYSDBA operating system access for the instance.
- **racnode**: The host name of the RAC node on which the action is being performed. Do not include the domain name with the host name.
- **oh**: The Oracle home for the RAC instance.
- **jdbc_str**: The JDBC connection string used to connect to the database. For example, "jdbc:oracle:oci:@orcl1".
- **sys_password**: The password for the SYS user.
- **logfile**: Optionally, specify a log file name and location. You can enter an absolute path or a path that is relative to the location of the $ORACLE_HOME\bin directory.
- **silent**: Required if you are not running DVCA in an xterm window.
- **nodecrypt**: Reads plaintext passwords as passed on the command line.
lockout: Used to disable SYSDBA operating system authentication.

Note: You can reenable SYSDBA access by re-creating the password file with the nosysdba flag set to n (No). The orapwd utility enables you to do this.

Restart Enterprise Manager Database Control

Restart Enterprise Manager Database Control by using the following commands:

```cmd
C:\> ORACLE_HOME\bin\emctl stop dbconsole
C:\> ORACLE_HOME\bin\emctl start dbconsole
```

Note: Run the above commands on all cluster nodes for a RAC database.

Removing Oracle Software

Use Oracle Universal Installer (OUI) to remove Oracle software from an Oracle home. The following list summarizes the steps involved:

1. Log on as a member of the Administrators group.
2. Shut down all processes running in the Oracle home.
3. Start Oracle Universal Installer from the Start menu, select Programs, then ORACLE_HOME_NAME, then Oracle Installation Products, then Oracle Universal Installer. The Welcome screen for Oracle Universal Installer appears.
4. In the Welcome screen, select Deinstall Products. The Inventory screen appears. This screen lists all the Oracle homes on the system.
5. Select the Oracle home and the products that you wish to remove. Click Remove.

See Also: Refer to the Oracle Database Installation Guide for details on removing Oracle software

Note: You cannot remove or uninstall the Database Vault option. However, you can disable Oracle Database Vault. Refer to Oracle Database Vault Administrator’s Guide for more details.

You can also remove the entire Oracle home, as discussed earlier in this section.
Part II includes the appendixes. The contents of this part are:

- Appendix A, "How to Stop Processes in an Existing Oracle Real Application Clusters Database"
- Appendix E, "Using Response Files"
- Appendix B, "Running DVCA After Creating a Database Vault Database"
- Appendix C, "Database Listener Security Recommendations"
- Appendix D, "Initialization Parameters"
- Appendix F, "Enabling Oracle Database Vault Administrator Accessibility"
How to Stop Processes in an Existing Oracle Real Application Clusters Database

This appendix describes how to stop all processes in an Oracle Real Application Clusters (RAC) database, in preparation for installing Database Vault.

**Note:** Before you make any changes to the Oracle software, Oracle recommends that you create a backup of the Oracle Database installation.

Shut down the following Oracle Database services before modifying the Oracle Database software:

**Note:** You must perform these steps in the order listed.

1. Shut down any processes in the Oracle home on each node that can access a database. For example, you need to shut down Oracle Enterprise Manager Database Control.

   C:\> ORACLE_HOME\bin\emctl stop dbconsole

   **Note:** Before you shut down any processes that are monitored by Enterprise Manager Grid Control, set a blackout in Grid Control for the processes that you intend to shut down. This is necessary so that the availability records for these processes indicate that the shutdown was planned downtime, rather than an unplanned system outage.

2. Shut down all RAC instances on all nodes. To shut down all RAC instances for a database, enter the following command, where `db_name` is the name of the database:

   C:\> ORACLE_HOME\bin\srvctl stop database -d db_name -c "SYS/password AS SYSDBA"

3. Stop all node applications on all nodes. To stop node applications running on a node, enter the following command, where `node` is the name of the node where the applications are running:

   C:\> ORACLE_HOME\bin\srvctl stop nodeapps -n node
4. Stop the OracleServiceSID service on all nodes. You can access the Services window from the Control Panel.
You should run Database Vault Configuration Assistant (DVCA) after creating a new Oracle Database Vault database, if any of the following conditions is true:

- Database Vault is installed into an Oracle home that has more than one database. You need to run DVCA on the other databases in the Oracle home. This enables Database Vault security for those databases. The databases should meet the prerequisites for installing Oracle Database Vault, as discussed in "Preinstallation and Installation Tasks" on page 2-1.

