Oracle® Audit Vault

Collection Agent Installation Guide

Release 10.3

E23588-04

January 2012

ORACLE®

Oracle Audit Vault Collection Agent Installation Guide, Release 10.3

E23588-04

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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

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at
http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For information, visit
http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info or visit
http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs if you are hearing impaired.

Related Documents

For more information, refer to the following documents:

- *Oracle Audit Vault Release Notes*
- *Oracle Audit Vault Server Installation Guide for Solaris on SPARC (64-Bit)*
- *Oracle Audit Vault Server Installation Guide for AIX on Power Systems (64-Bit)*
- *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/technetwork/community/join/overview/

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/technetwork/database/audit-vault/documentation/auditvault-091754.html

For OTN information specific to Oracle Audit Vault, visit

http://www.oracle.com/technetwork/database/audit-vault/overview/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:

- Deploying Oracle Audit Vault Collection Agents
- Oracle Audit Vault Collection Agent Installation Methods
- Oracle Audit Vault Collection Agent Installation Environment
- Installation Considerations

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 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 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 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 (32-Bit and 64-Bit) on 32-Bit and 64-Bit releases of Windows Server 2003 and Windows Server 2003 R2 SQL Server 2005 (32-Bit and 64-Bit) on 32-Bit and 64-Bit releases of Windows Server 2003, Windows Server 2003 R2, Windows XP Professional, Windows Vista, Windows Server 2008, and Windows 2008 R2 SQL Server 2008 (32-Bit and 64-Bit) on 32-Bit and 64-Bit releases of Windows XP Professional, Windows Server 2003, Windows Vista, Windows Server 2008, Windows 7, and Windows Server 2008 R2 SQL Server 2008 R2 (32-Bit and 64-Bit) on 32-Bit and 64-Bit releases of Windows XP Professional, Windows Server 2003, Windows Server 2003 R2, Windows Vista, Windows Server 2008, Windows 7, and Windows Server 2008 R2 See `http://msdn.microsoft.com` for specific information on the releases and editions of Microsoft operating systems that run Microsoft SQL Server releases.	On the same computer as the Microsoft SQL Server source database.
SYBDB	Sybase Adaptive Server Enterprise (ASE) ASE 12.5 through ASE 15.7 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 up to Version 9.7 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`). This response template file 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. 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
- About Oracle Unbreakable Enterprise Kernel for Linux

1.4.1 Hardware and Software Considerations

For Oracle Audit Vault collection agent to be compatible with Oracle Audit Vault Server, the version of Oracle Audit Vault collection agent must be less than or equal to the Oracle Audit Vault Server version. For example, Oracle Audit Vault collection agent version 10.3.0.0.0 is compatible with Oracle Audit Vault Server version 10.3.0.0.0. However, Oracle Audit Vault collection agent version 10.3.0.0.1 is not compatible with Oracle Audit Vault Server 10.3.0.0.0.

Assuming version compatibility of Oracle Audit Vault collection agent and Oracle Audit Vault Server, Oracle Audit Vault collection agents from any of the supported platforms can be used with Oracle Audit Vault Server from a different platform. For example, collection agents for platforms Linux x86-64, HP-UX Itanium, and AIX on Power Systems (64-bit) can be used with the Oracle Audit Vault Server for Solaris Operating System (SPARC 64-bit) platform.

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

`https://support.oracle.com`

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.

1.4.3 About Oracle Unbreakable Enterprise Kernel for Linux

The Oracle Unbreakable Enterprise Kernel for Linux is available for x86-64 platforms. It is based on a stable 2.6.32 Linux kernel, and also includes optimizations developed in collaboration with Oracle Database, Oracle middleware, and Oracle hardware engineering teams to ensure stability and optimal performance for the most demanding enterprise workloads.

Oracle highly recommends deploying the Oracle Unbreakable Enterprise Kernel in your Linux environment, especially if you are running Oracle software. However, using Oracle Unbreakable Enterprise Kernel is optional. If you require strict Red Hat Enterprise Linux kernel (RHEL) compatibility, then Oracle Linux also includes a kernel compatible with the RHEL Linux kernel, compiled directly from the Red Hat Enterprise Linux source code.

