Oracle® Audit Vault

Collection Agent Installation Guide

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Oracle Audit Vault Collection Agent Installation Guide, Release 10.2.3.2

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Preface

Oracle Audit Vault Collection Agent Installation Guide explains how to prepare for, install, and configure Oracle Audit Vault collection agents. It provides specific instructions for the operating system and Oracle software technology components that Oracle Audit Vault collection agent requires.

Audience

This document is intended for Oracle database administrators (DBAs) and system administrators, and those who are involved in the installation of Oracle Audit Vault and its related components.

Documentation Accessibility

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Related Documents

For more information, refer to the following documents:

- *Oracle Audit Vault Patch Set 1 Release Notes*
- *Oracle Audit Vault Server Installation Guide for Linux x86*
- *Oracle Audit Vault Server Installation Guide for Microsoft Windows (32-Bit)*
- *Oracle Audit Vault Server Installation Guide for Solaris Operating System (SPARC 64-Bit)*
- *Oracle Audit Vault Server Installation Guide for AIX Based Systems*
- *Oracle Audit Vault Server Installation Guide for Linux x86-64*
- *Oracle Audit Vault Server Installation Guide for HP-UX Itanium*
- *Oracle Audit Vault Licensing Information*
- *Oracle Audit Vault Administrator's Guide*
- *Oracle Audit Vault Auditor's Guide*

To download free release notes, installation documentation, updated versions of this guide, white papers, or other collateral, visit the Oracle Technology Network (OTN). You must register online before using OTN. Registration is free. You can register at

http://www.oracle.com/technology/membership/

If you already have a user name and password for OTN, then you can go directly to the Oracle Audit Vault documentation section of the OTN Web site at

http://www.oracle.com/technology/documentation/auditvault.html

For OTN information specific to Oracle Audit Vault, visit

http://www.oracle.com/technology/products/audit-vault/index.html

For the Oracle Audit Vault Discussion Forums, visit

http://forums.oracle.com/forums/forum.jspa?forumID=391

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1

Overview of Oracle Audit Vault Collection Agent Installation

Oracle Audit Vault is a powerful enterprisewide audit solution that efficiently consolidates, detects, monitors, alerts, and reports on audit data for security auditing and compliance. Oracle Audit Vault provides the ability to consolidate audit data and critical events into a centralized and secure audit warehouse.

This chapter provides an overview of the Oracle Audit Vault collection agent installation process. This chapter includes the following sections:

1.1 Deploying Oracle Audit Vault Collection Agents

Where you install the Oracle Audit Vault collection agents depends on the type of data that the collection agent collects. If the collection agent will collect audit data from the operating system, you must install the collection agent on the same computer as the source database. Otherwise, if the audit data comes from the database itself, you can install the collection agent on any computer that has access to the source database.

Table 1–1 summarizes the deployment scenarios you can use for the Oracle Audit Vault collection agents. For a listing of the types of audit data the collection agents collect, see *Oracle Audit Vault Administrator's Guide*.

Table 1–1 Collection Agent Deployment Scenarios

Collector Type	Audit Source and Supported Versions	Where to Install
OSAUD	Oracle Database Releases 9.2.x, 10.1.x, 10.2.x, and 11.x	On the same host as the source database. For Oracle RAC installations, install the OSAUD collector on each database instance that contains audit files.
DBAUD	Oracle Database Releases 9.2.x, 10.1.x, 10.2.x, and 11.x	On any computer in which SQL*Net can communicate with the source database.
REDO	Oracle Database Enterprise Edition Releases 9.2.0.8, 10.2.0.3 and higher, 11.1.0.6 and higher, 11.2 and higher	On any computer in which SQL*Net can communicate with the source database. For Oracle RAC installations, install REDO on just one database instance because REDO logs are usually stored in shared storage.

Table 1–1 (Cont.) Collection Agent Deployment Scenarios

Collector Type	Audit Source and Supported Versions	Where to Install
MSSQLDB	Microsoft SQL Server SQL Server 2000 and SQL Server 2005 on Microsoft Windows 2000 Server and Microsoft Windows 2003 Server (32 bit) platforms	On the same computer as the Microsoft SQL Server source database.
SYBDB	Sybase Adaptive Server Enterprise (ASE) ASE 12.5 through ASE 15.0 on Linux and UNIX-based platforms, and on Microsoft Windows platforms	On any computer in which SQL*Net can communicate with the source database.
DB2DB	IBM DB2 IBM DB2 Version 8.2 and Version 9.5 on Linux and UNIX-based platforms, and on Microsoft Windows platforms	On the same computer as the IBM DB2 source database

1.2 Oracle Audit Vault Collection Agent Installation Methods

You can choose different installation methods to install Oracle Audit Vault collection agents, as follows:

- Interactive Installation Methods
- Automated Installation Methods Using Response Files

1.2.1 Interactive Installation Methods

When you use the interactive method to install Oracle Audit Vault collection agent, Oracle Universal Installer displays a series of screens that enable you to specify all of the required information to install the Oracle Audit Vault collection agent software.

1.2.2 Automated Installation Methods Using Response Files

Oracle Audit Vault provides a response file template for Oracle Audit Vault collection agent (`avagent.rsp`) and one for an upgrade installation (`upgrade_avagent.rsp`). These response template files can be found in the *`AV installer location`*`/response` directory on the Oracle Audit Vault collection agent installation media.

When you start Oracle Universal Installer and specify a response file, you can automate all of the Oracle Audit Vault collection agent installation. These automated installation methods are useful if you need to perform multiple installations on similarly configured systems or if the system where you want to install the software does not have X Window system software installed.

Oracle Universal Installer runs in silent mode if you use a response file that specifies all required information. None of the Oracle Universal Installer screens are displayed and all interaction (standard output and error messages) and installation logs appear on the command line.

> **See Also:** Section 3.3 for information about performing an Oracle Audit Vault silent installation and Section 4.4 for information about performing an Oracle Audit Vault silent upgrade installation. Information about installing Oracle products in *Oracle Universal Installer and OPatch User's Guide* for more information about installing and using response files

1.3 Oracle Audit Vault Collection Agent Installation Environment

An Oracle Audit Vault collection agent provides run-time support for audit data collection by Oracle Audit Vault collectors. It also contains the audit data collectors for Oracle Database, SQL Server database, Sybase ASE database, and IBM DB2 database sources. The DBAUD, OSAUD, and REDO collectors are provided for Oracle Database sources, the MSSQLDB collector is provided for SQL Server Database sources, the SYBDB collector is provided for Sybase ASE Database sources, and the DB2DB collector is provided for IBM DB2 sources. See the information about the Oracle Audit Vault architecture in *Oracle Audit Vault Administrator's Guide* for more information.

Oracle Audit Vault collection agent includes Oracle Container for J2EE (OC4J) and Oracle Database Client components, and is deployed within its own directory. The agent can be installed on the same system as the Oracle Audit Vault Server (Audit Vault Server), or on the same system that hosts the source of audit logs, or on a third, independent system. Where you deploy the agent will depend on the hardware resources available and on the requirements from the specific audit data collectors that must run within the agent. As a best practice, the Oracle Audit Vault collection agent should be installed on each host system to be audited. The DBAUD, REDO, SYBDB, and DB2DB collectors do not place any restrictions on the deployment of the collection agent; they can be deployed anywhere depending on your requirements. However, the OSAUD and MSSQLDB collectors need local access to the disk that stores the audit trail files written by the source database. Therefore, it must be deployed on a host system that mounts these disks locally, not across the network.

The collection agent communicates with the Audit Vault Server to receive some configuration information and to send audit data for storage. This communication channel is based on the Oracle Call Interface (OCI). Immediately following installation, password-based authentication is used to secure this channel. Administrators can further secure this channel after installation by using the TCPS protocol to encrypt data.

The collection agent also communicates with the Oracle Audit Vault Console to exchange management information, such as starting and stopping collectors, and collecting performance metrics. This communication channel is HTTP-based. If X.509 certificates are provided, this channel can be further secured to use HTTPS encryption and mutual authentication with the Oracle Audit Vault Console.

1.4 Installation Considerations

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

- Hardware and Software Considerations
- Multiple Oracle Homes

1.4.1 Hardware and Software Considerations

The platform-specific hardware and software requirements that this installation guide includes were current at the time this guide was published. However, because new platforms and operating system versions might be certified after publishing this guide, review the certification matrix on the My Oracle Support (formerly Oracle*MetaLink*) Web site for the most up-to-date list of certified hardware platforms and operating system versions. The My Oracle Support Web site is available at

`http://metalink.oracle.com`

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

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

1.4.2 Multiple Oracle Homes

This product supports multiple Oracle homes. This means you can install this release of the software more than once on the same system, in different Oracle home directories.

2

Oracle Audit Vault Collection Agent Preinstallation Requirements

This chapter describes Oracle Audit Vault collection agent preinstallation requirements. This chapter includes the following sections:

- Preinstallation Requirements for Linux and UNIX-Based Platforms
- Preinstallation Requirements for the Microsoft Windows 32-Bit Platform
- Preinstallation Requirements for the Microsoft Windows 64-Bit (x64) Platform
- Oracle Audit Vault Collection Agent Hardware and Software Certification

2.1 Preinstallation Requirements for Linux and UNIX-Based Platforms

This section describes the following preinstallation tasks:

- Becoming Familiar with the Features of Oracle Audit Vault
- Logging In to the System as the root User
- Preinstallation Requirements for Linux x86
- Preinstallation Requirements for Linux x86-64
- Preinstallation Requirements for Solaris Operating System (SPARC 64-Bit)
- Preinstallation Requirements for HP-UX PA-RISC (64-Bit)
- Preinstallation Requirements for AIX
- Preinstallation Requirements for HP-UX Itanium
- Creating the Required Operating System Group and User
- Identifying the Required Software Directories
- Identifying or Creating an Oracle Base Directory
- Setting the DISPLAY Environment Variable
- Setting the Correct Locale

2.1.1 Becoming Familiar with the Features of Oracle Audit Vault

To plan the installation process, you must be familiar with the features of Oracle Audit Vault. *Oracle Audit Vault Administrator's Guide* discusses the basic features of Oracle Audit Vault.

2.1.2 Logging In to the System as the root User

Before you install the Oracle software, you must complete several tasks described in the sections that follow as the `root` user. Log in to your system as the `root` user.

2.1.3 Preinstallation Requirements for Linux x86

This section describes the following preinstallation tasks:

- Checking the Hardware Requirements for Linux x86
- Checking the Operating System Requirements for Linux x86

2.1.3.1 Checking the Hardware Requirements for Linux x86

The system must meet the following minimum hardware requirements:

- At least 512 MB of available physical memory (RAM)
- Swap space of 1024 MB or twice the size of RAM
- Oracle Audit Vault collection agent installation disk space requirements of 500 MB (includes 49MB temporary) of disk space for the Oracle Audit Vault collection agent software files in the Oracle Base

To ensure that the system meets these requirements, perform the following tasks.

1. To determine the physical RAM size, enter the following command:

   ```
   # grep MemTotal /proc/meminfo
   ```

   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. To determine the size of the configured swap space, enter the following command:

   ```
   # grep SwapTotal /proc/meminfo
   ```

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

3. To determine the available RAM and swap space, enter the following command:

   ```
   # free
   ```

   Note: Oracle recommends that you take multiple readings for the available RAM and swap space before determining a value. This is because the available RAM and swap space keep changing depending on the user interactions with the computer.

4. To determine the amount of disk space available in the `/tmp` directory, enter the following command:

   ```
   # df -k /tmp
   ```

   If there is less than 400 MB of disk space available in the `/tmp` directory, then complete one of the following steps:

   - Delete unnecessary files from the `/tmp` directory to meet the disk space requirement.
   - Set the `TEMP` and `TMPDIR` environment variables when setting the environment of the `oracle` users.

- Extend the file system that contains the `/tmp` directory. If necessary, contact your system administrator for information about extending file systems.

5. To determine the amount of free disk space on the system, enter the following command:

```
# df -k
```

6. To determine whether the system architecture can run the software, enter the following command:

```
# grep "model name" /proc/cpuinfo
```

Note: This command displays the processor type. Verify that the processor architecture matches the Oracle software release that you want to install. If you do not see the expected output, then you cannot install the software on this system.

2.1.3.2 Checking the Operating System Requirements for Linux x86

Depending on the products that you intend to install, verify that the software listed in Table 2–1 is installed on the system. The procedure following Table 2–1 describes how to verify whether these requirements are addressed.

Note: Oracle Universal Installer performs checks on your system to verify that it meets the listed requirements. To ensure that these checks pass, verify the requirements before you start Oracle Universal Installer.

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 versions might be certified after this guide is published, review the certification matrix on the My Oracle Support (formerly Oracle*MetaLink*) Web site for the most up-to-date list of certified hardware platforms and operating system versions. The My Oracle Support Web site is available at

http://metalink.oracle.com

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

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

Table 2–1 Operating System, Kernel Version, and Packages Requirements

Item	Requirement
Operating system	One of the following operating system versions: ■ Oracle Enterprise Linux 4/Oracle VM ■ Oracle Enterprise Linux 5/Oracle VM ■ Red Hat Enterprise Linux AS/ES 3.0 (Update 3 or later) ■ Red Hat Enterprise Linux AS/ES 4.0/Oracle VM ■ Red Hat Enterprise Linux AS/ES 5.0/Oracle VM ■ SUSE Linux Enterprise Server 9.0 ■ SUSE Linux Enterprise Server 10.0 ■ SUSE Linux Enterprise Server 11.0 The operating system requirements are the same as those for Oracle Database 10*g* release 2. If Oracle Database 10*g* release 2 is installed, then your system automatically meets these requirements.
Kernel version	The system must be running the following kernel version (or a later version): **Red Hat Enterprise Linux 3.0:** 2.4.21-27.EL **Note:** This is the default kernel version. **Red Hat Enterprise Linux 4.0, Oracle Enterprise Linux 4:** 2.6.9-5.0.5.EL **Red Hat Enterprise Linux 5.0, Oracle Enterprise Linux 5:** 2.6.9 **SUSE Linux Enterprise Server 9.0:** 2.6.5-7.97 **SUSE Linux Enterprise Server 10.0:** 2.6.9 **SUSE Linux Enterprise Server 11.0:** 2.6.27.19 The kernel version requirements are the same as those for Oracle Database 10*g* release 2. If Oracle Database 10*g* release 2 is installed, then your system automatically meets the kernel version requirements.