- Database Configuration Assistant (DBCA) is used to create a new Database Vault database in an Oracle home that already has a Database Vault database. DVCA loads the Database Vault schema objects into the new database, creates the DV_OWNER and optional DV_ACCTMGR accounts, and deploys the Database Vault Administrator application for the database.

Use the following syntax to run the DVCA utility:

```
C:\> ORACLE_HOME\bin\dvca -action option [-racnode host_name] -oh oracle_home ^
-jdbc_str jdbc_connection_string -sys_passwd SYS_password -owner_account ^
-DV_owner_account_name -owner_passwd DV_owner_account_password [-acctmgr_account ^
-DV_account_manager_account_name -acctmgr_passwd DV_account_manager_password] ^
{["en"],["de"],["es"],["fr"],["it"],["ja"],["ko"],["pt_BR"],["zh_CN"],["zh_TW"]}]
```

Where:

- action: The action to perform. option creates the Database Vault schema objects, creates the DV_OWNER account and the optional DV_ACCTMGR account, and deploys the Database Vault Administrator application.

- racnode: The host name of the Real Application Clusters (RAC) node on which the action is being performed. Do not include the domain name with the host name. Use this option if this is a RAC database.

- oh: The Oracle home for the database.

- jdbc_str: The JDBC connection string used to connect to the database. For example, jdbc:oracle:oci:@orcl1, where orcl1 is the net service name in the tnsnames.ora file ($ORACLE_HOME\network\admin\tnsnames.ora).

- sys_passwd: Password for user SYS

- owner_account: Oracle Database Vault Owner account name

- owner_passwd: Oracle Database Vault owner account password
- **acctmgr_account**: (Optional) Oracle Database Vault Account Manager user
- **acctmgr_passwd**: Oracle Database Vault Account Manager password (if a user name has been specified)
- **logfile**: Optionally, specify a log file name and location. You can enter an absolute path or a path that is relative to the location of the `$ORACLE_HOME\bin` directory
- **silent**: Required if you are not running DVCA in an xterm window
- **nodecrypt**: Reads plaintext passwords as passed on the command line. You must use this option if you are passing plaintext passwords to the command.
- **lockout**: Disables SYSDBA operating system authentication
- **languages**: Declares the language content to load, defaults to "en" (English). You can specify multiple languages. Include each language in quotation marks with commas separating different languages. Enclose the list of languages in braces. For example, `-languages {"en","fr","ja"}`.

The following lists the language key:
- `de`: German
- `en`: English
- `es`: Spanish
- `fr`: French
- `it`: Italian
- `ja`: Japanese
- `ko`: Korean
- `pt_BR`: Brazilian Portuguese
- `zh_CN`: Simplified Chinese
- `zh_TW`: Traditional Chinese

**Note:**
- If the Oracle system identifier (SID) of the database is more than 8 characters, then you would need to update the Net service name in the `tnsnames.ora` file before running DVCA. See Oracle Database Vault Release Notes for Microsoft Windows (64-Bit) on Intel Itanium for more information.
- DVCA should also be run before and after installing database options like Spatial, Java, and Intermedia. See Oracle Database Vault Administrator’s Guide for more details.

If you have used the `lockout` option with the `dvca` command, then to successfully lockout SYSDBA connections, you also need to add the following values to your Microsoft Windows registry under `HKEY_LOCAL_MACHINE\SOFTWARE\ORACLE\KEY_ORACLE_HOME_NAME:`
For a RAC database, you also need to run the `dvca -action option rac` command on all nodes other than the node on which the installation is performed. Refer to "Run DVCA to Set Instance Parameters and Lock Out SYSDBA Sessions (RAC Only)" on page 2-18 for details.