You can obtain more information about the Oracle Unbreakable Enterprise Kernel for Linux at the following URL:

http://www.oracle.com/us/technologies/linux

The Oracle Unbreakable Enterprise Linux kernel installs directly on top of Oracle Linux 5 or Red Hat Enterprise Linux 5, starting with Update 5, so you are not required to upgrade to a new major release of the operating system to obtain the benefits and features of this new kernel. You can obtain additional information and download the Oracle Unbreakable Enterprise Kernel for Linux at the following URL:

http://public-yum.oracle.com/

The Oracle Unbreakable Enterprise Kernel for Linux is the standard kernel used with Oracle products. The build and QA systems for Oracle Database and other Oracle products use the Oracle Unbreakable Enterprise Kernel for Linux exclusively. The Oracle Unbreakable Enterprise Kernel for Linux is also the kernel used in Oracle Exadata and Oracle Exalogic systems. Oracle Unbreakable Enterprise Kernel for Linux is used in all benchmark tests on Linux in which Oracle participates, and also in the Oracle Validated Configuration program for x86-64.

Refer to Section 2.1.3.2 for Unbreakable Enterprise Kernel requirements.

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 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 x86-64
- Preinstallation Requirements for Solaris Operating System (SPARC 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 x86-64

This section describes the following preinstallation tasks:

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

2.1.3.1 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.
- Minimum display requirements is a resolution of 1024 x 768 or higher.

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 to point to a directory path with at least 400 MB available.
   - 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 x86-64

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

https://support.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

Note:

- Oracle recommends that you install your Linux operating system with the default software packages (RPMs), unless you specifically intend to perform a minimal installation, and follow the directions for performing such an installation to ensure that you have all required packages for Oracle software.
- Oracle recommends that you do not customize RPMs during a default operating system installation. A default installation includes most required packages, and helps you to limit manual checks of package dependencies.
- If you did not perform a default Linux installation, you intend to use LDAP, and you want to use the scripts `odisrvreg`, `oidca`, or `schemasync`, then install the Korn shell RPM for the Linux distribution.
- You must install the packages (or later versions) listed in the following table. Also, ensure that the list of RPMs and all of the prerequisites for these RPMs are installed.

Important:

- If you are using Oracle Unbreakable Enterprise Kernel, then all required kernel packages are installed as part of the Oracle Unbreakable Enterprise Kernel installation

Item	Requirement
Operating system	One of the following operating system versions: ■ Asianux Server 3 SP2 ■ Oracle Linux 4 Update 7 ■ Oracle Linux 5 Update 2 ■ Oracle Linux 5 Update 5 (with the Oracle Unbreakable Enterprise Kernel for Linux) ■ Red Hat Enterprise Linux 4 Update 7 ■ Red Hat Enterprise Linux 5 Update 2 ■ Red Hat Enterprise Linux 5 Update 5 (with the Oracle Unbreakable Enterprise ■ Kernel for Linux) ■ SUSE Linux enterprise Server 10 SP2 ■ SUSE Linux enterprise Server 11

Item	Requirement
Kernel version	The system must be running the following kernel version (or a later version): **On Oracle Linux 4, and Red Hat Enterprise Linux 4:** 2.6.9 or later **On Oracle Linux 5 Update 2** 2.6.18 or later (compatible with Red Hat Enterprise kernel) **On Oracle Linux 5 Update 5 with the Unbreakable Enterprise Kernel for Linux** 2.6.32-100.0.19 or later See "About Oracle Unbreakable Enterprise Kernel for Linux" on page 1-3 **On Red Hat Enterprise Linux 5 Update 5 with the Unbreakable Enterprise Kernel for Linux:** 2.6.32 or later See "About Oracle Unbreakable Enterprise Kernel for Linux" on page 1-3 **On Asianux Server 3, Oracle Linux 5 Update 2, and Red Hat Enterprise Linux 5 Update 2:** 2.6.18 or later **On SUSE Linux Enterprise Server 10:** 2.6.16.21 or later **On SUSE Linux Enterprise Server 11:** 2.6.27.19 or later **Note**: For up-to-date certification or kernel version information please refer to the My Oracle Support Web site at: https://support.oracle.com
Packages for Oracle Linux 4 and Red Hat Enterprise Linux 4	**The following packages (or later versions) must be installed:** binutils-2.15.92.0.2 compat-libstdc++-33-3.2.3 compat-libstdc++-33-3.2.3 (32 bit) elfutils-libelf-0.97 elfutils-libelf-devel-0.97 expat-1.95.7 gcc-3.4.6 gcc-c++-3.4.6 glibc-2.3.4-2.41 glibc-2.3.4-2.41 (32 bit) glibc-common-2.3.4 glibc-devel-2.3.4 libaio-0.3.105 libaio-0.3.105 (32 bit) libaio-devel-0.3.105 libaio-devel-0.3.105 (32 bit) libgcc-3.4.6 libgcc-3.4.6 (32-bit) libstdc++-3.4.6 libstdc++-3.4.6 (32 bit) libstdc++-devel 3.4.6 make-3.80 sysstat-5.0.5