Table 2–1 (Cont.) Operating System, Kernel Version, and Packages Requirements

Item	Requirement
Packages	The following packages (or later versions) must be installed: **Red Hat Enterprise Linux 3.0:** make-3.79.1 binutils-2.14 gcc-3.2.3-34 glibc-2.3.2-95.20 compat-db-4.0.14-5 compat-gcc-7.3-2.96.128 compat-gcc-c++-7.3-2.96.128 compat-libstdc++-7.3-2.96.128 compat-libstdc++-devel-7.3-2.96.128 openmotif21-2.1.30-8 setarch-1.3-1 libaio-0.3.96 **Red Hat Enterprise Linux 4.0, Oracle Enterprise Linux 4:** binutils-2.15.92.0.2-13.EL4 compat-libstdc++296-2.96-132.7.2 compat-db-4.1.25-9 control-center-2.8.0-12 gcc-3.4.3-22.1.EL4 gcc-c++-3.4.3-22.1.EL4 glibc-2.3.4-2.9 glibc-common-2.3.4-2.9 gnome-libs-1.4.1.2.90-44.1 libstdc++-3.4.3-22.1 libstdc++-devel-3.4.3.22 make-3.80-5 pdksh-5.2.14-30 sysstat-5.0.5-1 xscreensaver-4.18-5.rhel4.2 setarch-1.6-1 **Red Hat Enterprise Linux 5.0, Oracle Enterprise Linux 5:** binutils-2.17 compat-libstdc++296-2.96-132.7.2 compat-db-4.1.25-9 control-center-2.8.0-12 gcc-4.1 gcc-c++-3.4.3-22.1.EL4 glibc-2.5-12 glibc-common-2.3.4-2.9 gnome-libs-1.4.1.2.90-44.1 libstdc++-3.4.3-22.1 libstdc++-devel-3.4.3.22 make-3.81 pdksh-5.2.14-30 sysstat-5.0.5-1 xscreensaver-4.18-5.rhel4.2 setarch-1.6-1 libaio-0.3.106

Table 2–1 (Cont.) Operating System, Kernel Version, and Packages Requirements

Item	Requirement
Packages	The following packages (or later versions) must be installed: **SUSE Linux Enterprise Server 9:** binutils-2.15.90.0.1.1-32.5 gcc-3.3.3-43.24 gcc-c++-3.3.3-43.24 glibc-2.3.3-98.28 gnome-libs-1.4.1.7-671.1 libstdc++-3.3.3-43.24 libstdc++-devel-3.3.3-43.24 make-3.80-184.1 pdksh-5.2.14-780.1 sysstat-5.0.1-35.1 xscreensaver-4.16-2.6 **SUSE Linux Enterprise Server 10:** binutils-2.16.91.0.5 compat-libstdc++-5.0.7 gcc-4.1.0 glibc-2.3.3-98.28 glibc-devel-2.4-31.2 ksh-93r-12.9 libaio-0.3.104 libaio-devel-0.3.104 libelf-0.8.5 libgcc-4.1.0 libstdc++-4.1.0 libstdc++-devel-4.1.0 make-3.80 sysstat-6.0.2 unixODBC-2.2.11 unixODBC-devel-2.2.11 **SUSE Linux Enterprise Server 11:** binutils-2.19 gcc-4.3 gcc-c++-4.3 glibc-2.9 glibc-devel-2.9 ksh-93t libaio-0.3.104 libaio-devel-0.3.104 libgcc43-4.3.3_20081022 libstdc++33-3.3.3 libstdc++43-4.3.3_20081022 libstdc++43-devel-4.3.3_20081022 libstdc++-devel-4.3 make-3.81 sysstat-8.1.5

To ensure that the system meets these requirements, perform the following tasks.

1. To determine which distribution and version of Linux is installed, enter the following command:

```
# cat /etc/issue
```

Note: Only the distributions and versions listed in the previous table are supported. Do not install the software on other versions of Linux.

2. To determine whether the required kernel is installed, enter the following command:

```
# uname -r
```

When you run this command on a Red Hat Enterprise Linux 3.0 system, the following sample output displays:

```
2.4.21-15.EL
```

In this example, the output shows the kernel version (`2.4.21`) and errata level (`15.EL`) on the system.

If the kernel version does not meet the requirement specified earlier in this section, then contact your operating system vendor for information about obtaining and installing kernel updates.

3. To determine whether the required packages are installed, enter commands similar to the following:

```
# rpm -q package_name
```

If a package is not installed, then install it from your Linux distribution media or download the required package version from the Web site of your Linux vendor.

2.1.4 Preinstallation Requirements for Linux x86-64

This section describes the following preinstallation tasks:

- Checking the Hardware Requirements for Linux x86-64
- Checking the Operating System Requirements for Linux x86-64

2.1.4.1 Checking the Hardware Requirements for Linux x86-64

The system must meet the following minimum hardware requirements:

- At least 512 MB of available physical memory (RAM)
- Swap space of 1024 MB or twice the size of RAM
- 400 MB of disk space in the `/tmp` directory
- 1 GB of disk space is required for the Oracle Audit Vault collection agent software.

To ensure that the system meets these requirements, perform the following tasks.

1. To determine the physical RAM size, enter the following command:

```
# grep MemTotal /proc/meminfo
```

If the size of the physical RAM is less than the required size, then you must install more memory before continuing.

2. To determine the size of the configured swap space, enter the following command:

```
# grep SwapTotal /proc/meminfo
```

If necessary, refer to the operating system documentation for information about how to configure additional swap space.

3. To determine the available RAM and swap space, enter the following command:

```
# free
```

> **Note:** Oracle recommends that you take multiple values for the available RAM and swap space before determining a value. This is because the available RAM and swap space keep changing depending on the user interactions with the computer.

4. To determine the amount of disk space available in the `/tmp` directory, enter the following command:

```
# df -k /tmp
```

If there is less than 400 MB of free disk space available in the `/tmp` directory, then complete one of the following steps:

- Delete unnecessary files from the `/tmp` directory to meet the disk space requirement.
- Set the `TEMP` and `TMPDIR` environment variables when setting the `oracle` user's environment.
- Extend the file system that contains the `/tmp` directory. If necessary, contact your system administrator for information about extending file systems.

5. To determine the amount of free disk space on the system, enter the following command:

```
# df -k
```

6. To determine whether the system architecture can run the software, enter the following command:

```
# grep "model name" /proc/cpuinfo
```

> **Note:** This command displays the processor type. Verify that the processor architecture matches the Oracle software release that you want to install. If you do not see the expected output, then you cannot install the software on this system.

2.1.4.2 Checking the Operating System Requirements for Linux x86-64

Depending on the products that you intend to install, verify that the following software is installed on the system. The procedure following the table describes how to verify whether these requirements are addressed.

Note: Oracle Universal Installer performs checks on your system to verify that it meets the listed requirements. To ensure that these checks pass, verify the requirements before you start Oracle Universal Installer.

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 versions might be certified after this guide is published, review the certification matrix on the My Oracle Support Web site for the most up-to-date list of certified hardware platforms and operating system versions. The My Oracle Support Web site is available at

http://metalink.oracle.com

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

Item	Requirement
Operating system	One of the following operating system versions: ■ Oracle Enterprise Linux 4.0/Oracle VM ■ Oracle Enterprise Linux 5.0/Oracle VM ■ Red Hat Enterprise Linux AS/ES 3.0 (Update 4 or later) ■ Red Hat Enterprise Linux AS/ES 4.0/Oracle VM (Update 1 or later) ■ Red Hat Enterprise Linux 5.0/Oracle VM ■ SUSE Linux Enterprise Server 9.0 with SP2 or later ■ SUSE Linux enterprise Server 10 ■ SUSE Linux enterprise Server 11

Item	Requirement
Kernel version	The system must be running the following kernel version (or a later version): **Red Hat Enterprise Linux 3.0:** 2.4.21-27.EL **Note:** This is the default kernel version. **Oracle Enterprise Linux 4.0, and Red Hat Enterprise Linux 4.0:** 2.6.9-11.EL **Oracle Enterprise Linux 5.0, and Red Hat Enterprise Linux 5.0:** 2.6.18-8 **SUSE Linux Enterprise Server 9.0:** 2.6.5-7.201 **SUSE Linux Enterprise Server 10:** 2.6.16.21 **SUSE Linux Enterprise Server 11:** 2.6.27.19 **Note**: For up-to-date certification or kernel version information please refer to the My Oracle Support Web site at: http://metalink.oracle.com

Item	Requirement
Packages	The following packages (or later versions) must be installed: **Red Hat Enterprise Linux 3.0:** make-3.79.1-17 compat-db 4.0.14-5.1 control-center-2.2.0.1-13 gcc-3.2.3-47 gcc-c++-3.2.3-47 gdb-6.1post-1.20040607.52 glibc-2.3.2-95.30 glibc-common-2.3.2-95.30 glibc-devel-2.3.2-95.30 glibc-devel-2.3.2-95.20 (32 bit) compat-db-4.0.14-5 compat-gcc-7.3-2.96.128 compat-gcc-c++-7.3-2.96.128 compat-libstdc++-7.3-2.96.128 compat-libstdc++-devel-7.3-2.96.128 gnome-libs-1.4.1.2.90-34.2 (32 bit) libstdc++-3.2.3-47 libstdc++-devel-3.2.3-47 openmotif-2.2.3-3.RHEL3 sysstat-5.0.5-5.rhel3 setarch-1.3-1 libaio-0.3.96-3 libaio-devel-0.3.96-3 **Oracle Enterprise Linux 4.0, and Red Hat Enterprise Linux 4.0:** binutils-2.15.92.0.2-10.EL4 compat-db-4.1.25-9 control-center-2.8.0-12 gcc-3.4.3-9.EL4 gcc-c++-3.4.3-9.EL4 glibc-2.3.4-2 glibc-common-2.3.4-2 gnome-libs-1.4.1.2.90-44.1 libstdc++-3.4.3-9.EL4 libstdc++-devel-3.4.3-9.EL4 make-3.80-5 pdksh-5.2.14-30 sysstat-5.0.5-1 xscreensaver-4.18-5.rhel4.2

Item	Requirement
Packages	**Oracle Enterprise Linux 5.0, and Red Hat Enterprise Linux 5.0:** gcc-c++-4.1.1-52.el5.x86_64.rpm libstdc++-devel-4.1.1-52.el5.x86_64.rpm glibc-headers-2.5-12.x86_64.rpm glibc-devel-2.5-12.x86_64.rpm libgomp-4.1.1-52.el5.x86_64.rpm gcc-4.1.1-52.el5.x86_64.rpm glibc-devel-2.5-12.i386.rpm compat-libstdc++-33-3.2.3-61.x86_64.rpm compat-libstdc++-33-3.2.3-61.i386.rpm compat-libstdc++-296-2.96-138.i386.rpm libXp-1.0.0-8.i386.rpm sysstat-7.0.0-3.el5.x86_64.rpm **Note**: For up-to-date packages information for Red Hat Enterprise Linux 5.0, and Oracle Enterprise Linux 5.0, please refer to the My Oracle Support Web site at: http://metalink.oracle.com **SUSE Linux Enterprise Server 9:** binutils-2.15.90.0.1.1-32.5 gcc-3.3.3-43.24 gcc-c++-3.3.3-43.24 glibc-2.3.3-98.28 gnome-libs-1.4.1.7-671.1 libstdc++-3.3.3-43.24 libstdc++-devel-3.3.3-43.24 make-3.80-184.1 pdksh-5.2.14-780.1 sysstat-5.0.1-35.1 xscreensaver-4.16-2.6

Item	Requirement
Packages	**SUSE Linux Enterprise Server 10:** binutils-2.16.91.0.5 compat-libstdc++-5.0.7-22.2 gcc-4.1.0 gcc-c++-4.1.0 glibc-2.4-31.2 glibc-32bit-2.4-31.2 (32 bit) glibc-devel-2.4 glibc-devel-32bit-2.4 (32 bit) libaio-0.3.104 libaio-32bit-0.3.104 (32 bit) libaio-devel-0.3.104 libelf-0.8.5 libgcc-4.1.0 libstdc++-4.1.0 libstdc++-devel-4.1.0 make-3.80 sysstat-6.0.2 **SUSE Linux Enterprise Server 11:** binutils-2.19 gcc-4.3 gcc-32bit-4.3 (32 bit) gcc-c++-4.3 glibc-2.9 glibc-32bit-2.9 (32 bit) glibc-devel-2.9 glibc-devel-32bit-2.9 (32 bit) ksh-93t libaio-0.3.104 libaio-32bit-0.3.104 (32 bit) libaio-devel-0.3.104 libaio-devel-32bit-0.3.104 (32 bit) libgcc43-4.3.3_20081022 libstdc++33-3.3.3 libstdc++33-32bit-3.3.3 (32 bit) libstdc++43-4.3.3_20081022 libstdc++43-32bit-4.3.3_20081022 (32 bit) libstdc++43-devel-4.3.3_20081022 libstdc++43-devel-32bit-4.3.3_20081022 (32 bit) libstdc++-devel-4.3 make-3.81 sysstat-8.1.5 **Note**: For up-to-date package information on SUSE Linux Enterprise Server 10 please refer to the Default RPMs on the My Oracle Support Web site at: http://metalink.oracle.com **Note**: The package requirements are the same as those for Oracle Database 10*g* release 2. If Oracle Database 10*g* release 2 is installed, then your system automatically meets the package requirements

To ensure that the system meets these requirements, perform the following tasks.

1. To determine which distribution and version of Linux is installed, enter the following command:

```
# cat /proc/version
```

Note: Only the distributions and versions listed in the previous table are supported. Do not install the software on other versions of Linux.

2. To determine whether the required kernel is installed, enter the following command:

   ```
   # uname -r
   ```

   When you run this command on a Red Hat Enterprise Linux 3.0 system, the following sample output displays:

   ```
   2.4.21-27.EL
   ```

   In this example, the output shows the kernel version (`2.4.27`) and errata level (`27.EL`) on the system.

   If the kernel version does not meet the requirement specified earlier in this section, then contact your operating system vendor for information about obtaining and installing kernel updates.

3. To determine whether the required packages are installed, enter commands similar to the following:

   ```
   # rpm -q package_name
   ```

   If a package is not installed, then install it from your Linux distribution media or download the required package version from the Web site of your Linux vendor.

2.1.5 Preinstallation Requirements for Solaris Operating System (SPARC 64-Bit)

This section describes the following preinstallation tasks:

- Checking the Hardware Requirements for Solaris Operating System (SPARC 64-Bit)
- Checking the Operating System Requirements for Solaris Operating Systems (SPARC 64-Bit)

2.1.5.1 Checking the Hardware Requirements for Solaris Operating System (SPARC 64-Bit)

The system must meet the following minimum hardware requirements:

- At least 512 MB of available physical memory (RAM)
- Swap space of 1024 MB or twice the size of RAM
- 400 MB of disk space in the `/tmp` directory
- 1 GB of disk space for the Oracle Audit Vault collection agent software

To ensure that the system meets these requirements, perform the following tasks.

1. To determine the physical RAM size, enter the following command:

   ```
   # /usr/sbin/prtconf | grep "Memory size"
   ```

If the size of the physical RAM is less than the required size, then you must install more memory before continuing.

2. To determine the size of the configured swap space, enter the following command:

```
# /usr/sbin/swap -s
```

If necessary, refer to the operating system documentation for information about how to configure additional swap space.

3. To determine the amount of disk space available in the `/tmp` directory, enter the following command:

```
# df -k /tmp
# df -h /tmp (on Solaris 10)
```

If there is less than 400 MB of free disk space available in the `/tmp` directory, then complete one of the following steps:

- Delete unnecessary files from the `/tmp` directory to meet the disk space requirement.
- Set the `TMP` and `TMPDIR` environment variables when setting the `oracle` user's environment.
- Extend the file system that contains the `/tmp` directory. If necessary, contact your system administrator for information about extending file systems.

4. To determine the amount of free disk space on the system, enter the following command:

```
# df -k
# df -h (on Solaris 10)
```

5. To determine whether the system architecture can run the software, enter the following command:

```
# /bin/isainfo -kv
```

Note: The following is the expected output of this command:

```
64-bit sparcv9 kernel modules
```

If you do not see the expected output, then you cannot install the software on this system.

2.1.5.2 Checking the Operating System Requirements for Solaris Operating Systems (SPARC 64-Bit)

Verify that the following software is installed on the system. The procedure following the table describes how to verify whether these requirements are addressed.

Note: Oracle Universal Installer performs checks on your system to verify that it meets the listed requirements. To ensure that these checks pass, verify the requirements before you start Oracle Universal Installer.