---

**Table B–1  Registry Values to Be Added**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORA_SID_PWFILE</td>
<td>REG_SZ</td>
<td><em>Path_to_the_password_file</em></td>
</tr>
<tr>
<td>For example,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ORA_ORCL_PWFILE</td>
<td>REG_SZ</td>
<td><em>C:\ORACLE\PRODUCT\10.2.0\DB_1\dbs\orapwORCL</em></td>
</tr>
</tbody>
</table>

**Note:**

- For a Real Application Clusters (RAC) database, replace `SID` with `instance_name`, which is the `SID` combined with the `instance_number`.
- For a RAC database, you need to add the registry values for all cluster nodes.
Database Listener Security Recommendations

This appendix lists the security recommendations for protecting the database listener.

Security Checklist for the Database Listener

The following configuration guidelines help enhance the security for your database listener:

- The database listener configuration file, listener.ora, and the supporting OracleNet configuration file, tnsnames.ora, should have the ADMIN_RESTRICTIONS_LISTENER_SID=ON protection enabled.
- The database listener configuration file, listener.ora, and the supporting OracleNet configuration file, tnsnames.ora, should have the PLSExtProc listener disabled.
- The listener should be configured to listen on a non-standard port. This means that the default port (1521) should be changed.
- The listener should be password protected or leverage operating system (OS) authentication based on the organizational security policy.
- The listener should use a unique name, which should be different from the default name.
- The listener.ora file should have the following parameter set:
  INBOUND_CONNECT_TIMEOUT_LISTENERName = 10
- The sqlnet.ora file should have the following parameters set:
  SQLNET.INBOUND_CONNECT_TIMEOUT = 12
  SQLNET.EXPIRE_TIME = 10
- The listener should have logging enabled as follows:
  LOGGING_LISTENER = ON
  LOG_STATUS = ON
  LOG_DIRECTORY_ListenerName = Directory_owned_by_Administrator
  LOG_FILE_ListenerName = File_owned_by_Administrator
The listener should have tracing enabled as follows:

```
TRACE_DIRECTORY_ListenerName = Directory_owned_by_Oracle_account
TRACE_FILE_ListenerName = File_owned_by_Oracle_account
TRACE_LEVEL = user
TRACE_FILELEN_ListenerName = 512
TRACE_FILENO_ListenerName = 1000
TRACE_TIMESTAMP_ListenerName = dd-mon-yyyy hh:mm:ss.mil
```

**Note:** Only the Administrators group should have read and write permissions over the TRACE_DIRECTORY.

Only the Administrators group should have read and write permissions over the TRACE_FILE.
Initialization Parameters

When you install Oracle Database Vault, the security specific database initialization parameters are initialized with default values. The following list shows the default values for these security specific initialization parameters:

REMOTE_LOGIN_PASSWORDFILE = default, EXCLUSIVE
AUDIT_SYS_OPERATIONS = TRUE
REMOTE_OS_AUTHENT = FALSE
REMOTE_OS_ROLES = FALSE
OS_ROLES = FALSE
OS_AUTHENT_PREFIX = ''
SQL92_SECURITY = TRUE
O7_DICTIONARY_ACCESSIBILITY = FALSE
Using Response Files

This appendix describes how to install Oracle Database Vault using a response file. It includes the following topics:

- How Response Files Work
- Installing Database Vault Using a Response File
- Troubleshooting Silent Mode Installation

How Response Files Work

You can automate the installation and configuration of Oracle software by specifying a response file when you start Oracle Universal Installer. Oracle Universal Installer uses the values contained in the response file to provide answers to some or all of Oracle Universal Installer prompts.

Typically, Oracle Universal Installer runs in interactive mode, which means that it prompts you to provide information in graphical user interface (GUI) screens. When you use response files to provide this information, you run Oracle Universal Installer at a command prompt using the silent mode.

During a silent mode installation, Oracle Universal Installer does not display any screens. Instead, it displays progress information in the terminal that you used to start it.