Item	Requirement
Packages for Asianux Server 3, Oracle Linux 5, and Red Hat Enterprise Linux 5	**The following packages (or later versions) must be installed:** binutils-2.17.50.0.6 compat-libstdc++-33-3.2.3 compat-libstdc++-33-3.2.3 (32 bit) elfutils-libelf-0.125 elfutils-libelf-devel-0.125 gcc-4.1.2 gcc-c++-4.1.2 glibc-2.5-24 glibc-2.5-24 (32 bit) glibc-common-2.5 glibc-devel-2.5 glibc-devel-2.5 (32 bit) libaio-0.3.106 libaio-0.3.106 (32 bit) libaio-devel-0.3.106 libaio-devel-0.3.106 (32 bit) libgcc-4.1.2 libgcc-4.1.2 (32 bit) libstdc++-4.1.2 libstdc++-4.1.2 (32 bit) libstdc++-devel 4.1.2 make-3.81 sysstat-7.0.2
SUSE Linux Enterprise Server 10	**The following packages (or later versions) must be installed:** binutils-2.16.91.0.5 compat-libstdc++-5.0.7 gcc-4.1.0 gcc-c++-4.1.2 glibc-2.4-31.63 glibc-devel-2.4-31.63 glibc-devel-32bit-2.4-31.63 libaio-0.3.104 libaio-32bit-0.3.104 libaio-devel-0.3.104 libaio-devel-32bit-0.3.104 libelf-0.8.5 libgcc-4.1.2 libstdc++-4.1.2 libstdc++-devel-4.1.2 make-3.80 sysstat-8.0.4

Item	Requirement
SUSE Linux Enterprise Server 11	**The following packages (or later versions) must be installed:** binutils-2.19 gcc-4.3 gcc-c++-4.3 glibc-2.9 glibc-32bit-2.9 glibc-devel-2.9 glibc-devel-32bit-2.9 libaio-0.3.104 libaio-32bit-0.3.104 libaio-devel-0.3.104 libaio-devel-32bit-0.3.104 libstdc++33-3.3.3 libstdc++33-32bit-3.3.3 libstdc++43-4.3.3_20081022 libstdc++43-32bit-4.3.3_20081022 libstdc++43-devel-4.3.3_20081022 libstdc++43-devel-32bit-4.3.3_20081022 libgcc43-4.3.3_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 /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
   ```

   The following is a sample output displayed by running this command on an Oracle Linux 5.0 system:

   ```
   2.6.18-128.el5PAE
   ```

   In this example, the output shows the kernel version (`2.6.18`) and errata level (`-128.el5PAE`) on the system.

   If the kernel version does not meet the requirement specified earlier in this section, then contact the 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 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)

2.1.4.1 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 to point to a directory path with at least 400 MB available.
   - 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.

2.1.4.2 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

https://support.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: ■ Oracle Solaris 10 U6 (5.10-2008.10)

Item	Requirement
Packages	SUNWarc SUNWbtool SUNWhea SUNWlibC SUNWlibm SUNWlibms SUNWsprot SUNWtoo SUNWi1of SUNWi1cs (ISO8859-1) SUNWi15cs (ISO8859-15) SUNWxwfnt SUNWcsl 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
5.10
```