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 versions might be certified after this guide is published, review the certification matrix on the My Oracle Support Web site for the most up-to-date list of certified hardware platforms and operating system versions. The My Oracle Support Web site is available at

http://metalink.oracle.com

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

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

Item	Requirement
Operating system	One of the following 64-bit operating system versions: ■ Solaris 9 Update 6 or later ■ Solaris 10
Packages	SUNWarc SUNWbtool SUNWhea SUNWlibm SUNWlibms SUNWsprot SUNWtoo SUNWi1of SUNWi1cs SUNWi15cs SUNWxwfnt SUNWsprox **Note:** SUNWsprox package is not supported on Solaris 10. You may also require additional font packages for Java, depending on your locale. Refer to the following Web site for more information http://java.sun.com/j2se/1.4.2/font-requirements.html

To ensure that the system meets these requirements, perform the following tasks.

1. To determine which version of Solaris is installed, enter the following command:

```
# uname -r
5.9
```

In this example, the version shown is Solaris 9 (5.9). If necessary, refer to your operating system documentation for information about upgrading the operating system.

2. To determine whether the required packages are installed, enter a command similar to the following:

```
# pkginfo -i SUNWarc SUNWbtool SUNWhea SUNWlibm SUNWlibms SUNWsprot \
 SUNWsprox SUNWtoo SUNWi1of SUNWi1cs SUNWi15cs SUNWxwfnt
```

If a package is not installed, then install it. Refer to your operating system or software documentation for information about installing packages.

3. You can use the following command to verify the update level of the operating system:

```
$ cat /etc/release
Solaris 9 4/03 s9s_u3wos_
```

In this example, in the output of the command, _u3 refers to update 3 of Solaris 9.

In addition, you must verify that the following patches are installed on the system. The procedure following the table describes how to check these requirements.

Note: There may be more recent versions of the patches listed installed on the system. If a listed patch is not installed, then determine whether a more recent version is installed before installing the version listed.

Installation Type or Product	Requirement
All installations	**Patches for Solaris 9:** ■ 112233-11, SunOS 5.9: Kernel Patch ■ 111722-04, SunOS 5.9: Math Library (libm) patch The following additional patches are required for Numa Systems: ■ 115675-01, SunOS 5.9: liblgrp API ■ 113471-08, SunOS 5.9: Miscellaneous SunOS Commands Patch ■ 115675-01, SunOS 5.9: /usr/lib/liblgrp.so Patch

To determine whether an operating system patch is installed, enter a command similar to the following:

```
# /usr/sbin/patchadd -p | grep patch_number(without version number)
```

For example, to determine if any version of the 111713 patch is installed, use the following command:

```
# /usr/sbin/patchadd -p | grep 111713
```

If an operating system patch is not installed, then download it from the following Web site and install it:

http://sunsolve.sun.com

2.1.6 Preinstallation Requirements for HP-UX PA-RISC (64-Bit)

This section describes the following preinstallation tasks:

- Checking the Hardware Requirements for HP-UX PA-RISC (64-Bit)
- Checking the Operating System Requirements for HP-UX PA-RISC (64-Bit)

2.1.6.1 Checking the Hardware Requirements for HP-UX PA-RISC (64-Bit)

The system must meet the following minimum hardware requirements:

- At least 512 MB of available physical memory (RAM)
- Swap space of 1024 MB or twice the size of RAM
- 400 MB of disk space in the `/tmp` directory
- 1.5 GB of disk space for the Oracle Audit Vault collection agent software

To ensure that the system meets these requirements, perform the following tasks.

1. To determine the physical RAM size, enter the following command:

   ```
   # grep "Physical:" /var/adm/syslog/syslog.log
   ```

   If the size of the physical RAM is less than the required size, then you must install more memory before continuing.

2. To determine the size of the configured swap space, enter the following command:

   ```
   # /usr/sbin/swapinfo -a
   ```

   If necessary, refer to the operating system documentation for information about how to configure additional swap space.

3. To determine the amount of disk space available in the `/tmp` directory, enter the following command:

   ```
   # bdf /tmp
   ```

   If there is less than 400 MB of free disk space available in the `/tmp` directory, then complete one of the following steps:

   - Delete unnecessary files from the `/tmp` directory to meet the disk space requirement.
   - Set the `TMP` and `TMPDIR` environment variables when setting the `oracle` user's environment.
   - Extend the file system that contains the `/tmp` directory. If necessary, contact your system administrator for information about extending file systems.

4. To determine the amount of free disk space on the system, enter the following command:

   ```
   # bdf
   ```

5. To determine whether the system architecture can run the software, enter the following command:

   ```
   # /bin/getconf KERNEL_BITS
   ```

Note: The expected output of this command is 64. If you do not see the expected output, then you cannot install the software on this system.

2.1.6.2 Checking the Operating System Requirements for HP-UX PA-RISC (64-Bit)

Verify that the following software is installed on the system. The procedure following the table describes how to verify whether these requirements are addressed.

Note: Oracle Universal Installer performs checks on your system to verify that it meets the listed requirements. To ensure that these checks pass, verify the requirements before you start Oracle Universal Installer.

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 versions might be certified after this guide is published, review the certification matrix on the My Oracle Support Web site for the most up-to-date list of certified hardware platforms and operating system versions. The My Oracle Support Web site is available at

http://metalink.oracle.com

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

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

Item	Requirement
Operating system	Operating system version: HP-UX 11i V1 (11.11) PA-RISC HP-UX 11i v2 (11.23)
Oracle Spatial	HP-UX Developer's Toolkit - X11 and Imake: **Note:** This software is required only to build the sample programs.
PL/SQL native compilation	One of the following: HP C Compiler (B.11.11.12) GCC compiler GCC 3.4.0 (64-Bit)
Pro*C/C++, Oracle Call Interface, Oracle C++ Call Interface, Oracle XML Developer's Kit (XDK)	HP C/ANSI C Compiler (C.05.50) HP aC++ Compiler (C.05.50)

Item	Requirement
Oracle JDBC/OCI Drivers	You can use the following optional Java SDK versions with the Oracle JDBC/OCI drivers; however, they are not required for the installation: ■ Java SDK 1.3.1.16 with the JNDI extension ■ Java SDK 1.2.2.09 ■ Java SDK 1.4.2.08 ■ Java SDK 5.0 **Note:** Java SDK 1.4.2 is installed with this release.

To ensure that the system meets these requirements, perform the following tasks.

1. To determine which version of HP-UX is installed, enter the following command:

   ```
   # uname -a
   HP-UX hostname B.11.11 U 9000/800 109444686 unlimited-user license
   ```

   In this example, the version of HP-UX 11i is 11.11.

2. To determine whether a bundle, product, or file set is installed, enter a command similar to the following, where *level* is `bundle`, `product`, or `fileset`:

   ```
   # /usr/sbin/swlist -l level | more
   ```

   If a required bundle, product, or file set is not installed, then you must install it. Refer to your operating system or software documentation for information about installing products.

In addition, you must verify that the following patches are installed on the system. The procedure following the table describes how to check these requirements.

> **Note:** There may be more recent versions of the patches listed installed on the system. If a listed patch is not installed, then determine whether a more recent version is installed before installing the version listed.

Installation Type or Product	Requirement
All installations	Quality Pack bundle: HP-UX 11i Quality Pack (GOLDQPK11i), Dec 2004 or later: `GOLDQPK11i`
All installations	**Patches for HP-UX 11i V1 (11.11):** ■ PHNE_31097: ONC/NFS general release/performance patch ■ PHSS_31221: HP aC++ -AA run-time libraries (aCC A.03.60) **Patches for HP-UX 11i V2 (11.23):** ■ PHSS_31849: linker + fdp cumulative patch ■ PHSS_31852: aC++ Run time (PA A.03.61)

Installation Type or Product	Requirement
All installations	**Patches for JDK on HP-UX 11i V1 (11.11):** ■ PHSS_30970: ld(1) and linker tools cumulative patch **Note:** Refer to the following Web site for information about additional patches that may be required by JDK 1.4.2: http://www.hp.com/products1/unix/java/patches/index.html
PL/SQL native compilation, Pro*C/C++, Oracle Call Interface, Oracle C++ Call Interface, Oracle XML Developer's Kit (XDK)	**Patches for HP-UX 11i V1 (11.11):** ■ PHSS_32508: HP aC++ Compiler (A.03.63) ■ PHSS_32509: ANSI C Compiler B.11.11.12 cumulative patch ■ PHSS_32510: +O4/PBO Compiler B.11.11.12 cumulative patch **Patches for HP-UX 11i V2 (11.23):** ■ PHSS_32511: HP aC++ Compiler (A.03.63) ■ PHSS_32512: ANSI C Compiler B.11.11.12 cumulative patch ■ PHSS_32513: +O4/PBO Compiler B.11.11.12 cumulative patch

To ensure that the system meets these requirements, perform the following tasks.

1. On PA-RISC systems only, enter the following command to determine whether the HP-UX 11i Quality Pack is installed:

   ```
   # /usr/sbin/swlist -l bundle | grep GOLD
   ```

   If the Quality Pack is not installed or if the date is before June 2003, then download the latest Quality Pack from the following Web site and install it:

   http://h20293.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=QUALITYPACK&jumpid=reg_R1002_USEN

2. To determine whether a patch is installed, enter a command similar to the following:

   ```
   # /usr/sbin/swlist -l patch | grep PHSS_28880
   ```

   Alternatively, to list all installed patches, enter the following command:

   ```
   # /usr/sbin/swlist -l patch | more
   ```

   If a required patch is not installed, then download it from the following Web site and install it:

   http://itresourcecenter.hp.com

   If the Web site shows a more recent version of the patch, then download and install that version.

3. If you require a Fix Pack (formerly a CSD) for WebSphere MQ, then refer to the following Web site for download and installation information:

   http://www.ibm.com/software/integration/wmq/support/

Creating Required Symbolic Links

Note: This task is required only if the Motif 2.1 Development Environment package (X11MotifDevKit.MOTIF21-PRG) is not installed.

To enable you to successfully relink Oracle products after installing this software, enter the following commands to create the required X library symbolic links in the `/usr/lib` directory:

```
# cd /usr/lib
# ln -s libX11.3 libX11.sl
# ln -s libXIE.2 libXIE.sl
# ln -s libXext.3 libXext.sl
# ln -s libXhp11.3 libXhp11.sl
# ln -s libXi.3 libXi.sl
# ln -s libXm.4 libXm.sl
# ln -s libXp.2 libXp.sl
# ln -s libXt.3 libXt.sl
# ln -s libXtst.2 libXtst.sl
```

2.1.7 Preinstallation Requirements for AIX

This section describes the following preinstallation tasks:

- Checking the Hardware Requirements for AIX
- Checking the Operating System Requirements for AIX

2.1.7.1 Checking the Hardware Requirements for AIX

The system must meet the following minimum hardware requirements:

- At least 512 MB of available physical memory (RAM)
- Swap space of 1024 MB or twice the size of RAM
- 400 MB of disk space in the `/tmp` directory
- Up to 1.5 GB of disk space required for the Oracle Audit Vault collection agent software.

To ensure that the system meets these requirements, perform the following tasks.

1. To determine the physical RAM size, enter the following command:

   ```
   # /usr/sbin/lsattr -E -l sys0 -a realmem
   ```

   If the size of the physical RAM is less than the required size, then you must install more memory before continuing.

2. To determine the size of the configured swap space, enter the following command:

   ```
   # /usr/sbin/lsps -a
   ```

   If necessary, refer to the operating system documentation for information about how to configure additional swap space.

3. To determine the amount of disk space available in the `/tmp` directory, enter the following command:

   ```
   # df -k /tmp
   ```

If there is less than 400 MB of free disk space available in the `/tmp` directory, then complete one of the following steps:

- Delete unnecessary files from the `/tmp` directory to meet the disk space requirement.
- Set the `TMP` and `TMPDIR` environment variables when setting the `oracle` user's environment.
- Extend the file system that contains the `/tmp` directory. If necessary, contact your system administrator for information about extending file systems.

4. To determine the amount of free disk space on the system, enter the following command:

```
# df -k
```

5. To determine whether the system architecture can run the software, enter the following command:

```
# /usr/bin/getconf HARDWARE_BITMODE
64
```

Note: The expected output of this command is 64. If you do not see the expected output, then you cannot install the software on this system.

2.1.7.2 Checking the Operating System Requirements for AIX

Depending on the products that you intend to install, verify that the following software is installed on the system. The procedure following the table describes how to verify whether these requirements are addressed.

Note: Oracle Universal Installer performs checks on your system to verify that it meets the listed requirements. To ensure that these checks pass, verify the requirements before you start Oracle Universal Installer.

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 versions might be certified after this guide is published, review the certification matrix on the My Oracle Support Web site for the most up-to-date list of certified hardware platforms and operating system versions. The My Oracle Support Web site is available at

http://metalink.oracle.com

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

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

Item	Requirement
Operating system	The following operating system versions and maintenance level are required: AIX 5L version 5.2, Maintenance Level 04 or later AIX 5L version 5.3, Maintenance Level 02 or later AIX 5L version 6.1

Operating system file sets:	The following operating system file sets are required:
	`bos.adt.base`
	`bos.adt.lib`
	`bos.adt.libm`
	`bos.perf.libperfstat`
	`bos.perf.perfstat`
	`bos.perf.proctools`
	`xlC.aix50.rte:7.0.0.4 or later`
	`xlC.rte:7.0.0.1 or later`

PL/SQL native compilation	One of the following: ■ IBM XL C/C++ Enterprise Edition V7.0 for AIX PTF (7.0.0.2) ■ GCC 3.3.2 **Note:** If you do not install the IBM XL C/C++ Enterprise Edition V7.0 compiler, you must install the IBM XL C/C++ Enterprise Edition V7.0 for AIX Run-time Environment Component. The run-time environment file sets can be downloaded with no license requirements from `http://www-1.ibm.com/support/docview.wss?uid=swg24009788`

Pro*C/C++, Oracle Call Interface, Oracle C++ Call Interface, Oracle XML Developer's Kit (XDK)	■ May 2005 XL C/C++ Enterprise Edition V7.0 for AIX PTF (7.0.0.2)
	You can download this software from
	`http://www-1.ibm.com/support/docview.wss?uid=swg24009787`
	Note: If you do not install the IBM XL C/C++ Enterprise Edition V7.0 compiler, you must install the IBM XL C/C++ Enterprise Edition V7.0 for AIX Run-time Environment Component. The run-time environment file sets can be downloaded with no license requirements from
	`http://www-1.ibm.com/support/docview.wss?uid=swg24009788`

Oracle JDBC/OCI Drivers	You can use the following optional IBM JDK versions with the Oracle JDBC/OCI drivers; however, they are not required for the installation: ■ JDK 1.4.2 (64-bit) ■ JDK 1.3.1.11 (32-bit) ■ JDK 1.2.2.18 **Note:** IBM JDK 1.4.2 (32-bit) is installed with this release.

To ensure that the system meets these requirements, perform the following tasks.

1. To determine the version of AIX installed, enter the following command:

```
# oslevel -r
```

If the operating system version is lower than AIX 5.2.0.0 Maintenance Level 1 (5200-01), then upgrade your operating system to this level. AIX 5L version 5.2 maintenance packages are available at

http://www-912.ibm.com/eserver/support/fixes/

2. To determine whether the required file sets are installed and committed, enter a command similar to the following:

```
# lslpp -l bos.adt.base bos.adt.lib bos.adt.libm bos.perf.perfstat \
 bos.perf.libperfstat bos.perf.proctools
```

If a file set is not installed and committed, then install it. Refer to your operating system or software documentation for information about installing file sets.