You define the settings for a silent mode installation by entering values for the variables listed in the response file. For instance, to specify the Oracle home, you would supply the appropriate value for the `ORACLE_HOME` variable, as in the following example:

```
ORACLE_HOME = "C:\oracle\product\10.2.0\OraDBHome1"
```

Another way of specifying the response file’s variable settings is to pass them as command line arguments when you run Oracle Universal Installer. For example:

```
SYSTEM_DRIVE:\setup.exe_location> setup -silent "ORACLE_HOME=C:\oracle\product\10.2.0\OraDBHome1" ...
```

This method is particularly useful if you do not want to embed sensitive information, such as passwords, in the response file. For example:

```
SYSTEM_DRIVE:\setup.exe_location> setup -silent "s_ownerPasswd=binks342" ...
```

Ensure that you enclose the variable and its setting in double quotation marks (" ").
Installing Database Vault Using a Response File

See Also: Oracle Universal Installer and OPatch User’s Guide for more information about response file formats

General Procedure for Using Response Files

The following are the general steps to install and configure Oracle products using Oracle Universal Installer in silent mode:

   Note: You must complete all required preinstallation tasks on a system before running Oracle Universal Installer in silent mode.

   1. Prepare a response file.
   2. Run Oracle Universal Installer in silent mode.

Installing Database Vault Using a Response File

Use the following steps to install Database Vault using a response file:

1. Prepare the Response File
2. Run Oracle Universal Installer Using the Response File

Prepare the Response File

Oracle Database Vault comes with a response file template (dv.rsp) that you can edit to customize your installation. You can use this response file for silent mode installations.

The dv.rsp file is located in the response directory on the installation media. Use the following steps to copy and modify the response file:

1. Copy the response file from the database\response directory to a directory on your system.
2. Open the response file in a text editor.

   The response file contains variables that store information required by Oracle Universal Installer. You need to set these variable values in the file. For example, you need to specify values for the Oracle home location, Database Vault owner name, and other such information required by Oracle Universal Installer.

   The response file contains two parts. You should edit the variables only in the first part. The second part of the file contains preset variables, which must not be edited. This instruction is also provided in the response file.

   Some of the variables are mandatory while others are optional. The mandatory variables must be supplied for a successful installation. Each variable is explained within the response file. Examples are also provided within the response file.

   The following excerpt from the response file shows instructions related to setting the Oracle home variable:

   #------------------------------------------------------------------
   --
   #Name       : ORACLE_HOME
   #Datatype   : String
   #Description: Complete path of the existing 10.2.0.3.0 database Oracle
   #Home into which Oracle Database Vault will be installed.
   #
#Requirement: 1) Must have Oracle Database Enterprise Edition release 10.2.0.3.0 installed. 
2) Must have Oracle Enterprise Manager Console DB version 10.2.0.3.0 installed. 
3) Cannot contain an Automatic Storage Management (ASM) instance. 
4) Cannot contain Oracle Database Vault.

Example: ORACLE_HOME = "C:\OHOME1"
------------------------------------------------------------------------------
--
ORACLE_HOME=<Value Required>

Lines starting with a pound sign (#) are comment entries. If you wish to omit an optional variable, you can comment it by adding a pound sign (#) at the beginning of the line. You cannot comment lines containing mandatory variables, like ORACLE_HOME.

Remember that you can specify sensitive information, such as passwords, at the command line rather than within the response file. "How Response Files Work" on page E-1 explains this method.

See Also: Oracle Universal Installer and OPatch User’s Guide for detailed information on creating response files.

3. Follow the instructions in the file to edit it. Save and close the file.

Note: Oracle Universal Installer fails if you do not correctly configure the response file. Refer to the "Troubleshooting Silent Mode Installation" section on page E-4 for more information about troubleshooting a failed silent mode installation.

Run Oracle Universal Installer Using the Response File

Now, you are ready to run Oracle Universal Installer at the command line, specifying the response file you created, to perform the installation. The Oracle Universal Installer executable, setup.exe, provides several options. For help information on the full set of these options, run setup.exe with the -help option. For example:

```
SYSTEM_DRIVE:\setup.exe_location> setup -help
```

To run Oracle Universal using a response file:

1. Complete the preinstallation tasks listed in Chapter 2, "Installing Oracle Database Vault as an Option".

   See Also: Frequently Asked Questions in the Oracle Database Vault Release Notes for Microsoft Windows (64-Bit) on Intel Itanium for a checklist of the preinstallation requirements

2. Log on as a member of the Administrators group.

3. To start Oracle Universal Installer in silent mode, enter a command similar to the following:

   Note: Do not specify a relative path to the response file. If you specify a relative path, Oracle Universal Installer fails.
In this example:
- `-silent` indicates that you want to run Oracle Universal Installer in silent mode.
- `responsefilename` is the full path and file name of the installation response file that you configured.