   In this example, the version shown is Oracle Solaris 10 (5.10). 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 \
 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
```

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 Oracle Solaris 10: :** ■ 120753-06: SunOS 5.10: Microtasking libraries (libmtsk) patch ■ 139574-03: SunOS 5.10 ■ 141444-09 ■ 141414-02
Pro*C/C++, Pro*FORTRAN, Oracle Call Interface, Oracle C++ Call Interface, Oracle XML Developer's Kit (XDK)	**Patches For Oracle Solaris 10:** ■ 119963-14: SunOS 5.10: Shared library patch for C++ ■ 124861-15: SunOS 5.10 Compiler Common patch for Sun C C++ (optional)
Database Smart Flash Cache (An Enterprise Edition only feature)	The following patches are required for Oracle Solaris on SPARC (64-Bit) if you are using the flash cache feature: 125555-03 140796-01 140899-01 141016-01 139555-08 141414-10 141736-05

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 119963 patch is installed, use the following command:

```
# /usr/sbin/patchadd -p | grep 119963
```

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

https://support.oracle.com/

2.1.5 Preinstallation Requirements for AIX

This section describes the following preinstallation tasks:

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

2.1.5.1 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 to point to a directory path with at least 400 MB available.
   - 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.

2.1.5.2 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

https://support.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 V5.3 TL 09 SP1 ("5300-09-01"), 64 bit kernel AIX 6.1 TL 02 SP1 ("6100-02-01), 64-bit kernel AIX 7.1 TL 0 SP1 ("7100-00-01"), 64-bit kernel

Item	Requirement

Operating system file sets:	The following operating system file sets are required for AIX 5L:
	`bos.adt.base`
	`bos.adt.lib`
	`bos.adt.libm`
	`bos.perf.libperfstat 5.3.9.0 or later`
	`bos.perf.perfstat`
	`bos.perf.proctools`
	`xlC.aix50.rte:10.1.0.0 or later`
	`gpfs.base 3.2.1.8 or later`
	The following operating system filesets are required for AIX 6.1:
	`bos.adt.base`
	`bos.adt.lib`
	`bos.adt.libm`
	`bos.perf.libperfstat 6.1.2.1 or later`
	`bos.perf.perfstat`
	`bos.perf.proctools`
	`xlC.aix61.rte:10.1.0.0 or later`
	`xlC.rte.10.1.0.0 or later`
	`gpfs.base 3.2.1.8 or later`
	The following operating system filesets are required for AIX 7.1:
	`bos.adt.base`
	`bos.adt.lib`
	`bos.adt.libm`
	`bos.perf.libperfstat`
	`bos.perf.perfstat`
	`bos.perf.proctools`
	`xlC.aix61.rte:10.1.0.0 or later`
	`xlC.rte:10.1.0.0 or later`
	`gpfs.base 3.3.0.11 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)	■ IBM XL C/C++ Enterprise Edition for AIX, V9.0 April 2008 PTF: You can download this software from http://www-01.ibm.com/support/docview.wss?uid=swg24019055 **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 minimum recommended runtime environment for AIX 5.3 and AIX 6.1 is available at the following URL: IBM XL C/C++ for AIX, V10.1 Runtime Environment http://www-01.ibm.com/support/docview.wss?rs=2239&uid=swg24019829

Item	Requirement
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 1.5 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 -s
   ```

   For AIX 5L: If the operating system version is lower than AIX 5.3 Technology Level 9 SP 1, then upgrade your operating system to this or a later, level.

   For AIX 6.1: If the operating system version is lower than AIX 6.1 Technology Level 2 SP 1, then upgrade your operating system to this or a later, level.

   For AIX 7.1: If the operating system version is lower than AIX 7.1 Technology Level 0 SP 1, then upgrade your operating system to this or a later, level.

   AIX maintenance packages are available from the following Web site:

   http://www-933.ibm.com/support/fixcentral/

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**: If you are using the minimum operating system TL level for AIX 5L listed above, then install all AIX 5L V5.3 Authorized Problem Analysis Reports (APARs) for AIX 5L V5.3 TL 09 SP1, and the following AIX fixes: ■ IZ42940 ■ IZ49516 ■ IZ52331 These 5.3 fixes are present in the following TL levels: ■ AIX 5.3 TL-09 SP-05 and later ■ AIX 5.3 TL-10 SP-02 and later ■ AIX 5.3 TL-11 Authorized Problem Analysis Reports (APARs) for **AIX 6L**: If you are using the minimum operating system TL level for AIX 6L listed above, then install all AIX 6L 6.1 Authorized Problem Analysis Reports (APARs) for AIX 6.1 TL 02 SP1, and the following AIX fixes: ■ IZ41855 ■ IZ51456 ■ IZ52319 These 6.1 fixes are present in the following TL levels: ■ AIX 6.1 TL-02 SP-04 and later ■ AIX 6.1 TL-03 SP-02 and later ■ AIX 6.1 TL-04 Authorized Problem Analysis Reports (APARs) for **AIX 7L**: If you are using the minimum operating system TL level for AIX 7.1 listed above, then install all AIX 7L 7.1 Authorized Problem Analysis Reports (APARs) for AIX 7.1 TL 0 SP1, and the following AIX fixes: ■ IZ87216 ■ IZ87564
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
Oracle JDBC/OCI Drivers	**Note:** These APARs are required only if you are using the associated IBM JDK version. APAR required for IBM JDK 1.4.2 (64-bit): ■ IY63533: DK 1.4.2 64-bit SR1 caix64142-20040917 APARs required for IBM 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 IBM 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 "IZ42940 IZ49516 IZ52331 IZ41855 IZ52319"
   ```

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

   http://www-933.ibm.com/support/fixcentral/

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-947.ibm.com/support/entry/portal/Downloads/Software/WebSphere/WebSphere_MQ

2.1.6 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

2.1.6.1 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 to point to a directory path with at least 400 MB available.
- 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 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

`https://support.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 V3 patch Bundle Sep/ 2008 (B.11.31.0809.326a) or higher

Item	Requirement
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)** ■ A.06.20 (HP C/aC++ Swlist Bundle - C.11.31.04) - Sep 2008
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: ■ JDK 6 (HPUX JDK 6.0.05) ■ JDK 5 (HPUX JDK 5.0.15) **Note:** JDK 1.5 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.11.31 ia64 4156074294 unlimited-user license
   ```

   In this example, the version of HP-UX 11i is 11.31.

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 V3 (11.31):**: ▪ PHCO_41479 11.31 Disk Owner Patch ▪ PHKL_38038 VM patch - hot patching/Core file creation directory ▪ PHKL_38938 11.31 SCSI cumulative I/O patch ▪ PHKL_40941 Scheduler patch: post wait hang ▪ PHSS_36354 11.31 assembler patch ▪ PHSS_37042 11.31 hppac (packed decimal) ▪ PHSS_37959 Libcl patch for alternate stack issue fix (QXCR1000818011) ▪ PHSS_39094 11.31 linker + fdp cumulative patch ▪ PHSS_39100 11.31 Math Library Cumulative Patch ▪ PHSS_39102 11.31 Integrity Unwind Library ▪ PHSS_38141 11.31 aC++ Runtime ▪ PHSS_39824 - 11.31 HP C/aC++ Compiler (A.06.23) patch The following operating system patch is required for **HP-UX 11i V3 (11.31) VERITAS File System**: ▪ PHKL_39773: 11.31 VRTS 5.0 GARP6 VRTSvxfs Kernel Patch **Note**: The VERITAS file system is optional. This patch is required only if you want to use a VERITAS File System 5.0.
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_37959
```

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://www.hp.com/go/hpsc

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

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
```

2.1.7 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

2.1.7.1 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 SPARC (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.

2.1.7.2 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

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

For SPARC (64-Bit)

```
# id -a 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 2.1.7.2.3.
- To create a user, refer to the following section.

2.1.7.2.2 Creating an Oracle Software Owner User on All Systems Except AIX Systems 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 2.1.7.3 to continue.

2.1.7.2.3 Modifying an Oracle Software Owner User on All Systems Except AIX Systems 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 2.1.7.3 to continue.

2.1.7.2.4 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 2.1.7.3 to continue.

2.1.7.2.5 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 2.1.7.3 to continue.

2.1.7.3 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:

   For All Systems Except AIX Systems

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

   For AIX Systems

   ```
   # smit security
   ```

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

2.1.8 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

2.1.8.1 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.

2.1.8.2 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.

2.1.8.3 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.

2.1.9 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.

2.1.9.1 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 SPARC (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 SPARC (64-Bit)

  ```
  # more /var/opt/oracle/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 SPARC (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 2.1.9.2.

2.1.9.2 Creating an Oracle Base Directory

Before you create an Oracle base directory, you must identify an appropriate file system with sufficient free disk space.