In addition, you must verify that the following patches are installed on the system. The procedure following the table describes how to check these requirements.

Note: There may be more recent versions of the patches listed installed on the system. If a listed patch is not installed, then determine whether a more recent version is installed before installing the version listed.

Installation Type or Product	Requirement
All installations	Authorized Problem Analysis Reports (APARs) for AIX 5L v5.2 ML 04: ■ IY63133: large percentage of CPU time spent in ldata_balance routine ■ IY64978: deadlock with concurrent renaming and unlinking under JFS ■ IY63366: dlsym returns null even for valid symbol in AIX520 ML-4 ■ IY64691: chvg -b can cause corruption and crash ■ IY64737: AIO can hang in knotunlock ■ IY65001: mklvcopy on a striped lv is failing to update lvcb
All installations	Authorized Problem Analysis Reports (APARs) for AIX 5L v5.3 ML 02: ■ IY58143: REQUIRED UPDATE FOR AIX 5.3 ■ IY59386: libdepend.mk files are all empty ■ IY60930: Unable to delete network routes ■ IY66513: LDR_CNTRL turns on undesirable option when initialized with incorrect value ■ IY70159: krtl relocation problem ■ IY68989: eFix for write to mapped space hangs
PL/SQL native compilation, Pro*C/C++, Oracle Call Interface, Oracle C++ Call Interface, Oracle XML Developer's Kit (XDK)	May 2005 XL C/C++ Enterprise Edition V7.0 for AIX PTF (7.0.0.2): ■ IY64361: Exception in putdiag_no_handler() when -O is specified ■ IY65361: May 2005 XL C Enterprise Edition V7.0 for AIX PTF ■ IY65362: MAY 2005 XL C/C++ Enterprise Edition V7 for AIX

Installation Type or Product	Requirement
Oracle JDBC/OCI Drivers	**Note:** These APARs are required only if you are using the associated JDK version. APAR required for JDK 1.4.2 (64-bit): ■ IY63533: DK 1.4.2 64-bit SR1 caix64142-20040917 APARs required for JDK 1.3.1.11 (32-bit): ■ IY58350: SDK 1.3.1 32-BIT SR7P: CA131IFX-20040721A ■ IY65305: JAVA142 32-BIT PTF: CA142IFX-20041203 APAR required for JDK 1.2.2.18: ■ IY40034: SDK 1.2.2 PTF: CA122-20030115

To ensure that the system meets these requirements, perform the following tasks.

1. To determine whether an APAR is installed, enter a command similar to the following:

```
# /usr/sbin/instfix -i -k "IY63133 IY64978 IY63366 IY64691 IY65001 IY64737 \
  IY64361 IY65305 IY58350 IY63533"
```

   If an APAR is not installed, then download it from the following Web site and install it:

   http://www-912.ibm.com/eserver/support/fixes/

2. If you require a Fix pack (formerly CSD) for WebSphere MQ, then refer to the following Web site for download and installation information:

   http://www.ibm.com/software/integration/wmq/support/

2.1.8 Preinstallation Requirements for HP-UX Itanium

This section describes the following preinstallation tasks:

- Checking the Hardware Requirements for HP-UX Itanium
- Checking the Operating System Requirements for HP-UX Itanium

2.1.8.1 Checking the Hardware Requirements for HP-UX Itanium

The system must meet the following minimum hardware requirements:

- At least 512 MB of available physical memory (RAM)
- Swap space of 1024 MB or twice the size of RAM
- 400 MB of disk space in the `/tmp` directory
- 1.5 GB of disk space for the Oracle Audit Vault collection agent software

To ensure that the system meets these requirements, perform the following tasks.

1. To determine the physical RAM size, enter the following command:

```
# /usr/contrib/bin/machinfo  | grep -i Memory
```

   If the size of the physical RAM is less than the required size, then you must install more memory before continuing.

2. To determine the size of the configured swap space, enter the following command:

```
# /usr/sbin/swapinfo -a
```

If necessary, refer to the operating system documentation for information about how to configure additional swap space.

3. To determine the amount of disk space available in the `/tmp` directory, enter the following command:

```
# bdf /tmp
```

If there is less than 400 MB of free disk space available in the `/tmp` directory, then complete one of the following steps:

- Delete unnecessary files from the `/tmp` directory to meet the disk space requirement.
- Set the `TMP` and `TMPDIR` environment variables when setting the `oracle` user's environment.
- Extend the file system that contains the `/tmp` directory. If necessary, contact your system administrator for information about extending file systems.

4. To determine the amount of free disk space on the system, enter the following command:

```
# bdf
```

5. To determine whether the system architecture can run the software, enter the following command:

```
# /bin/getconf KERNEL_BITS
```

Note: The expected output of this command is 64. If you do not see the expected output, then you cannot install the software on this system.

2.1.8.2 Checking the Operating System Requirements for HP-UX Itanium

Verify that the following software, or a later version, is installed on the system. The procedure following the table describes how to verify whether these requirements are addressed.

Note: Oracle Universal Installer performs checks on your system to verify that it meets the listed requirements. To ensure that these checks pass, verify the requirements before you start Oracle Universal Installer.

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 versions might be certified after this guide is published, review the certification matrix on the My Oracle Support Web site for the most up-to-date list of certified hardware platforms and operating system versions. The My Oracle Support Web site is available at

http://metalink.oracle.com

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

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

Item	Requirement
Operating system	Operating system version: HP-UX 11i v2 (11.23) HP-UX 11i v3 (11.31)
PL/SQL native compilation	One of the following: ■ HP C/ANSI C Compiler (A.06.00) ■ GCC compiler GCC 3.4.2 **Note**: The GCC compiler is supported only for PL/SQL native compilation.
Pro*C/C++, Oracle Call Interface, Oracle C++ Call Interface, Oracle XML Developer's Kit (XDK)	**HP-UX 11i v2 (11.23)** ■ HP C/ANSI C Compiler (A.06.00) ■ HP aC++ Compiler (A.06.00) **HP-UX 11i v3 (11.31)** ■ HP C/ANSI C Compiler (A.06.14) ■ HP aC++ Compiler (A.06.14)
Oracle JDBC/OCI Drivers	You can use the following optional Java SDK versions with the Oracle JDBC/OCI drivers; however, they are not required for the installation: ■ HP JDK 1.5.0 (5.0) ■ HP JDK 1.4.2.07 ■ HP JDK 1.3.1.16 **Note:** Java SDK 1.4.2_07 is installed with this release.

To ensure that the system meets these requirements, perform the following tasks.

1. To determine which version of HP-UX is installed, enter the following command:

```
# uname -a
```

```
HP-UX hostname B.11.23 ia64 109444686 unlimited-user license
```

In this example, the version of HP-UX 11i is 11.23.

2. To determine whether a bundle, product, or file set is installed, enter a command similar to the following, where *level* is `bundle`, `product`, or `fileset`:

```
# /usr/sbin/swlist -l level | more
```

If a required bundle, product, or file set is not installed, then you must install it. Refer to your operating system or software documentation for information about installing products.

In addition, you must verify that the following patches, or their later versions, are installed on the system. The procedure following the table describes how to check these requirements.

> **Note:** There may be more recent versions of the patches listed installed on the system. If a listed patch is not installed, then determine whether a more recent version is installed before installing the version listed.

Installation Type or Product	Requirement
All installations	The following operating system patches are required for **HP-UX 11i v2 (11.23)**: ■ BUNDLE11i B.11.23.0409.3: Patch Bundle for HP-UX 11i V2 **Note:** You must have the August 2004 version of BUNDLE11i B.11.23.0408.1 for HP-UX 11i v2 on your system prior to updating to the HP-UX 11i v2 September 2004 or later release. ■ PHCO 32426: Reboot(1M) cumulative patch ■ PHKL 32646: wsio.h header file patch ■ PHKL 32632: Message Signaled Interrupts (MSI and MSI-X) ■ PHKL 32645: SIO (I/O) subsystem MSI/MSI-X/WC Patch ■ PHKL 33552: VM Copy on write data corruption fix ■ PHSS_31850: 11.23 assembler patch ■ PHSS_31851: 11.23 Integrity Unwind Library ■ PHSS_31854: 11.23 milli cumulative patch ■ PHSS_31855: 11.23 a C++ Run time (IA: A.05.60, PA A.03.60) ■ PHSS_33275: s700_800 11.23 linker + fdp cumulative patch ■ PHSS_33276: 11.23 Math Library Cumulative Patch The following operating system patch is required for **HP-UX 11i v3 (11.31)**: ■ PHKL_35936: 11.31 call to read(2) or write(2) may incorrectly return -1 **Note**: For up-to-date certification information for HP-UX 11i v3 (11.31), please refer to the My Oracle Support Web site at: http://metalink.oracle.com

Installation Type or Product	Requirement
All installations	The following JDK patches: ▪ PHCO_31553: s700_800 11.23 pthread library cumulative patch ▪ PHKL_31500: s700_800 11.23 sept04 base patch ▪ PHSS_32213: s700_800 11.23 aries cumulative patch **Note:** For information about additional patches that may be required by JDK 1.4.2, see http://www.hp.com/products1/unix/java/patches/index.html
PL/SQL native compilation, Pro*C/C++, Oracle Call Interface, Oracle C++ Call Interface, Oracle XML Developer's Kit (XDK)	The following C and C++ patches: ▪ PHSS_33278: aC++ Compiler ▪ PHSS_33279: aC++ Compiler ▪ PHSS_33277: HP C Compiler ▪ PHSS_33279: HP C Compiler

To determine whether a patch is installed, enter a command similar to the following:

```
# /usr/sbin/swlist -l patch | grep PHSS_33279
```

Alternatively, to list all installed patches, enter the following command:

```
# /usr/sbin/swlist -l patch | more
```

If a required patch is not installed, then download it from the following Web site and install it:

http://itresourcecenter.hp.com

If the Web site shows a more recent version of the patch, then download and install that version.

To ignore the system prerequisite test during installation use the following flag along with `runInstaller`:

```
-ignoreSysPreReqs
```

Kernel Parameters

The following Kernel Parameters are obsolete on **HP-UX 11i v3 (11.31)**:

```
maxswapchunks
msgmap
ncallout
semmap
vx_ncsize
```

Creating Required Symbolic Links

Note: This task is required only if the Motif 2.1 Development Environment package (X11MotifDevKit.MOTIF21-PRG) is not installed.

To enable you to successfully relink Oracle products after installing this software, enter the following commands to create the required X library symbolic links in the `/usr/lib` directory:

```
# cd /usr/lib
# ln -s libX11.3 libX11.sl
# ln -s libXIE.2 libXIE.sl
# ln -s libXext.3 libXext.sl
# ln -s libXhp11.3 libXhp11.sl
# ln -s libXi.3 libXi.sl
# ln -s libXm.4 libXm.sl
# ln -s libXp.2 libXp.sl
# ln -s libXt.3 libXt.sl
# ln -s libXtst.2 libXtst.sl
```

2.1.9 Creating the Required Operating System Group and User

Depending on whether you are installing Oracle software for the first time on this system and on the products that you are installing, you may need to create the following operating system group and user:

- The Oracle Inventory group (`oinstall`)

  You must create this group the first time you install Oracle software on the system. The usual name chosen for this group is `oinstall`. This group owns the Oracle inventory, which is a catalog of all Oracle software installed on the system.

  Note: If Oracle software is already installed on the system, then the existing Oracle Inventory group must be the primary group of the operating system user that you use to install new Oracle software. The following sections describe how to identify an existing Oracle Inventory group.

- The Oracle software owner user (typically, `oracle`)

  You must create this user the first time you install Oracle software on the system. This user owns all software installed during the installation. This user must have the Oracle Inventory group as its primary group.

  Note: In Oracle documentation, this user is referred to as the `oracle` user.

All installations of Oracle software on the system require a single Oracle Inventory group. After the first installation of Oracle software, you must use the same Oracle Inventory group for all subsequent Oracle software installations on that system. However, you can choose to create different Oracle software owner users for separate installations. By using different groups for different installations, members of these different groups have DBA privileges only on the associated databases, rather than on all databases on the system.

Note: The following topics describe how to create local users and groups. As an alternative to creating local users and groups, you could create the appropriate users and groups in a directory service, for example, Network Information Services (NIS). For information about using directory services, contact your system administrator or see your operating system documentation.

The following topics describe how to create the required operating system users and groups:

- Creating the Oracle Inventory Group
- Creating the Oracle Software Owner User

2.1.9.1 Creating the Oracle Inventory Group

You must create the Oracle Inventory group if it does not already exist. The following topics describe how to determine the Oracle Inventory group name, if it exists, and how to create it if necessary.

Determining Whether the Oracle Inventory Group Exists

When you install Oracle software on the system for the first time, Oracle Universal Installer creates the `oraInst.loc` file. This file identifies the name of the Oracle Inventory group and the path of the Oracle Inventory directory.

To determine whether the Oracle Inventory group exists, enter the following command:

For Linux x86

```
# more /etc/oraInst.loc
```

For SPARC (64-Bit)

```
#more /var/opt/oracle/oraInst.loc
```

For HP-UX PA-RISC (64-Bit)

```
#more /var/opt/oracle/oraInst.loc
```

For AIX Systems

```
# more /etc/oraInst.loc
```

For Linux x86-64

```
# more /etc/oraInst.loc
```

For HP-UX Itanium

```
#more /var/opt/oracle/oraInst.loc
```

If the output of this command shows the `oinstall` group name, then the group already exists.

If the `oraInst.loc` file exists, then the output from this command is similar to the following:

```
inventory_loc=/u01/app/oracle/oraInventory
inst_group=oinstall
```

The `inst_group` parameter shows the name of the Oracle Inventory group, `oinstall`.

Creating the Oracle Inventory Group on All Systems Except AIX Systems

If the `oraInst.loc` file does not exist, then create the Oracle Inventory group by entering the following command:

```
# /usr/sbin/groupadd oinstall
```

Creating the Oracle Inventory Group on AIX Systems

If the `oraInst.loc` file does not exist, then create the Oracle Inventory group by using the following procedure:

1. Enter the following command:

   ```
   # smit security
   ```

2. Choose the appropriate menu items to create the `oinstall` group.
3. Press **F10** to exit.

2.1.9.2 Creating the Oracle Software Owner User

You must create an Oracle software owner user in the following circumstances:

- If an Oracle software owner user does not exist, for example, if this is the first installation of Oracle software on the system
- If an Oracle software owner user exists, but you want to use a different operating system user, with a different group membership, to give database administrative privileges to those groups in a new Oracle installation

2.1.9.2.1 Determining Whether an Oracle Software Owner User Exists To determine whether an Oracle software owner user named `oracle` exists, enter the following command:

For Linux x86

```
# id oracle
```

For SPARC (64-Bit)

```
# id -a oracle
```

For HP-UX PA-RISC (64-Bit)

```
# id oracle
```

For AIX Systems

```
# id oracle
```

For Linux x86-64

```
# id oracle
```

For HP-UX Itanium

```
# id oracle
```

If the `oracle` user exists, then the output from this command is similar to the following:

```
uid=440(oracle) gid=200(oinstall) groups=201(dba),202(oper)
```

If the user exists, then determine whether you want to use the existing user or create another `oracle` user. If you want to use the existing user, then ensure that the primary group of the user is the Oracle Inventory group.

> **Note:** If necessary, contact your system administrator before using or modifying an existing user.