**Troubleshooting Silent Mode Installation**

A silent installation fails in the following conditions:
- You do not specify a response file
- You specify an incorrect or incomplete response file
- Oracle Universal Installer encounters an error, such as insufficient disk space
- The Database Vault installation prerequisites have not been met

Oracle Universal Installer or configuration assistant validates the response file at run time. If the validation fails, the silent mode installation or configuration process ends. Oracle Universal Installer treats values for parameters that are of the wrong context, format, or type as if no value was specified in the file.
Enabling Oracle Database Vault Administrator Accessibility

As part of the effort to make Oracle products, services, and supporting documentation accessible and usable to the disabled community, Oracle Database Vault Administrator offers several features that make management data available to users of assistive technology. To enable these features and provide for full accessibility, you must modify two configuration settings, which are described in the following sections:

- Enabling Oracle Database Vault Administrator Accessibility Mode
- Providing Textual Descriptions of Database Vault Administrator Charts

Enabling Oracle Database Vault Administrator Accessibility Mode

Oracle Database Vault Administrator takes advantage of user interface development technologies that improve the responsiveness of some user operations. For example, when you navigate to a new record set in a table, Oracle Database Vault Administrator does not redisplay the entire HTML page. However, this performance-improving technology is generally not supported by screen readers. To disable this feature, and as a result, make the Database Vault Administrator HTML pages more accessible for disabled users, use the following procedure.

To enable the display of an entire HTML page:

1. Locate the `uix-config.xml` configuration file.
   
   To locate the `uix-config.xml` file in an Oracle Database 10g installation, change directory to the following location in the Oracle home:
   ```bash
   ORACLE_HOME\dv\jlib\dva_webapp\dva_webapp\WEB-INF
   ```

2. Open the `uix-config.xml` file using a text editor and locate the following entry:
   ```xml
   <!-- An alternate configuration that disables accessibility features -->
   <default-configuration>
   <accessibility-mode>inaccessible</accessibility-mode>
   </default-configuration>
   ```

3. Change the value of the accessibility-mode property from `inaccessible` to `accessible`.

4. Save and close the `uix-config.xml` file.

5. Restart Database Vault Administrator.

See Also: For more information on starting Oracle Database Vault Administrator, refer to Oracle Database Vault Administrator’s Guide.
Providing Textual Descriptions of Database Vault Administrator Charts

In the Monitor page of the Database Vault Administrator, a chart is used to display security policy data. However, charts do not convey information in a manner that can be read by a screen reader. To remed this problem, you can configure Database Vault Administrator to provide a complete textual representation of each chart. By default, support for the textual representation of charts is disabled. When textual description for charts is enabled, Database Vault Administrator displays a textual representation of the chart data.

To enable the textual representation of charts:

1. Locate the web.xml configuration file.
   
   To locate the web.xml file in a Oracle Database 10g installation, change directory to the following location in the Oracle home:
   
   ORACLE_HOME\dv\jlib\dva_webapp\dva_webapp\WEB-INF

2. Open the web.xml file with your favorite text editor and locate the following six lines of the file:

   <!-- Uncomment this to enable textual chart descriptions
   <context-param>
   <param-name>enableChartDescription</param-name>
   <param-value>true</param-value>
   </context-param>
   -->

3. Remove comments from this section by deleting the first line and the last line of this section so that the section consists of only these four lines:

   <context-param>
   <param-name>enableChartDescription</param-name>
   <param-value>true</param-value>
   </context-param>

4. Save and exit the web.xml file.

5. Restart Database Vault Administrator.

See Also: For more information on starting Oracle Database Vault Administrator, refer to Oracle Database Vault Administrator’s Guide.
Index