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 2.1.7), set the `ORACLE_BASE` environment variable to specify the Oracle base directory that you created.

2.1.10 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:

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

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
```

2.1.11 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 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

Table 2–1 shows the Microsoft Windows Server platforms that Oracle Audit Vault collection agent supports for 32-bit versus 64-bit operating systems.

Table 2–1 Audit Vault Collection Agent Support for Microsoft Windows Server Platforms

Platform	32-Bit	64-Bit
Microsoft Windows Server 2003	32-Bit Collection Agent	32-Bit Collection Agent
Microsoft Windows Server 2008	Not Supported	64-Bit Collection Agent

2.2.1 Checking the Hardware Requirements for the Microsoft Windows 64-Bit (x64) 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)	512 MB minimum, 1 GB recommended
Virtual memory	Double the amount of RAM
Hard disk space	453 MB
Video adapter	256 colors
Screen Resolution	1024 X 768 minimum
Processor	AMD64, or Intel Extended memory (EM64T)

2.2.1.1 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 2–3 lists the space requirements for NTFS.

Table 2–3 Disk Space Requirements for NTFS

TEMP Space	Oracle Home	Total
38 MB	415 MB	453 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.

On a Microsoft Windows Server 2008 computer, click **System and Security** in the Windows Control Panel, then click **System**.

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.

   On a Microsoft Windows Server 2008 computer, click **System and Security**, then click **System**, click **Advanced System Settings**, click the **Advanced** tab on System Properties page, and then click **Settings** in the Performance section. Then select the **Advanced** tab on Performance Options page.

   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**.

   On a Microsoft Windows Server 2008 computer, right-click **My Computer** and click **Open**.

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 125 MB of disk space is available in the `temp` directory, then delete all unnecessary files. If the `temp` disk space is still less than 125 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**.

   On a Microsoft Windows Server 2008 computer, click **System and Security**, then click **System**, click **Advanced System Settings**, click the **Advanced** tab on System Properties page, and then click **Environment Variables**.

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

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

Table 2–4 Software Requirements

Requirement	Value
System architecture	Processor: AMD64, or Intel Extended memory (EM64T) For additional information, visit My Oracle Support at `https://support.oracle.com`

Table 2–4 (Cont.) Software Requirements

Requirement	Value
Operating system	Oracle Audit Vault collection agent for x64 Microsoft Windows is supported on the following operating systems: ■ Microsoft Windows Server 2003, all x64 editions ■ Microsoft Windows Server 2003, R2, all x64 editions ■ Microsoft Windows Server 2008 x64 and Microsoft Windows Server 2008 x64 R2 - Standard, Enterprise, Datacenter, Web, and Foundation editions. The Server Core option is not supported. **Note**: Microsoft Windows Multilingual User Interface Pack is supported on Microsoft Windows Server 2003.
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 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:

https://support.oracle.com/

You must register online before using My Oracle Support. After logging in, refer to Article ID 848402.1 for information on the certification matrix.

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:

- Oracle Audit Vault Collection Agent Preinstallation
- Oracle Audit Vault Collection Agent Installation
- Performing a Silent Installation Using a Response File
- Postinstallation Collection Agent Tasks
- Next Steps to Perform as an Oracle Audit Vault Administrator

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 x86-64, 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
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
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. The collection agent user name can only contain alphanumeric characters. 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 2.1.11 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_agent_status
      ```