Refer to one of the following sections for more information:

- To modify an existing user, see Section 2.1.9.2.3.
- To create a user, refer to the following section.

2.1.9.2.2 Creating an Oracle Software Owner User If the Oracle software owner user does not exist or if you need a new Oracle software owner user, then create it as follows. In the following procedure, use the user name `oracle` unless a user with that name already exists.

1. To create the `oracle` user, enter a command similar to the following:

   ```
   # /usr/sbin/useradd -g oinstall oracle
   ```

   In this command:

   The `-g` option specifies the primary group, which must be the Oracle Inventory group, for example, `oinstall`.

2. Set the password of the `oracle` user:

   ```
   # passwd oracle
   ```

See Section 2.1.9.3 to continue.

2.1.9.2.3 Modifying an Oracle Software Owner User If the `oracle` user exists, but its primary group is not `oinstall` or it is not a member of the appropriate OSDBA or OSOPER groups, then enter a command similar to the following to modify it. Specify the primary group using the `-g` option and any required secondary group using the `-G` option:

```
# /usr/sbin/usermod -g oinstall oracle
```

See Section 2.1.9.3 to continue.

2.1.9.2.4 Creating an Oracle Software Owner User for AIX Systems If the Oracle software owner user does not exist or if you require a new Oracle software owner user, then create it as follows. In the following procedure, use the user name `oracle` unless a user with that name already exists.

1. Enter the following command:

   ```
   # smit security
   ```

2. Choose the appropriate menu items to create the `oracle` user, specifying the following information:

   In the **Primary GROUP** field, specify the Oracle Inventory group, for example `oinstall`.

3. Press **F10** to exit.

4. Set the password of the `oracle` user:

```
# passwd oracle
```

See Section 2.1.9.3 to continue.

2.1.9.2.5 Modifying an Oracle Software Owner User on AIX Systems If the `oracle` user exists, but its primary group is not `oinstall`, then you can modify it as follows:

1. Enter the following command:

```
# smit security
```

2. Choose the appropriate menu items to modify the `oracle` user.
3. In the **Primary GROUP** field, specify the Oracle Inventory group, for example `oinstall`.
4. Press **F10** to exit.

See Section 2.1.9.3 to continue.

2.1.9.3 Verifying That the User nobody Exists

Before installing the software, perform the following procedure to verify that the `nobody` user exists on the system:

1. To determine whether the user exists, enter the following command:

```
# id nobody
```

   If this command displays information about the `nobody` user, then you do not have to create that user.

2. If the `nobody` user does not exist, then enter the following command to create it:

```
# /usr/sbin/useradd nobody
```

   For AIX Systems

```
# smit security
```

   Specify the appropriate options to create an unprivileged `nobody` user, then press **F10** to exit.

2.1.10 Identifying the Required Software Directories

You must identify or create the following directories for the Oracle software:

- Oracle Base Directory
- Oracle Inventory Directory
- Oracle Home Directory

2.1.10.1 Oracle Base Directory

The Oracle base directory is a top-level directory for Oracle software installations. On Linux and UNIX-based systems, the Optimal Flexible Architecture (OFA) guidelines recommend that you use a path similar to the following for the Oracle base directory:

/mount_point/app/*oracle_sw_owner*

In this example:

- *mount_point* is the mount point directory for the file system that will contain the Oracle software.

  The examples in this guide use /u01 for the mount point directory. However, you could choose another mount point directory, such as /oracle or /opt/oracle.

- *oracle_sw_owner* is the operating system user name of the Oracle software owner, for example, oracle.

You can use the same Oracle base directory for more than one installation, or you can create separate Oracle base directories for different installations. If different operating system users install Oracle software on the same system, then each user must create a separate Oracle base directory. The following example Oracle base directories could all exist on the same system:

```
/u01/app/oracle
/u01/app/orauser
/opt/oracle/app/oracle
```

The following sections describe how to identify existing Oracle base directories that may be suitable for your installation and how to create an Oracle base directory if necessary.

Regardless of whether you create an Oracle base directory or decide to use an existing one, you must set the ORACLE_BASE environment variable to specify the full path to this directory.

2.1.10.2 Oracle Inventory Directory

The Oracle Inventory directory (oraInventory) stores an inventory of all software installed on the system. It is required by, and shared by, all Oracle software installations on a single system. The first time you install Oracle software on a system, Oracle Universal Installer prompts you to specify the path to this directory. Oracle recommends that you choose the following path:

```
oracle_base/oraInventory
```

Oracle Universal Installer creates the directory that you specify and sets the correct owner, group, and permissions for it. You do not need to create it.

Note: All Oracle software installations rely on this directory. Ensure that you back it up regularly.

Do not delete this directory unless you have completely removed all Oracle software from the system.

2.1.10.3 Oracle Home Directory

The Oracle home directory is the directory where you choose to install the software for a particular Oracle product. You must install different Oracle products, or different releases of the same Oracle product, in separate Oracle home directories. When you run Oracle Universal Installer, it prompts you to specify the path to this directory and a name that identifies it. The directory that you specify must be a subdirectory of the Oracle base directory. Oracle recommends that you specify a path similar to the following for the Oracle home directory:

```
oracle_base/product/10.2.3/av_1
```

Oracle Universal Installer creates the directory path that you specify under the Oracle base directory. It also sets the correct owner, group, and permissions on it. You do not need to create this directory.

2.1.11 Identifying or Creating an Oracle Base Directory

Before starting the installation, you must either identify an existing Oracle base directory or if required, create one. This section contains the following topics:

- Identifying an Existing Oracle Base Directory
- Creating an Oracle Base Directory

> **Note:** You can choose to create an Oracle base directory, even if other Oracle base directories exist on the system.

2.1.11.1 Identifying an Existing Oracle Base Directory

Existing Oracle base directories may not have paths that comply with Optimal Flexible Architecture (OFA) guidelines. However, if you identify an existing Oracle Inventory directory or existing Oracle home directories, then you can usually identify the Oracle base directories, as follows:

- To identify an existing Oracle Inventory directory

  Enter the following command to view the contents of the `oraInst.loc` file:

  For Linux x86

  ```
  # more /etc/oraInst.loc
  ```

  For SPARC (64-Bit)

  ```
  # more /var/opt/oracle/oraInst.loc
  ```

  For HP-UX PA-RISC (64-Bit)

  ```
  # more /var/opt/oracle/oraInst.loc
  ```

  For AIX Systems

  ```
  # more /etc/oraInst.loc
  ```

  For Linux x86-64

  ```
  # more /etc/oraInst.loc
  ```

  For HP-UX Itanium

  ```
  # more /var/opt/oracle/oraInst.loc
  ```

  If the `oraInst.loc` file exists, then the output from this command is similar to the following:

  ```
  inventory_loc=/u01/app/oracle/oraInventory
  inst_group=oinstall
  ```

  The `inventory_loc` parameter identifies the Oracle Inventory directory (`oraInventory`). The parent directory of the `oraInventory` directory is typically an Oracle base directory. In the previous example, `/u01/app/oracle` is an Oracle base directory.

- To identify existing Oracle home directories

  Enter the following command to view the contents of the `oratab` file:

  For Linux x86

  ```
  # more /etc/oratab
  ```

  For SPARC (64-Bit)

  ```
  # more /var/opt/oracle/oratab
  ```

  For HP-UX PA-RISC (64-Bit)

  ```
  # more /etc/oratab
  ```

  For AIX Systems

  ```
  # more /etc/oratab
  ```

  For Linux x86-64

  ```
  # more /etc/oratab
  ```

  For HP-UX Itanium

  ```
  # more /etc/oratab
  ```

  If the `oratab` file exists, then it contains lines similar to the following:

  ```
  *:/u03/app/oracle/product/1.0.0/db_1:N
  *:/opt/orauser/infra_904:N
  *:/oracle/9.2.0:N
  ```

  The directory paths you specify on each line identify Oracle base directories. Directory paths that end with the user name of the Oracle software owner that you want to use are valid choices for an Oracle base directory. If you intend to use the `oracle` user to install the software, then you could choose one of the following directories from the previous example:

  ```
  /u03/app/oracle
  /oracle
  ```

  Note: If possible, choose a directory path similar to the first (`/u03/app/oracle`). This path complies with the OFA guidelines.

Before deciding to use an existing Oracle base directory for this installation, ensure that it satisfies the following conditions:

- It should not be on the same file system as the operating system.
- It must have sufficient free disk space as described in the hardware requirements section of each respective platform.

  To determine the free disk space on the file system where the Oracle base directory is located, enter the following command:

  For Linux x86

  ```
  # df -h oracle_base_path
  ```

  For SPARC (64-Bit)

  ```
  # df -k oracle_base_path
  ```

For HP-UX PA-RISC (64-Bit)

```
# df -k oracle_base_path
```

For AIX Systems

```
# df -k oracle_base_path
```

For Linux x86-64

```
# df -h oracle_base_path
```

For HP-UX Itanium

```
# bdf oracle_base_path
```

If an Oracle base directory does not exist on the system or if you want to create an Oracle base directory, then complete the steps in Section 2.1.11.2.

2.1.11.2 Creating an Oracle Base Directory

Before you create an Oracle base directory, you must identify an appropriate file system with sufficient free disk space, as indicated in Section 2.1.3.1.

To identify an appropriate file system:

1. Use the `df -k` or `bdf` command to determine the free disk space on each mounted file system.
2. From the display, identify a file system that has appropriate free space.
3. Note the name of the mount point directory for the file system that you identified.

To create the Oracle base directory and specify the correct owner, group, and permissions for it:

1. Enter commands similar to the following to create the recommended subdirectories in the mount point directory that you identified, and set the appropriate owner, group, and permissions on them:

   ```
   # mkdir -p /mount_point/app/oracle_sw_owner
   # chown -R oracle:oinstall /mount_point/app/oracle_sw_owner
   # chmod -R 775 /mount_point/app/oracle_sw_owner
   ```

   For example, if the mount point you identify is `/u01` and `oracle` is the user name of the Oracle software owner, then the recommended Oracle base directory path is:

   ```
   /u01/app/oracle
   ```

2. When you configure the environment of the `oracle` user (see Section 2.1.9), set the `ORACLE_BASE` environment variable to specify the Oracle base directory that you created.

2.1.12 Setting the DISPLAY Environment Variable

Before you begin the Oracle Audit Vault collection agent installation, you should check to see that the `DISPLAY` environment variable is set to a proper value. For example, for the Bourne, Bash, or Korn shell, you would enter the following commands, where `myhost.us.example.com` is your host name:

```
$ DISPLAY=myhost.us.example.com:1.0
$ export DISPLAY
```

For example, for the C shell, you would enter the following command, where `myhost.us.example.com` is your host name:

```
% setenv DISPLAY myhost.us.example.com:1.0
```

2.1.13 Setting the Correct Locale

Ensure the `NLS_LANG` environment variable is not set.

For example, for C shell:

```
unsetenv NLS_LANG
```

For example, for Bourne, Bash, or Korn shells:

```
unset NLS_LANG
```

2.2 Preinstallation Requirements for the Microsoft Windows 32-Bit Platform

This section describes the following preinstallation tasks:

- Becoming Familiar with the Features of Oracle Audit Vault
- Understanding Installation Differences Between the Microsoft Windows and UNIX Systems
- Checking the Hardware Requirements for the Microsoft Windows 32-Bit Platform
- Checking the Software Requirements for the Microsoft Windows 32-Bit Platform

2.2.1 Becoming Familiar with the Features of Oracle Audit Vault

Before you plan the installation process, you need to become familiar with the features of Oracle Audit Vault. *Oracle Audit Vault Administrator's Guide* discusses the basic features of Oracle Audit Vault.

2.2.2 Understanding Installation Differences Between the Microsoft Windows and UNIX Systems

If you are experienced with installing Oracle components in UNIX environments, note that many manual setup tasks required on UNIX are not required on Microsoft Windows. The key differences between UNIX and Microsoft Windows installations are:

- Startup and shutdown services

  With Microsoft Windows, Oracle Universal Installer creates and sets startup and shutdown services at installation time. With UNIX systems, administrators are responsible for creating these services.

- Environment variables

  With Microsoft Windows, Oracle Universal Installer sets environment variables such as `PATH`, `ORACLE_BASE`, `ORACLE_HOME`, and `ORACLE_SID` in the registry. In UNIX systems, you must manually set these environment variables.

- Account for running Oracle Universal Installer

With Microsoft Windows, you log in with Administrator privileges. You do not need a separate account. With UNIX systems, you must create this account manually.

See Also: "Appendix Information about Oracle Database Microsoft Windows/UNIX Differences in *Oracle Database Platform Guide for Microsoft Windows (32-Bit)*

2.2.3 Checking the Hardware Requirements for the Microsoft Windows 32-Bit Platform

Table 2–2 lists the required hardware components for Oracle Audit Vault collection agent.

Table 2–2 Hardware Requirements

Requirement	Minimum Value
Physical memory (RAM)	128 MB minimum, 512 MB recommended
Virtual memory	Double the amount of RAM
Hard disk space	797 MB (includes 167 MB temporary)
Video adapter	256 colors
Processor	550 MHz minimum

2.2.3.1 Hard Disk Space Requirements

This section lists system requirements for Microsoft Windows platforms that use the NT File System (NTFS) file systems. The underlying file system must be 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 the space required for the size of compressed files that are expanded on the hard drive.

The hard disk requirements for Oracle Database Client components include space required to install Java Run-time Environment (JRE) and Oracle Universal Installer on the partition where the operating system is installed. If sufficient space is not detected, then the installation fails and an error message appears.

Table 2–3 lists the space requirements for NTFS.

Table 2–3 Disk Space Requirements for NTFS

TEMP Space	Oracle Home	Total
167 MB	630 MB	797 MB

See Also: "NTFS File System and Microsoft Windows Registry Permissions" in *Oracle Database Platform Guide for Microsoft Windows (32-Bit)*

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

1. Determine the physical RAM size. For a computer using Microsoft Windows 2003, for example, open **System** in the Microsoft Windows Control Panel and select 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 Microsoft Windows 2003, for example, open **System** in the Control Panel, select the **Advanced** tab, and click **Settings** in the **Performance** section. Then select 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 Microsoft Windows 2003, for example, open **My Computer**, right-click the drive where the Oracle software is to be installed, and choose **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.

   If less than 200 MB of disk space is available in the `temp` directory, then delete all unnecessary files. If the `temp` disk space is still less than 200 MB, then set the `TEMP` or `TMP` environment variable to point to a different hard drive. For a computer using Microsoft Windows 2003, for example, open **System** in the Control Panel, select the **Advanced** tab, and click **Environment Variables**.

2.2.4 Checking the Software Requirements for the Microsoft Windows 32-Bit Platform

Table 2–4 lists the software requirements for Oracle Audit Vault collection agent.

Table 2–4 Software Requirements

Requirement	Value
System architecture	Processor: Intel (x86) For additional information, visit My Oracle Support at `http://metalink.oracle.com`
Operating system	Oracle Audit Vault collection agent for Microsoft Windows is supported on the following operating systems: ▪ Microsoft Windows 2000 with service pack 1 or later. All editions, including Terminal Services and Microsoft Windows 2000 MultiLanguage Edition (MLE), are supported. ▪ Microsoft Windows Server 2003 - all editions ▪ Microsoft Windows XP Professional The underlying file system must be NTFS. A FAT32 file system is not supported; if a FAT32 file system is detected, the installation will not proceed. Microsoft Windows NT is not supported. Microsoft Windows Multilingual User Interface Pack is supported on Microsoft Windows Server 2003, and Microsoft Windows XP Professional.
Network protocol	The Oracle Net foundation layer uses Oracle protocol support to communicate with the following industry-standard network protocols: ▪ TCP/IP ▪ TCP/IP with Secure Sockets Layer (SSL) ▪ Named Pipes

2.3 Preinstallation Requirements for the Microsoft Windows 64-Bit (x64) Platform

This section describes the following preinstallation tasks:

- Checking the Hardware Requirements for the Microsoft Windows 64-Bit (x64) Platform
- Checking the Software Requirements for the Microsoft Windows 64-Bit (x64) Platform

> **Note:** Oracle Audit Vault collection agent is a 32-bit Microsoft Windows application that can also run on the Microsoft Windows 64-bit (x64) platform.