Numerics
10.2.0.3 patch set, 2-8

A
accessibility features, F-1
Account Manager, 2-11
accounts
  Database Vault Account Manager, 1-2
  Database Vault Owner, 1-1
  unauthenticated access to, 2-17
Administrators group, 2-10
ANONYMOUS user
  unauthenticated account access with, 2-17
applying 10.2.0.3 patch set, 2-8
assistive technology, F-1
audit policy, 1-2

B
backups
  after upgrading, 2-16
  importance, 2-8
  preparing a strategy, 2-8
Business Components for Java (BC4J), 2-6

C
certification, hardware and software, 1-2, 2-5
change passwords
  for oracle-supplied accounts, 2-17
checking
database requirements, 2-7
  hardware requirements, 2-2
  software requirements, operating system requirements, 2-3
compilers
  supported, 2-4
connectivity tools
  Oracle Procedural Gateway
    support status, 2-6
  Oracle Transparent Gateway
    support status, 2-6
CyberSafe Adapter Support, 2-6

D
database (RAC)
  starting, 2-18
  stopping processes, A-1
database requirements, 2-7
Database Vault
  accounts, 1-1
  audit policy, 1-2
  initialization parameters, 1-2
Database Vault Account Manager account
  password, 1-2
  user name, 1-2
Database Vault Configuration Assistant, 2-18
Database Vault Owner, 2-11
Database Vault Owner account
  password, 1-1
  user name, 1-1
DCE Adapter Support, 2-6
disk space
  checking, 2-3
  requirements, 2-2
DV_ACCTMGR role, 1-2
DV_OWNER role, 1-1
DVCA
  See Database Vault Configuration Assistant
dvca command, 2-18, 2-19, B-1

E
Enterprise Manager Console DB
  installing, 2-7
Entrust PKI Support, 2-6
errors
  silent mode, E-4

F
file systems
  system requirements, 2-2
files
  response files, E-2

G
Generic Connectivity, 2-6
GNU Compiler Collection (GCC)
support status, 2-6

H

hardware and software certifications, 1-2
hardware certification, 1-2, 2-5
hardware requirements, 2-2

I

initialization parameters, 1-2, D-1
installation
  considerations, 1-2
  errors
    silent mode, E-4
response files, E-1, E-2
  preparing, E-2
  silent mode, E-4
templates, E-2
silent mode, E-4
error handling, E-4
installing
  Enterprise Manager Console DB, 2-7
  Oracle Universal Installer, using, 2-10

J

Java Server Pages, 2-6
JRE (Java Runtime Environment)
  requirements, 2-2

L

listener, 2-7
  security checklist, C-1
  stopping existing listener process, 2-10
listener (RAC)
  starting, 2-18
logging on
  SYSDBA privilege connections, enabling, 2-17
loopback adapters
  about, 2-12
  checking if installed, 2-13
  installing, 2-12 to ??
  installing on Windows 2000, 2-13
  installing on Windows 2003, 2-15
  installing on Windows XP, 2-15
  removing, 2-16
  when required, 2-12
See also network adapters, primary network adapters

M

memory requirements, 2-2
Microsoft Internet Explorer, 2-7
monitoring
  accessibility features, enabling, F-2
  textual representation in charts, enabling, F-2
  multiple Oracle homes, 1-3

N

nCipher Accelerator Support, 2-6
network adapters
  how primary adapter is determined, 2-12
network protocols, supported, 2-4
network topics
  loopback adapters, 2-12 to ??
NTFS system requirements, 2-2