      The output should be as follows:

      ```
      --------------------------------
      Agent 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 type is:

- **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 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. The collection agent user name can only contain alphanumeric characters.

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:

   `https://support.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:

`https://support.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 JDBC Driver Version 3.0 for SQL Server Connectivity

Oracle Audit Vault requires a JDBC connection to the SQL Server database. Audit Vault supports the use of Microsoft SQL Server JDBC Driver version 3.0 for this purpose. This driver provides high performance native access to Microsoft SQL Server 2000, 2005, and 2008 database data sources.

SQL Server JDBC Driver version 3.0 is not compatible with the Oracle Audit Vault 10.2.3.2.x Server and collection agents, which require version 1.2 of this driver. Version 1.2 is no longer available for download from Microsoft SQL Server.

To download SQL Server JDBC Driver version 3.0:

1. Go to the following Web site:
   `http://msdn.microsoft.com/en-us/sqlserver/aa937724`
2. Click the **Download Microsoft SQL Server JDBC Driver 3.0** link.
3. Select `1033\sqljdbc_3.0.1301.101_enu.tar.gz` and then click **Download**.
4. In a temporary directory, extract the files from this tar file.
5. Find the `sqljdbc.jar` file and place it in the `$ORACLE_HOME/jlib` directories in both the Audit Vault Server and Audit Vault collection agent homes. You can use this file for both Windows and UNIX systems.
6. Verify that the `sqljdbc.jar` file is present in the Oracle Audit Vault collection agent before you start the collection agent.

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

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. If the agent 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. Start the collection agent.

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

4. 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

Removing Oracle Audit Vault Collection Agent Software

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

- Stopping the Oracle Audit Vault Collection Agent Software
- Removing Oracle Audit Vault Collection Agent Software Using the Deinstallation Tool
- 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.

4.1 Stopping the 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:
   a. Stop all collectors (`avctl stop_collector`) running on the collection agent
   b. Stop the collection agent itself (`avctl stop_agent`).
2. Continue to Section 4.2.1.

4.2 Removing Oracle Audit Vault Collection Agent Software Using the Deinstallation Tool

The `deinstall` command removes Oracle Audit Vault Collection Agent installation.

The following sections describe the command, and provide information about additional options to use the command:

- About the Deinstallation Tool
- Example of Running the Deinstall Command
- Example of a Deinstallation Parameter File

4.2.1 About the Deinstallation Tool

The Deinstallation Tool (`deinstall`) is available in the installation media before installation, and is available in Oracle home directories after installation. It is located in the `$ORACLE_HOME/deinstall` directory.

The `deinstall` command uses the information you provide, plus information gathered from the software home to create a parameter file. You can alternatively supply a parameter file generated previously by the `deinstall` command using the `-checkonly` option, or by editing the response file template.

Caution: When you run the `deinstall` command, if the central inventory (oraInventory) contains no other registered homes besides the home that you are deconfiguring and removing, then the deinstall command removes the following files and directory contents in the Oracle base directory of the Oracle Database installation owner:

- `admin`
- `cfgtoollogs`
- `checkpoints`
- `diag`
- `oradata`
- `flash_recovery_area`

Oracle strongly recommends that you configure your installations using an Optimal Flexible Architecture (OFA) configuration, and that you reserve Oracle base and Oracle home paths for exclusive use of Oracle software. If you have any user data in these locations in the Oracle base that is owned by the user account that owns the Oracle software, then the `deinstall` command deletes this data.

The command uses the following syntax, where variable content is indicated in italics:

```
deinstall -home complete path of Oracle home [-silent] [-checkonly] [-local]
[-cleanupObase] [-paramfile complete path of input parameter property file]
[-params name1=value
name2=value . . .] [-o complete path of directory for saving files] [-help]
```

The default method for running the deinstall tool is from the deinstall directory in the Oracle home as the installation owner:

```
$ $ORACLE_HOME/deinstall/deinstall
```

Provide information about your servers as prompted or accept the defaults.

The `deinstall` command stops Oracle software, and removes Oracle software and configuration files on the operating system.

In addition, you can run the deinstall tool from other locations, or with a parameter file, or select other options to run the tool.

The options are:

- `-home`

  Use this flag to indicate the home path of the Oracle home to check or deinstall. To deinstall Oracle software using the `deinstall` command in the Oracle home you

plan to deinstall, provide a parameter file in another location, and do not use the `-home` flag.

If you run deinstall from the `$ORACLE_HOME/deinstall` path, then the `-home` flag is not required because the tool knows from which home it is being run. If you use the standalone version of the tool, then `-home` is mandatory.

- `-silent`

  Use this flag to run the command in silent or response file mode. If you use the `-silent` flag, then you must use the `-paramfile` flag, and provide a parameter file that contains the configuration values for the Oracle home to deinstall or deconfigure.

  You can generate a parameter file to use or modify by running `deinstall` with the `-checkonly` flag. The `deinstall` command then discovers information from the Oracle home to deinstall and deconfigure. It generates the properties file, which you can then use with the `-silent` option.

  You can also modify the template file `deinstall.rsp.tmpl`, located in the `response` folder.

- `-checkonly`

  Use this flag to check the status of the Oracle software home configuration. Running the command with the `-checkonly` flag does not remove the Oracle configuration. The `-checkonly` flag generates a parameter file that you can use with the `deinstall` command.

- `-local`

  Use this flag on a multinode environment to deinstall Oracle software in a cluster.

  When you run `deinstall` with this flag, it deconfigures and deinstalls the Oracle software on the local node (the node where `deinstall` is run). On remote nodes, it deconfigures Oracle software, but does not deinstall the Oracle software.

- `-cleanupOBase`

  Use this flag to force the removal of all the contents in the Oracle base directory, including the `admin`, `oradata`, and `flash_recovery_area` directories. This flag forces an Oracle base removal only if the Oracle home that you specify with the `-home` flag is the only Oracle home associated with the Oracle base directory. This flag is available with the deconfig tool available in the Oracle Grid Infrastructure and Oracle Database 11.2.0.3 patch release, and from Oracle Technology Network (OTN).

- `-paramfile` *`complete path of input parameter property file`*

  Use this flag to run `deinstall` with a parameter file in a location other than the default. When you use this flag, provide the complete path where the parameter file is located.

  The default location of the parameter file depends on the location of `deinstall`:

  – From the installation media or stage location: `$ORACLE_HOME/inventory/response`.

  – From a unzipped archive file from OTN: `/`*`ziplocation`*`/response`.

  – After installation from the installed Oracle home: `$ORACLE_HOME/deinstall/response`.

- `-params` [`name1=`*`value`* `name 2=`*`value`* `name3=`*`value`* `...`]

Use this flag with a parameter file to override one or more values that you want to change in a parameter file you have already created.

- `-o` *`complete path of directory for saving response files`*

  Use this flag to provide a path other than the default location where the properties file (`deinstall.rsp.tmpl`) is saved.

  The default location of the parameter file depends on the location of `deinstall`:

  - From the installation media or stage location before installation: `$ORACLE_HOME/`
  - From a unzipped archive file from OTN: `/`*`ziplocation`*`/response/`.
  - After installation from the installed Oracle home: `$ORACLE_HOME/deinstall/response`.

- `-help`

  Use the help option (`-help`) to obtain additional information about the command option flags.

4.2.2 Example of Running the Deinstall Command

As the `deinstall` command runs, you are prompted to provide the home directory of the Oracle software to remove from your system. Provide additional information as prompted.

Use the optional flag `-paramfile` to provide a path to a parameter file.

In the following example, the `deinstall` command is in the path `/u01/app/oracle/product/10.3.0/client_1/deinstall`, and it uses a parameter file in the software owner location `/home/usr/oracle`:

```
# cd /u01/app/oracle/product/10.3.0/client_1/deinstall/
# ./deinstall -paramfile /home/usr/oracle/myparamfile.tmpl
```

If you enter the deinstall command outside of the `$ORACLE_HOME/deinstall` folder, then help is displayed, unless you enter a `-home` flag and provide a path. If you run the deinstall command from the `$ORACLE_HOME/deinstall` folder, then deinstallation starts without prompting you for a home address.

4.2.3 Example of a Deinstallation Parameter File

You can run the `deinstall` command with the `-paramfile` option to use the values you specify in the parameter file. The following is an example of a parameter file, in which the Oracle Database binary owner is `oracle`, the Oracle Database home (Oracle home) is in the path `/u01/app/oracle/product/10.3.0/av_agent/`, the Oracle base (where other Oracle software is installed) is `/u01/app/oracle/`, the central Oracle Inventory home (`oraInventory`) is `/u01/app/oraInventory`, and the client is `client1`:

```
ORACLE_BASE=/u01/app/oracle
INVENTORY_LOCATION=/u01/app/oraInventory
CRS_HOME=false
HOME_TYPE=CLIENT
silent=false
local=false
LOCAL_NODE=node1
ObaseCleanupPtrLoc=/var/tmp/install/orabase_cleanup.lst.
LOGDIR=/u01/app/oraInventory/logs/
```

```
ORACLE_HOME=/u01/app/oracle/product/10.3.0/av_agent
```

4.3 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.

4.3.1 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.

4.3.1.1 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 4.1 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.

4.3.1.2 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 4.1 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.

4.3.2 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\10.3.0\av_agent_1\bin
   ```

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

4.3.3 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.

4.3.4 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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