2.3.1 Checking the Hardware Requirements for the Microsoft Windows 64-Bit (x64) Platform

Table 2–5 lists the required hardware components for Oracle Audit Vault collection agent.

Table 2–5 Hardware Requirements

Requirement	Minimum Value
Physical memory (RAM)	512 MB minimum, 1 GB recommended
Virtual memory	Double the amount of RAM
Hard disk space	755 MB
Video adapter	256 colors
Processor	AMD64, or Intel Extended memory (EM64T)

2.3.1.1 Hard Disk Space Requirements

This section lists system requirements for Microsoft Windows platforms that use the NT File System (NTFS) file systems. FAT32 space requirements are slightly larger. 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 the space required for the size of compressed files that are expanded on the hard drive.

The hard disk requirements for Oracle Database Client components include space required to install Java Run-time Environment (JRE) and Oracle Universal Installer on the partition where the operating system is installed. If sufficient space is not detected, then the installation fails and an error message appears.

Table 2–6 lists the space requirements for NTFS.

Table 2–6 Disk Space Requirements for NTFS

TEMP Space	Oracle Home	Total
105 MB	650 MB	755 MB

> **See Also:** "NTFS File System and Microsoft Windows Registry Permissions" in *Oracle Database Platform Guide for Microsoft Windows (x64)*

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

1. Determine the physical RAM size. For a computer using Microsoft Windows 2003, for example, open **System** in the Microsoft Windows Control Panel and select 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 Microsoft Windows 2003, for example, open **System** in the Control Panel, select the **Advanced** tab, and click **Settings** in the **Performance** section. Then select 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 Microsoft Windows 2003, for example, open **My Computer**, right-click the drive where the Oracle software is to be installed, and choose **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.

   If less than 100 MB of disk space is available in the `temp` directory, then delete all unnecessary files. If the `temp` disk space is still less than 100 MB, then set the `TEMP` or `TMP` environment variable to point to a different hard drive. For a computer using Microsoft Windows 2003, for example, open **System** in the Control Panel, select the **Advanced** tab, and click **Environment Variables**.

2.3.2 Checking the Software Requirements for the Microsoft Windows 64-Bit (x64) Platform

Table 2–7 lists the software requirements for Oracle Audit Vault collection agent.

Table 2–7 Software Requirements

Requirement	Value
System architecture	Processor: AMD64, or Intel Extended memory (EM64T) For additional information, visit My Oracle Support at `http://metalink.oracle.com`
Operating system	Oracle Audit Vault collection agent for x64 Microsoft Windows is supported on the following operating systems: ▪ Microsoft Windows Server 2003, Standard x64 Edition ▪ Microsoft Windows Server 2003, Enterprise x64 Edition ▪ Microsoft Windows Server 2003, Datacenter x64 Edition ▪ Microsoft Windows Server 2003, Release 2 **Note**: Microsoft Windows Multilingual User Interface Pack is supported on Microsoft Windows Server 2003.

Table 2–7 (Cont.) Software Requirements

Requirement	Value
Network protocol	The Oracle Net foundation layer uses Oracle protocol support to communicate with the following industry-standard network protocols: ■ TCP/IP ■ TCP/IP with Secure Sockets Layer (SSL) ■ Named Pipes

2.4 Oracle Audit Vault Collection Agent 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 My Oracle Support 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 My Oracle Support Web site is available at the following URL:

http://metalink.oracle.com/

You must register online before using My Oracle Support. After logging in, select the **Certify** tab. Select the **View Certifications by Product** link. Select **Audit Vault** from the product groups listed, then click **Submit**. Select **Oracle Audit Vault Agent** from the products listed, then click **Submit**. Click the **Note** link under the **Product Certifications** heading.

3

Installing Oracle Audit Vault Collection Agent

This chapter includes the major steps required to install Oracle Audit Vault collection agent.

This chapter includes the following sections:

3.1 Oracle Audit Vault Collection Agent Preinstallation

You must add or register the Oracle Audit Vault collection agent at Oracle Audit Vault Server (Audit Vault Server) before you begin the installation of the collection agent to ensure Audit Vault Server has this metadata stored beforehand; otherwise, the collection agent installation will not be successful. Perform the following steps to complete this task.

1. On the Audit Vault Server system, set the Oracle Audit Vault environment variables (`ORACLE_HOME`, `ORACLE_SID`, `PATH`, `LD_LIBRARY_PATH` (for Linux x86, Linux x86-64, and Solaris SPARC_64), `SHLIB_PATH` (for HP Itanium), or `LIBPATH` (for AIX), as applicable, or use the coraenv or oraenv scripts located in the server home bin directory (`$ORACLE_HOME/bin`) to perform this operation. Set `ORACLE_HOME` to point to the Audit Vault Server home. Set `ORACLE_SID` to the database name for a single instance installation (`av` is the default database name) or for an Oracle Real Application Clusters (Oracle RAC) installation, set it to the instance name. Set `PATH` to include `$ORACLE_HOME/bin`.
2. Add or register the Oracle Audit Vault collection agent at Audit Vault Server and create the collection agent user if one has not been previously created, or if you have already created an collection agent user, enter that collection agent user name when prompted.

Note: For information about Oracle Audit Vault collection agent deployment scenarios, see Section 1.1. This information describes where best to install the collection agent depending on the type of audit data that the collection agent collects.

In addition, Oracle recommends creating different agent user names for each collection agent that you install.

Run the following AVCA `add_agent` command. You must record the settings for this AVCA `add_agent` command so that you can provide this collection agent user name and collection agent name to the Oracle Audit Vault administrator who plans to install the Oracle Audit Vault collection agent software described in Section 3.2.1.

Example 3–1 shows adding a collection agent and creating an collection agent user. You will be prompted for the collection agent user name and password, then you must verify the password.

Example 3–2 shows adding an collection agent and using a previously created collection agent user. You will be prompted for just the collection agent user name.

Example 3–1 Running the AVCA add_agent Command to Create the Collection Agent User and Register the Collection Agent with Oracle Audit Vault

```
avca add_agent -agentname avagent-name [-agentdesc agent-description]
-agenthost name-of-host-where-agent-will-be-installed
```

For example, if you have not previously created a collection agent user:

```
avca add_agent -agentname agent1 -agenthost salesdb.us.example.com
AVCA started
Adding agent...
Enter agent user name: agentusername
Enter agent user password: agent user pwd
Re-enter agent user password: agent user pwd
Agent added successfully.
```

Example 3–2 Running the AVCA add_agent Command and Using a Previously Created Collection Agent User and Register the Collection Agent with Oracle Audit Vault

For example, if you have previously created a collection agent user named agentuser1 as this example shows:

```
avca add_agent -agentname agent1 -agenthost salesdb.us.example.com
AVCA started
Adding agent...
Enter agent user name: agentuser1
Agent added successfully.
```

The command arguments are as follows:

- `-agentname`: The name of the collection agent, with no spaces. The collection agent name is case sensitive. The collection agent name must be unique to Audit Vault Server. You cannot reuse an collection agent name for another collection agent name on the same server, even after the deinstallation of a previously installed collection agent. Oracle Audit Vault does not delete

collection agent names that are dropped; it disables the collection agent name and retains the collection agent name in its metadata.

You should write this name down. You will enter it as part of the collection agent installation on the Agent Details page.

- `[-agentdesc desc]`: Optional parameter. A description of the collection agent.

  This is optional.

- `-agenthost`: The host name where the collection agent is installed, for example, `salesdb.us.example.com`.

The collection agent user name is the collection agent user to whom the `AV_AGENT` role will be granted. Later, you will enter this same collection agent user name and then enter a password as part of the collection agent installation on the **Agent Details** page.

Provide this collection agent user name and collection agent name to the Oracle Audit Vault administrator who plans to install the Oracle Audit Vault collection agent software described in Section 3.2.1.

3.2 Oracle Audit Vault Collection Agent Installation

This section describes the following topics:

- Performing the New Oracle Audit Vault Collection Agent Installation
- The Select Installation Type Screen
- The Audit Vault Agent Installation Details Screen
- Configuring Oracle Audit Vault Collection Agent to Connect When Audit Vault Server is Configured in an Oracle RAC Environment

3.2.1 Performing the New Oracle Audit Vault Collection Agent Installation

For an overview of requested information specific to the Oracle Audit Vault collection agent installation, see Section 3.2.2 and Section 3.2.3.

See Section 2.1.13 for important information about setting the correct locale.

The steps to perform a new Oracle Audit Vault collection agent installation are as follows:

1. Run Oracle Universal Installer (OUI) to install Oracle Audit Vault collection agent. You should run the installer as the software owner account that owns the current `ORACLE_HOME` environment. This is normally the `oracle` account.

   For Linux and UNIX-based systems, log in as the `oracle` user. Alternatively, switch user to `oracle` using the `su -` command. Change your current directory to the directory that contains the installation files. Start Oracle Universal Installer from the Oracle Audit Vault collection agent package.

   For Linux and UNIX-based systems:

   ```
   cd directory-containing-the-Oracle-Audit-Vault-Agent-installation-files
   ./runInstaller
   ```

   For Microsoft Windows systems, locate the directory containing the Oracle Audit Vault collection agent installation files for Microsoft Windows, then double-click `setup.exe` to start Oracle Universal Installer.

Oracle Universal Installer starts up by first checking the following installation requirements and displaying the results. For example, it shows what the value should be or must be greater than or at least equal to, then the actual value for each check and the check result status: Passed or Failed.

- Checking operating system version: must be redhat-3, SuSE-9, SuSE-10, redhat-4, redhat-5, UnitedLinux-1.0, asiaunx-1, asianux-2, enterprise-4 or enterprise-5 Passed
- Checking temp space: must be greater than 80MB. Actual 145332MB Passed
- Checking swap space: must be greater than 150MB. Actual 3929MB Passed
- Checking monitor: must be configured to display at least 256 colors. Actual 65536 Passed

Then Oracle Universal Installer prepares to launch itself.

2. Using the information that you recorded in Section 3.1, specify the following information on the **Agent Details** page, then click **Next**:

   a. **Audit Vault Agent Name** – The name of the collection agent (created in Step 2 of Section 3.1)

   b. **Audit Vault Agent Home** – Specify or browse to find the path to the Oracle Audit Vault collection agent home where you want to install Oracle Audit Vault collection agent. Specify a path other than the Oracle home or the Audit Vault Server home.

   c. **Agent User Name** – The account name of the Oracle Audit Vault collection agent User (provided in Step 2 of Section 3.1).

   d. **Agent User Password** – The password for the Oracle Audit Vault collection agent user account (provided in Step 2 of Section 3.1).

   e. Specify the Audit Vault Server **Connect String** that takes the form *`hostname:port:service name`* in that order using a (:) colon delimiter between each item, for example: `salesdb.us.example.com:1521:av.us.example.com`.

      The structure of the service name is *`db_name.db_domain`*. The *`db_name`* portion is the Oracle Audit Vault name specified during the Audit Vault Server installation, which is the global name. The *`db_domain`* is the domain name portion of the full host name for the system where the Audit Vault Server is installed. You can find the service name by checking the `tnsnames.ora` file.

      See Section 3.2.3.4 for more information about the Audit Vault Server connect string.

   See Section 3.2.3 for more information about specifying the Oracle Audit Vault collection agent information.

3. Review the installation prerequisite checks on the **Prerequisite Check** page. This is when all installation prerequisite checks are performed and the results are displayed. Verify that all prerequisite checks succeed, then click **Next**.

   Oracle Universal Installer checks the system to verify that it is configured correctly to run Oracle software. If you have completed all of the preinstallation steps in this guide, all of the checks should pass.

   If a check fails, then review the cause of the failure listed for that check on the screen. If possible, rectify the problem and rerun the check. Alternatively, if you

are satisfied that your system meets the requirements, then you can select the check box for the failed check to manually verify the requirement.

4. On the installation **Summary** page, review the installation summary information. After reviewing this installation information, click **Install** to begin the installation procedure.

5. Provide information or run scripts as the `root` user when prompted by Oracle Universal Installer. The `root.sh` script adds your environment variable settings to scripts, such as `coraenv`, that you can later use to set your environment variables. If you need assistance during installation, click **Help**. If you encounter problems during installation, then examine the Oracle Universal Installer actions recorded in the installation log file. The log file is located in the `cfgtoollogs/oui` directory, in the following location:

   For Linux and UNIX-based systems:

   $ORACLE_HOME`/cfgtoollogs/oui/installActions`*date_time*`.log`

   For Microsoft Windows systems:

   ORACLE_HOME`\cfgtoollogs\oui\installActions`*date_time*`.log`

6. After the installation completes, on the **Exit** page, click **Exit**. Then, on the **Confirmation** message box, click **Yes** to exit Oracle Universal Installer.

7. To check that the installation was successful, try the following test.

   a. Set the environment variables for the Audit Vault agent.

   b. Run the following command:

      ```
      avctl show_oc4j_status
      ```

      The output should be as follows:

      ```
      -----------------
      OC4J is running
      -----------------
      ```

For Linux and UNIX-based platforms, the system should show that the oc4j process for the collection agent is running. This process can also be checked using the `ps` command on the command line. For example, from the Oracle Audit Vault collection agent home, run the following command:

```
ps -ef|grep oc4j
```

For Microsoft Windows, a Microsoft Windows service named `Oracle Audit Vault Agent - agent name` is created, where *`agent name`* is the name of the collection agent installed. This service is in a `Stopped` state. This is just a "bootstrap service"; it is not the collection agent itself, but rather a service used to start the collection agent. This bootstrap service completes its task of starting the collection agent and then shuts itself down, so it will never be seen in a running state. The collection agent process is a Java program running out of the Agent `ORACLE_HOME` directory.

See *Oracle Audit Vault Administrator's Guide* for more information about adding a source, adding a collector, and managing and monitoring the Oracle Audit Vault system.

3.2.2 The Select Installation Type Screen

This screen lets you select the type of Oracle Audit Vault collection agent installation you want to follow by selecting the respective installation type.

The **Select Installation Type** screen only appears if Oracle Universal Installer detects upgradable Oracle Audit Vault collection agent homes on the system. If the installation does not detect any upgradable Oracle Audit Vault collection agent homes, the **Audit Vault Agent Installation Details** screen displays instead.

The installation types are:

- **Upgrade Existing Audit Vault Agent Home** – If the installation detects one or more existing upgradable Oracle Audit Vault collection agent homes on the system, the installation enables the upgrade option to the current release for the Oracle Audit Vault collection agent home you select from the drop down list. If the installation needs to upgrade multiple Oracle Audit Vault collection agent homes, you must perform the upgrade for each Oracle Audit Vault collection agent home. You can only select one Oracle collection agent home at a time to perform the upgrade.

  The upgrade installation type is only enabled if the installer detects existing upgradable Oracle Audit Vault collection agent homes on the system.

  See ***Chapter 4*** for more information on performing an upgrade.