O

operating system requirements, 2-3
operating systems, supported, 2-4
Oracle Clusterware
  starting, 2-9
Oracle Data Provider for .NET, 2-6
Oracle Database
  Windows Terminal Services support, 2-5
Oracle Database Client
  requirements, 2-5
Oracle Database Extensions for .NET, 2-6
  support status, 2-6
Oracle Database Vault
  audit policy, 1-2
  initialization parameters, 1-2, D-1
Oracle Database Vault Administrator
  accessibility features, enabling, F-1
Oracle Enterprise Integration Gateways, 2-6
Oracle Enterprise Manager Grid Control CD, 2-6
Oracle Enterprise Manager Java Console, 2-6
Oracle homes, multiple, 1-3
Oracle Messaging Gateway, 2-6
Oracle MetaLink site
  about, 2-5
  accessing, 2-5
Oracle Migration Workbench, 2-6
Oracle Net
  stopping existing listener, 2-10
Oracle Objects for OLE, 2-6
Oracle Open Gateways, 2-7
Oracle Procedural Gateway
  support status, 2-6
Oracle services
  stopping, 2-10
Oracle Transparent Gateway
  support status, 2-6
Oracle Universal Installer, 2-7, 2-8, 2-10, 2-20
  response files, E-1
Oracle Workflow Builder, 2-6
oracle-supplied accounts
  change passwords, 2-17
orapwd utility, 2-17
OUI, 2-8

P

password file, 2-7
passwords
  Database Vault Account Manager, 1-2
  Database Vault Owner, 1-1
password files, 2-17
resetting
   with SQL*Plus, 2-17
specifying for response files, E-1
unlocking
   with SQL*Plus, 2-17
See also
security

patch set
applying, 2-8
documentation, 2-8
primary network adapters
how determined, 2-12
See also loopback adapters, network adapters
privileges
SYSDBA, enabling or disabling connection, 2-17
Pro*COBOL, 2-6
process
   stopping existing, 2-9
   stopping existing listener process, 2-10

RAM requirements, 2-2
Real Application Clusters
   Instance Parameters, setting, 2-18
   SYSDBA sessions, locking, 2-18
REMOTE_LOGIN_PASSWORDFILE parameter, 2-7
removing, Oracle Software, 2-20
requirements
database, 2-7
for JRE, 2-2
hard disk space, 2-2
hardware, 2-2
hardware certification, 2-5
hardware, verifying, 2-3
listener, 2-7
Oracle Database 10.2.0.3 patch set, 2-8
Oracle Database Client, 2-5
Oracle Enterprise Manager Console DB 10.2.0.3, 2-7
password file, 2-7
service packs, 2-4
software certification, 2-5
software, operating system, 2-3
Web browser support, 2-7
Windows Remote Desktop Connection support, 2-5
Windows Telnet Services, 2-5
Windows Terminal Services, 2-5
response files
   about, E-1
genral procedure, E-2
   passing values at command line, E-1
   passwords, E-1
   security, E-1
   specifying with Oracle Universal Installer, E-3
See also silent mode, E-1
response files installation
   about, E-1
roles

DV_ACCTMGR, 1-2
DV_OWNER, 1-1

screen
   Specify Installation Details, 2-10
security
See also
passwords
security checklist
database listener, C-1
service pack requirements, 2-4
services
   stopping, 2-10
setup.exe file, 2-10
silent mode installation, E-4
software and hardware certifications, 1-2
software certification, 1-2, 2-5
software requirements, operating system requirements, 2-3
specifying installation details, 2-10
srvctl command, 2-18
stopping
   Oracle processes, 2-9
   stopping Oracle services, 2-10
   stopping RAC processes, A-1
SYSDBA privilege
   enabling or disabling connections with, 2-17
system architecture, supported, 2-4
system requirements
   for NTFS file systems, 2-2

temporary directory, 2-3
temporary disk space
   checking, 2-3
   freeing, 2-3
tmp directory
   checking space in, 2-3
   freeing space in, 2-3

unsupported components
   on Windows Terminal Services, 2-5
upgrading
   after upgrading, 2-16
   backup strategy, 2-8
   post upgrade actions, 2-16
user names
   Database Vault Account Manager, 1-2
   Database Vault Owner, 1-1
users
   Database Vault Account Manager, 1-2
   Database Vault Owner, 1-1

Web browser support, 2-7
Web browsers, Microsoft Internet Explorer, 2-7
Windows
   Administrators group, 2-10
   compilers, supported, 2-4
   network protocol, supported, 2-4
   operating systems, supported, 2-4
   system architecture, supported, 2-4
Windows Telnet Services support, 2-5
Windows Terminal Services
   support, 2-5
   unsupported components, 2-5