- **New Audit Vault Agent Installation** – If this is a new Oracle Audit Vault collection agent installation, select this option.

Note: On AIX systems, if you perform an Oracle Audit Vault collection agent installation using Simplified Chinese (`zh_CN`) or Japanese (`ja_JP`) languages, then accessing help on the installer screen will display a blank help window. For more information on this refer to the *Oracle Audit Vault Release Notes*.

3.2.3 The Audit Vault Agent Installation Details Screen

This section provides an overview of information specific to the **Agent Details** screen for the Oracle Audit Vault collection agent installation.

This **Agent Details** screen does not appear when you select the **Upgrade Existing Audit Vault Agent Home** installation type option. It only appears when you select the **New Audit Vault Agent Installation** installation type option.

3.2.3.1 Audit Vault Agent Name

Audit Vault Agent Name – The name of the collection agent can be a maximum of 255 characters. The agent name is required. This is the agent name you created in Section 3.1.

3.2.3.2 Audit Vault Agent Home

Audit Vault Agent Home – Specify or browse to find the path to the Oracle Audit Vault collection agent home where you want to install Oracle Audit Vault collection agent. The path must contain only alphanumeric characters (letters and numbers). The path is required.

Only the special characters shown in Table 3–1 are allowed.

Table 3–1 Special Characters Allowed in the Oracle Audit Vault Home Name

Symbol	Character Name
\	Backslash
/	Slash
-	hyphen
_	Underscore
.	Period
:	Colon

3.2.3.3 Audit Vault Agent Account

Oracle Audit Vault collection agent installation prompts for the account name and password of the Oracle Audit Vault collection agent provided in Step 2 in Section 3.1.

Agent User Name – This user account is granted the `AV_AGENT` role. This user manages agents and collectors by starting, stopping, and resetting them. The Oracle Audit Vault collection agent user name is required.

Agent User Password – The password for the Oracle Audit Vault collection agent user account. The password is required.

3.2.3.4 Connect String

The Audit Vault Server connect string takes the form `hostname:port:service name`, where these three items are delimited by the colon (:) character. This connect string will be used to configure the connectivity of the collection agent to the Audit Vault Server database. The host name represents the system where the Audit Vault Server resides. The listener port number and service name information are needed to access the Audit Vault Server database.

These three components must be in the following order, and information for each component must be provided: host name, listener port, and service name.

The host name cannot contain any space characters. The host name is required.

The listener port number must have a value between 0 and 65535. The listener port number is required. The Audit Vault Server listener port number can be determined by issuing the following command in the Audit Vault Server home:

```
lsnrctl status
```

3.2.4 Configuring Oracle Audit Vault Collection Agent to Connect When Audit Vault Server is Configured in an Oracle RAC Environment

For Oracle Audit Vault collection agent to be able to connect across the Oracle RAC Audit Vault Server nodes, you must establish the proper configuration. This configuration allows all the Oracle Audit Vault collection agents to be able to connect when Audit Vault Server is configured in an Oracle RAC environment should the Audit Vault Server failover to another node.

Update the contents of each `tnsnames.ora` file in the Oracle Audit Vault collection agent Oracle home located at *`Agent_home`*`/network/admin/tnsnames.ora` as follows:

```
AV-SID = (DESCRIPTION = (ENABLE = BROKEN)
(ADDRESS = (PROTOCOL = TCP)(HOST = VIP-address-of-node1)(PORT = listener-port))
```

```
(ADDRESS = (PROTOCOL = TCP)(HOST = VIP-address-of-node2)(PORT = listener-port))
(LOAD_BALANCE = yes)
(CONNECT_DATA = (SERVICE_NAME = AV-GDN)
(FAILOVER_MODE=(TYPE=select)
(METHOD=basic)(RETRIES=20)
(DELAY=15))))
```

3.3 Performing a Silent Installation Using a Response File

Follow these brief steps to perform a silent installation using a response file:

1. Ensure all prerequisites are met for the installation of Oracle Audit Vault collection agent.
2. Prepare the Oracle Audit Vault collection agent response file. A template response file can be found at *AV-agent-installer-location*`/response/avagent.rsp` on Linux and UNIX-based systems at the Oracle Audit Vault collection agent installation media and at *AV-agent-installer-location*`\response\avagent.rsp` on Microsoft Windows systems at the Oracle Audit Vault collection agent installation media.

   Prepare the response file by entering values in the first part of the response file for all parameters, then save the file. Do not edit any values in the second part of the response file.
3. Invoke Oracle Universal Installer using the following options:

   For Linux and UNIX-based systems:

   ```
   ./runInstaller -silent -responseFile Path-of-response-file
   ```

   For Microsoft Windows systems:

   ```
   setup.exe -silent -responseFile Path-of-response-file
   ```

   In this example:

   `Path of response file` identifies the full path of the response file.

   `-silent` runs Oracle Universal Installer in silent mode and suppresses the Welcome window.

   For more information about these options, see Section 1.2.2. For general information about these options and about how to complete an installation using these response files, see the platform specific Oracle Database installation guides and *Oracle Database Oracle Clusterware and Oracle Real Application Clusters Installation Guide for Linux* and "Installing Oracle Products" in *Oracle Universal Installer and OPatch User's Guide* for more information about installing and using response files.

3.4 Postinstallation Collection Agent Tasks

This section describes the following topics:

- Download Patches
- Download Critical Patch Updates
- Download JDBC Driver Files for Microsoft SQL Server, Sybase ASE Database, and IBM DB2 Connectivity

3.4.1 Download Patches

You can find mandatory Oracle Audit Vault patchsets on the My Oracle Support (formerly Oracle*MetaLink*) Web site.

To find and download patchsets for Oracle Audit Vault:

1. Log in to My Oracle Support from the following URL:

   `http://metalink.oracle.com`

2. In Quick Find:
   - Select **Knowledge Base** from the menu.
   - Enter `Audit Vault` in the search box.
3. Click **Go**.
4. In the list of articles that appears, search for the phrase `Mandatory Patches`, and then look for any patches that apply to the current release of Oracle Audit Vault.
5. Select the article and then read the associated summary text that describes the patch contents.
6. Under In this Document, click **Patches**.

   The Patches section lists the patches that you must apply.
7. Click the link for the first patch.

   The Download page for the first page appears.
8. Click **View Readme** to read about the patch details, and then click **Download** to download the patch to your computer.
9. Repeat Step 7 through Step 8 for each patch listed in the Patches section.

> **Note:** No Oracle Database one-off patches should be applied to the Oracle Audit Vault database unless directed to do so by Oracle Support Services.

3.4.2 Download Critical Patch Updates

A critical patch update (CPU) is a collection of patches for security vulnerabilities. It includes non-security fixes required (because of interdependencies) by those security patches. Critical patch updates are cumulative, and they are provided quarterly on the Oracle Technology Network. You should periodically check My Oracle Support for critical patch updates.

To find and download critical patch updates for Oracle Audit Vault:

1. Follow Step 1 through Step 3 in Section 3.4.1to find the critical patch updates for Oracle Audit Vault.
2. In the list of articles that appears, search for the phrase `Oracle Critical Patch Update`.
3. Select the most recent critical patch update article, and then read its instructions.

   Download the most recent critical patch update for Oracle Audit Vault. In most critical patch update articles, there is section entitled "Patch Download Procedure," which explains how to download the critical patch update.

For more information about critical patch updates, see:

http://www.oracle.com/security/critical-patch-update.html

For the latest information on whether a specific critical patch update is certified with Oracle Audit Vault, review the certification matrix on the My Oracle Support Web site, at:

http://metalink.oracle.com

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

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

3.4.3 Download JDBC Driver Files for Microsoft SQL Server, Sybase ASE Database, and IBM DB2 Connectivity

Oracle Audit Vault enables you to collect audit trails from Microsoft SQL Server, Sybase Adaptive Server Enterprise (ASE), and IBM DB2 databases.

To allow connectivity between Audit Vault Server and Microsoft SQL Server databases, Audit Vault Server and Sybase ASE databases, and Audit Vault Server and IBM DB2 databases, you must download and copy the respective JDBC Driver jar files to the designated location.

Section 3.4.3.1, Section 3.4.3.2, and Section 3.4.3.3 describe this download and copy process for each JDBC Driver.

Section 3.4.3.4 describes how to ensure that these JDBC Driver jar files used by the MSSQLDB, SYBDB, and DB2DB collectors are present in the Oracle Audit Vault OC4J Web container.

3.4.3.1 Download SQL Server 2005 JDBC Driver for SQL Server Connectivity

Because the SQL Server 2005 Driver for JDBC works with both SQL Server 2000 and SQL Server 2005, use the SQL Server 2005 Driver for JDBC.

Download the Microsoft SQL Server 2005 Driver for JDBC from the following links.

http://msdn2.microsoft.com/en-us/data/aa937724.aspx

This Type 4 JDBC driver (`sqljdbc.jar`) provides highly scalable and reliable connectivity for the enterprise Java environment and provides JDBC access to SQL Server 2000 or SQL Server 2005 through any Java-enabled applet, application, or application server.

Copy the `sqljdbc.jar` file to the Oracle Audit Vault collection agent home location:

ORACLE_HOME`/jlib`

3.4.3.2 Download jConnect JDBC Driver for Sybase ASE Connectivity

Download jConnect for JDBC, which provides high performance native access to Sybase ASE data sources, from the following link:

http://www.sybase.com/products/allproductsa-z/softwaredeveloperkit/jconnect

jConnect for JDBC (`jconn3.jar`) is a high performance JDBC Driver from Sybase that communicates directly to Sybase data sources.

Copy the `jconn3.jar` file to the Oracle Audit Vault collection agent home location:

ORACLE_HOME/jlib

3.4.3.3 Copy the IBM DB2 Data Server Driver for JDBC and SQLJ to the Audit Vault Homes

Copy the IBM Data Server Driver for JDBC and SQLJ (`db2jcc.jar`) to the `$ORACLE_HOME/jlib` directories in both the Audit Vault Server and Audit Vault Agent homes. Oracle Audit Vault requires version 3.50 or later of the driver. This version of the `db2jcc.jar` file is available in either IBM DB2 UDB version 9.5 or IBM DB2 Connect version 9.5 or later.

This driver provides high performance native access to IBM DB2 database data sources. The DB2 collector uses this driver to collect audit data from IBM DB2 databases, so the driver must be present in Oracle Audit Vault OC4J before you can start the agent OC4J.

3.4.3.4 Stop and Start the Agent OC4J

After copying these JDBC Driver jar files to the designated location, you must ensure that they are present in Oracle Audit Vault OC4J Web container, before starting the agent OC4J. If the agent OC4J was already running during the download and copy process, you must stop it and start it up again. The sequence of steps to do this are as follows:

1. Stop each running collector in the collection agent.

   On the Audit Vault Server, use the `avctl stop_collector` command.

2. Stop the running collection agent.

   On the Audit Vault Server, use the `avctl stop_agent` command.

3. Stop the agent OC4J.

   On the Oracle Audit Vault collection agent, use the `avctl stop_oc4j` command.

4. Start the agent OC4J.

   On the Oracle Audit Vault collection agent, use the `avctl start_oc4j` command.

5. Start the collection agent.

   On the Audit Vault Server, use the `avctl start_agent` command.

6. Start each collector in the collection agent.

   On the Audit Vault Server, for each collector use the `avctl start_collector` command.

See the reference information for the Oracle Audit Vault Control (AVCTL) command-line utility in *Oracle Audit Vault Administrator's Guide* for more information about each of these commands.

3.5 Next Steps to Perform as an Oracle Audit Vault Administrator

After Audit Vault Server and Oracle Audit Vault collection agent installation are complete, see *Oracle Audit Vault Administrator's Guide* for some Oracle Audit Vault Administration tasks to perform. These tasks include:

1. For Linux and UNIX platforms only: Check and set environment variables in the shells in which you will be interacting with the Audit Vault Server and the Oracle

Audit Vault collection agent (see the information about Checking and Setting Linux and UNIX Environment Variables).

2. For collecting audit records from Oracle Database audit sources, see the information about registering Oracle Database sources and collectors.
3. For collecting audit records from SQL Server Database audit sources, see the information about registering Microsoft SQL Server database sources and collector.
4. For collecting audit records from Sybase ASE Database audit sources, see the information about registering Sybase ASE sources and collector.
5. For collecting audit records from IBM DB2 database audit sources, see the information about registering IBM DB2 sources and collector.
6. To start collecting audit records from a database audit source, see the information about starting up collection agents and collectors.
7. To perform other Oracle Audit Vault configuration tasks, see the information about performing additional Oracle Audit Vault configuration tasks.
8. To manage and monitor an Oracle Audit Vault system, see the information about managing Oracle Audit Vault.
9. Before going into production be sure to secure management communications, see the information about Oracle advanced security and secure management communication.

4

Upgrading an Oracle Audit Vault Collection Agent

This chapter describes the procedure to upgrade an Oracle Audit Vault collection agent installation from release 10.2.2.1.0 or earlier to release 10.2.3.0.0. This chapter covers the following topics:

4.1 Back Up and Recovery of Oracle Audit Vault Collection Agent Files

Oracle Audit Vault collection agent upgrade installation does not have the ability to be rolled back, therefore you should take precautions to backup the files before you perform the upgrade until you have tested the upgrade installation.

Back Up Oracle Audit Vault Collection Agent Home

Because the upgrade installation will update files in the Oracle Audit Vault collection agent home, you should back up or copy these files to another directory until the upgrade installation has been tested.

Abandon the Upgrade

If the upgrade installation is not successful, to abandon the upgrade, copy (Restore) the Oracle Audit Vault collection agent home files back.

4.2 Upgrade Requirements

Note: On the Solaris Operating System (SPARC 64-bit) platform before performing an upgrade operation from Oracle Audit Vault collection agent release 10.2.2.1.0 to release 10.2.3.0.0, you must set the write permissions for the *$ORACLE_HOME*/jre folder as follows; otherwise, a write permission error is returned for the ../jre/../ files during the upgrade.

```
chmod -R u+w jre
```

The only requirement for upgrading your Oracle Audit Vault collection agents to release 10.2.3.0.0 is that you must have already upgraded the associated Oracle Audit Vault Server (Audit Vault Server) for these collection agents to release 10.2.3.0.0. This is essential to maintain compatibility between these Oracle Audit Vault collection agents with the most current version of the associated Audit Vault Server. In other words, you cannot upgrade an Oracle Audit Vault collection agent to release 10.2.3.0.0 without first upgrading its associated Audit Vault Server to this release because the Oracle Audit Vault collection agent would not be compatible nor would it work with the older associated release 10.2.2.1.0 or earlier Audit Vault Server.

The rule of thumb is that an older, installed Oracle Audit Vault collection agent will always work with the most current installed release of the Audit Vault Server that is either of the same release or higher; this is called upward compatibility of the older Oracle Audit Vault collection agent with the newer Audit Vault Server. For example, a release 10.2.2.1.0 Oracle Audit Vault collection agent would be compatible with a release 10.2.3.0.0 Audit Vault Server.

However, on the contrary, a release 10.2.3.0.0 Oracle Audit Vault collection agent would not be compatible nor would it work with a release 10.2.2.1.0 or earlier Audit Vault Server. For example, neither an upgraded release 10.2.3.0.0 Oracle Audit Vault collection agent nor a fresh installation of a release 10.2.3.0.0 Oracle Audit Vault collection agent would be compatible with a release 10.2.2.1.0 or earlier Oracle Audit Vault Server.

4.3 Upgrade Procedure

To upgrade to Oracle Audit Vault collection agent release 10.2.3, you must follow this sequence of steps to shut down Oracle Audit Vault components, perform the upgrade, then start up Oracle Audit Vault components:

1. Step 1: Ensure the NLS_LANG Environment Variable Is Not Set

   Note: This step is not necessary if the October 2007 or later Oracle CPU has been applied to Oracle Audit Vault collection agent release 10.2.2.1 or earlier.

2. Step 2: Stop All Collectors Running Within the Context of the Collection Agent You Are Upgrading
3. Step 3: Stop the Collection Agent You Are Upgrading
4. Step 4: Stop the Agent OC4J That Houses the Collection Agent You Are Upgrading
5. Step 5: Perform the Upgrade to Oracle Audit Vault Collection Agent Release 10.2.3.0.0 in the Oracle Audit Vault Collection Agent Home
6. Step 6: Start the Upgraded Collection Agent
7. Step 7: Start the Collectors That Run in the Upgraded Collection Agent
8. Step 8: Monitor the Oracle Audit Vault System

Details of each of these steps follows.

Step 1: Ensure the NLS_LANG Environment Variable Is Not Set

The `NLS_LANG` environment variable must not be set.

For example, for C shell:

```
unsetenv NLS_LANG
```

For example, for Bourne, Bash, or Korn shells:

```
unset NLS_LANG
```

Step 2: Stop All Collectors Running Within the Context of the Collection Agent You Are Upgrading

You must stop all collectors associated with the Oracle Audit Vault collection agent being upgraded.

From the Audit Vault Server home with ORACLE_HOME, ORACLE_SID, and PATH environment variables properly set for the Audit Vault Server home, use the following command syntax to stop each collector.

```
avctl stop_collector -collname collector-name -srcname source-name
```

Step 3: Stop the Collection Agent You Are Upgrading

You must stop the collection agent associated with the Oracle Audit Vault collection agent being upgraded.

From the Audit Vault Server home with ORACLE_HOME, ORACLE_SID, and PATH environment variables properly set for the Audit Vault Server home, use the following command syntax to stop each collection agent.

```
avctl stop_agent -agentname agent-name
```

Step 4: Stop the Agent OC4J That Houses the Collection Agent You Are Upgrading

You must stop the agent OC4J associated with the Oracle Audit Vault collection agent you are upgrading. There is one agent OC4J associated with each collection agent.

From the Oracle Audit Vault collection agent home with ORACLE_HOME, ORACLE_SID, PATH, LD_LIBRARY_PATH (for Linux x86, Linux x86-64, and Solaris SPARC_64), SHLIB_PATH (for HP-UX PA RISC and HP Itanium), or LIBPATH (for AIX) environment variables properly set for the Oracle Audit Vault collection agent home, use the following command syntax to stop the agent OC4J.

```
avctl stop_oc4j
```

Step 5: Perform the Upgrade to Oracle Audit Vault Collection Agent Release 10.2.3.0.0 in the Oracle Audit Vault Collection Agent Home

Perform the following steps to perform the upgrade to Oracle Audit Vault collection agent release 10.2.3.0.0 in the Oracle Audit Vault collection agent home:

1. Locate the Oracle Audit Vault collection agent release 10.2.3 media and mount the media.
2. Start Oracle Universal Installer (OUI) from the directory where the runInstaller program is located.

   ```
   cd directory-containing-Oracle-Audit-Vault-Agent-Installation-Files
   ./runInstaller
   ```

3. On the **Oracle Audit Vault Agent Installation Select Installation Type** window, when the installer detects an upgradable release, it automatically selects the

Upgrade Existing Audit Vault Agent Home option and displays the upgradeable home path specifications. If there is more than one upgradable path to upgrade, review the path names, and select the path specification to upgrade. Then click **Next**.

4. The **Summary Page** screen is displayed. Check the space requirements. Note that 33 MB of space is required to install Patch Set 1 along, which includes 27 MB of temporary space. Next, review each of the items that are about to be installed. Click **Install**.
5. The **Configuration Assistant** screen appears and proceeds to apply Oracle Audit Vault collection agent one-off patches and then the Oracle Audit Vault Upgrade Assistant runs some AVCA scripts to continue the release 10.2.3 upgrade installation.
6. On the **End of Installation** screen, you should see a message indicating a successful installation. Click **Exit** to exit the Oracle Universal Installer. Then on the **Exit** confirmation screen for the prompt "Do you really want to exit?", click **Yes** to confirm the exit operation.

Step 6: Start the Upgraded Collection Agent

From the Audit Vault Server home with `ORACLE_HOME`, `ORACLE_SID`, and `PATH` environment variables properly set for the Audit Vault Server home, use the following command syntax to start the upgraded collection agent.

```
avctl start_agent -agentname agent-name
```

Step 7: Start the Collectors That Run in the Upgraded Collection Agent

From the Audit Vault Server home with `ORACLE_HOME`, `ORACLE_SID, PATH, LD_LIBRARY_PATH` (for Linux x86, Linux x86-64, and Solaris SPARC_64), `SHLIB_PATH` (for HP Itanium), or `LIBPATH` (for AIX) environment variables properly set for the Audit Vault Server home, use the following command syntax to start each collector that runs in the upgraded collection agent.

```
avctl start_collector -collname collector-name -srcname source-name
```

Step 8: Monitor the Oracle Audit Vault System

This step is a reminder to monitor the Oracle Audit Vault system to ensure all Oracle Audit Vault components are running and the system is operational. See the *Oracle Audit Vault Administrator's Guide* for more information.

4.4 Performing a Silent Upgrade Installation Using a Response File

Follow these brief steps to perform a silent upgrade installation using a response file:

1. Make sure all prerequisites are met for the installation of Oracle Audit Vault collection agent.
2. Prepare the Oracle Audit Vault collection agent response file. A template response file can be found at *AV-agent-installer-location*`/response/upgrade_avagent.rsp` on Linux and UNIX-based systems at the Oracle Audit Vault collection agent installation media and at *AV-agent-installer-location*`\response\upgrade_avagent.rsp` on Microsoft Windows systems at the Oracle Audit Vault collection agent installation media.

Prepare the response file by entering values in the first part of the response file for all parameters, then save the file. Do not edit any values in the second part of the response file.

3. Invoke Oracle Universal Installer using the following options:

   For Linux and UNIX-based systems:

   ```
   ./runInstaller -silent -responseFile Path-of-response-file
   ```

   For Microsoft Windows systems:

   ```
   setup.exe -silent -responseFile Path-of-response-file
   ```

   In this example:

   `Path of response file` identifies the full path of the response file.

   `-silent` runs Oracle Universal Installer in silent mode and suppresses the Welcome window.

   For more information about these options, see Section 1.2.2. For general information about these options and about how to complete an installation using these response files, see the platform specific Oracle Database installation guides and *Oracle Database Oracle Clusterware and Oracle Real Application Clusters Installation Guide for Linux* and "Installing Oracle Products" in *Oracle Universal Installer and OPatch User's Guide* for more information about installing and using response files.

4.5 Post Upgrade Information

Note that after performing an Oracle Audit Vault collection agent upgrade, because the upgrade is an inplace upgrade, the original directory structure is still in use. This means the `ORACLE_HOME`, `ORACLE_SID, PATH, LD_LIBRARY_PATH` (for Linux x86, Linux x86-64, and Solaris SPARC_64), `SHLIB_PATH` (for HP-UX PA RISC and HP Itanium), or `LIBPATH` (for AIX) environment variables are the same as they were before the upgrade.

See Section 3.4 for any additional post upgrade installation tasks.

5

Removing Oracle Audit Vault Collection Agent Software

This chapter describes the process of removing Oracle Audit Vault collection agent software. It contains the following sections:

- Removing Oracle Audit Vault Collection Agent Software

  This section describes general instructions for all Linux and UNIX-based systems and Microsoft Windows systems.

- For Microsoft Windows Systems: Manually Remove the Remaining Oracle Audit Vault Collection Agent Components

  This section describes specific instructions for Microsoft Windows systems about manually removing the remaining registry keys, environment variables, Start menu options, and directories.

5.1 Removing Oracle Audit Vault Collection Agent Software

Use the following procedure to uninstall the Oracle Audit Vault collection agent software:

1. Use the Oracle Audit Vault Control (AVCTL) commands documented in *Oracle Audit Vault Administrator's Guide* to stop all collectors (`stop_collector`) running on the collection agent, and then to stop the collection agent itself (`stop_agent`).
2. Use the `avctl stop_oc4j` command to stop the agent OC4J. For example:

   ```
   avctl stop_oc4j
   ```

3. For Linux and UNIX-based systems, and Microsoft Windows systems, uninstall the Oracle Audit Vault collection agent software by running the following command in the home directory of the collection agent. For example:

   For Linux and UNIX-based systems:

   ```
   $ $ORACLE_HOME/oui/bin/runInstaller
   ```

   For Microsoft Windows systems:

   ```
   ORACLE_HOME\oui\bin\setup.exe
   ```

   As an alternative for Microsoft Windows systems, start Oracle Universal Installer: From the **Start** menu, select **Programs**, then **Oracle Agent - HOME_NAME**, then **Oracle Installation Products**, and then **Universal Installer**.

For Linux and UNIX-based systems, and Microsoft Windows systems, the **Welcome** window for Oracle Universal Installer appears.

4. Click **Deinstall Products** to bring up the Oracle Inventory screen.

   Select the Oracle home directory and the products that you want to remove by selecting the desired check boxes, then click **Remove**. The **Confirmation** window appears. Click **Yes** to remove the selected components.

   After the deinstallation removes the Oracle Audit Vault collection agent components from your system, the **Oracle Inventory** page appears without the removed components. Click **Close** to close the **Oracle Inventory** page. Click **Cancel** to exit Oracle Universal Installer. Click **Yes** to confirm that you want to exit.

5. Clean up the old Oracle directories.

   On systems where Oracle Audit Vault collection agent is the only Oracle software installed, navigate to the directory for `oracle`, and remove the directory.

   For Linux and UNIX-based systems, use the `rm -r` command.

   Otherwise, delete the Oracle Audit Vault collection agent home.

   For Linux and UNIX-based systems, issue the following command to confirm there is no other Oracle home installed.

   ```
   $ grep 'HOME NAME' OraInventory/ContentsXML/inventory.xml
   ```

   For Microsoft Windows systems, you must manually remove remaining registry keys, environment variables, Start menu options, and directories. See Section 5.2 for details.

5.2 For Microsoft Windows Systems: Manually Remove the Remaining Oracle Audit Vault Collection Agent Components

Oracle Universal Installer does not remove all Oracle Audit Vault collection agent components. After using Oracle Universal Installer to remove Oracle Audit Vault collection agent components, you must manually remove the remaining registry keys, environment variables, Start menu options, and directories.

This section contains these topics:

- Removing Oracle Audit Vault Collection Agent Keys from the Registry Editor on Microsoft Windows
- Updating the PATH Environment Variable Path
- Removing Oracle Audit Vault Collection Agent from the Start Menu
- Removing Oracle Audit Vault Collection Agent Directories

Note: In rare situations, you might want to correct serious system problems by completely removing Oracle Audit Vault collection agent components manually from the computer without first deinstalling Oracle Audit Vault collection agent with Oracle Universal Installer. Do this only as a last resort, and only if you want to remove all Oracle Audit Vault collection agent components from your system.

5.2.1 Removing Oracle Audit Vault Collection Agent Keys from the Registry Editor on Microsoft Windows

Oracle Universal Installer does not delete all services created by Oracle Net Configuration Assistant. In addition, it does not delete several other registry keys. You must remove any existing registry keys manually by following the instructions in one of the following sections:

- Removing Only the Oracle Audit Vault Collection Agent Service Registry Key
- Removing Only the Oracle Audit Vault Collection Agent Registry Keys

> **Caution:** Use Microsoft Registry Editor at your own risk. Incorrectly using the Registry Editor can cause serious problems and might require you to reinstall your operating system.

5.2.1.1 Removing Only the Oracle Audit Vault Collection Agent Service Registry Key

To remove only the Oracle Audit Vault collection agent Service registry entry (if it exists):

1. Log in as a member of the Administrators group.
2. Ensure that you first follow the instructions in Step 3 in Section 5.1 about stopping Oracle services on Microsoft Windows before removing Oracle Audit Vault collection agent components.
3. From the **Start** menu, choose **Run**, and then enter the following command:

   ```
   regedit
   ```

4. Go to `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services` and delete the `Oracle Audit Vault Agent - agent name` registry entry.

   When you ran Oracle Universal Installer to deinstall Oracle Audit Vault collection agent, it deleted all other Oracle Net services.
5. Exit the Registry Editor.
6. Restart your computer.

5.2.1.2 Removing Only the Oracle Audit Vault Collection Agent Registry Keys

To remove the Oracle Audit Vault collection agent registry keys from a computer (if any exist):

> **Caution:** These instructions remove *only* the Oracle Audit Vault collection agent components, services, and registry entries from your computer. Exercise extreme care when removing registry entries. Removing incorrect entries can break your system. Any database files under `ORACLE_BASE\ORACLE_HOME\Oracle Audit Vault Agent Name` should be deleted only after completing these instructions.

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

2. Ensure that you first follow the instructions in Step 3 in Section 5.1 about stopping Oracle Audit Vault collection agent Microsoft Windows service before removing the Oracle Audit Vault collection agent components.
3. From the **Start** menu, choose **Run**, and enter the following command:

   ```
   regedit
   ```

4. Go to `HKEY_LOCAL_MACHINE\SOFTWARE`.
5. Delete the `ORACLE` key named `KEY_`*`AgentHOME_NAME`*, similar to KEY_ OraAV10g_home1.
6. Exit the Registry Editor.
7. Restart your computer.

5.2.2 Updating the PATH Environment Variable Path

Check the `PATH` environment variable and remove any Oracle entries.

1. Display **System** in the Control Panel.
2. Select the **Advanced** tab and then click **Environment Variables**.
3. Select the system variable `PATH` and edit it to remove any Oracle entries.

   For example, remove Oracle entries that contain *`ORACLE_BASE`*`\`*`ORACLE_HOME`* in the `Path` variable. You may see a `Path` variable that contains entries similar to the following:

   ```
   ORACLE_BASE\ORACLE_HOME\product\10.2.3\av_agent_1\bin
   ```

4. Save any changes and exit **System**.

5.2.3 Removing Oracle Audit Vault Collection Agent from the Start Menu

Check the **Start** menu for any Oracle Audit Vault collection agent entries and remove them.

Follow these steps:

1. Select **Start**, then **Programs**, then **Oracle -** ***Agent HOME_NAME***.
2. Right-click **Oracle -** ***Agent HOME_NAME***, and from the menu, select **Delete**.

You can also remove Oracle Audit Vault collection agent menu entries by using the following method:

1. Right-click the **Start** button to display the shortcut menu.
2. Select the **Explore All Users** option.
3. Under Documents and Settings, expand the `\Start Menu\Programs` folder.
4. Right-click and delete the **Oracle -** ***Agent HOME_NAME*** folder.

5.2.4 Removing Oracle Audit Vault Collection Agent Directories

After removing all Oracle Audit Vault collection agent registry keys and restarting the computer, delete any existing Oracle Audit Vault collection agent directories and files.

1. Using My Computer or Microsoft Windows Explorer, delete the *`SYSTEM_DRIVE`*`:\program files\oracle` directory.

2. Using My Computer or Microsoft Windows Explorer, delete the Oracle Audit Vault *ORACLE_BASE* directory on your hard drive.

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