Oracle® Database
Client Installation Guide

18c for Microsoft Windows
E83890-02
August 2018

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Oracle Database Client Installation Guide, 18c for Microsoft Windows

E83890-02

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Preface

This guide explains how to install and configure Oracle Database Client. This guide also provides information about postinstallation tasks and how to remove the database client software.

This preface contains these topics:

- Audience

- Documentation Accessibility

- Set Up Java Access Bridge to Implement Java Accessibility
  Install Java Access Bridge so that assistive technologies on Microsoft Windows systems can use the Java Accessibility API.

- Related Documentation

- Conventions

Audience

This guide is intended for anyone responsible for installing Oracle Database Client 18c.

To use this document, you need the following:

- A supported Microsoft Windows operating system installed and tested on your computer system

- Administrative privileges on the computer where you are installing the Oracle Database software

- Familiarity with object-relational database management concepts

Additional installation guides for Oracle Database, Oracle Real Application Clusters, Oracle Clusterware, Oracle Database Examples, and Oracle Enterprise Manager Cloud Control are available at the following URL:

`http://docs.oracle.com`

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 that have purchased support 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.

Set Up Java Access Bridge to Implement Java Accessibility

Install Java Access Bridge so that assistive technologies on Microsoft Windows systems can use the Java Accessibility API.

Java Access Bridge is a technology that enables Java applications and applets that implement the Java Accessibility API to be visible to assistive technologies on Microsoft Windows systems.

Refer to *Java Platform, Standard Edition Accessibility Guide* for information about the minimum supported versions of assistive technologies required to use Java Access Bridge. Also refer to this guide to obtain installation and testing instructions, and instructions for how to use Java Access Bridge.

Related Topics

*   *Java Platform, Standard Edition Java Accessibility Guide*

Related Documentation

For more information, see these Oracle resources:

*   *Oracle Database Concepts*
*   *Oracle Database Examples Installation Guide*
*   *Oracle Grid Infrastructure Installation Guide*
*   *Oracle Enterprise Manager Cloud Control Basic Installation Guide*
*   *Oracle Database Upgrade Guide*
*   *Oracle Database 2 Day DBA*
*   *Oracle Database Error Messages*
*   *Oracle Database Sample Schemas.*
*   *Oracle Database Installation Guide for Microsoft Windows*
*   *Oracle Database Licensing Information*
*   *Oracle Database Administrator's Reference Guide for Microsoft Windows*
*   *Oracle Enterprise Manager Cloud Control Basic Installation Guide*
*   *Oracle Database Net Services Administrator's Guide*
*   *Oracle Automatic Storage Management Administrator's Guide*
*   *Oracle Real Application Clusters Installation Guide for Microsoft Windows x64 (64-Bit)*
*   *Oracle Universal Installer and OPatch User's Guide for Windows and UNIX*
*   *Oracle Database Globalization Support Guide*
*   *Oracle Database Vault Administrator's Guide*

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.

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Oracle Database Client Installation Checklist

Use checklists to review system requirements, and to plan and carry out Oracle Database Client installation. Oracle recommends that you use checklists as part of your installation planning process. Using checklists can help you to confirm that your server hardware and configuration meet minimum requirements for this release, and can help you to ensure you carry out a successful installation.

- Server Hardware Checklist for Oracle Database Client Installation
  Use this checklist to check hardware requirements for Oracle Database Client.

- Accessing Documentation

- Operating System Checklist for Oracle Database Client Installation
  Use this checklist to check minimum operating system requirements for Oracle Database Client.

- Server Configuration Checklist for Oracle Database Client Installation
  Use this checklist to check minimum server configuration requirements for Oracle Database Client installations.

- Oracle User Environment Configuration Checklist for Oracle Database Client Installation
  Use this checklist to plan operating system users, groups, and environments for Oracle Database Client management.

- Storage Checklist for Oracle Database Client Installation
  Use this checklist to review storage minimum requirements and assist with configuration planning.

- Installer Planning Checklist for Oracle Database Client Installation
  Use this checklist to prepare yourself before starting Oracle Universal Installer.

Server Hardware Checklist for Oracle Database Client Installation

Use this checklist to check hardware requirements for Oracle Database Client.

Table 1-1   Server Hardware Checklist for Oracle Database Client Installation

Check	Task
Server Make and Architecture	Confirm that server make, model, core architecture, and host bus adaptors (HBA) or network interface controllers (NIC) are supported to run with Oracle Database and Oracle Grid Infrastructure. If you are installing from a DVD, then ensure the server has a DVD drive.
Minimum RAM	2 GB RAM recommended

Table 1-1   (Cont.) Server Hardware Checklist for Oracle Database Client Installation

Check	Task
Minimum network connectivity	Server is connected to a network
Video Adapter	256 colors
Server Display Cards	At least 1024 x 768 display resolution, which Oracle Universal Installer requires

Accessing Documentation

The documentation for this release includes platform-specific documentation and generic product documentation.

Operating System Checklist for Oracle Database Client Installation

Use this checklist to check minimum operating system requirements for Oracle Database Client.

Table 1-2   Operating System Checklist for Oracle Database Client Installation on Microsoft Windows

Item	Task
Operating system general requirements	Oracle Database Client for Windows x64 is supported on the following operating system versions: • Windows 7 x64 - Professional, Enterprise, and Ultimate editions • Windows 8.1 x64 - Pro and Enterprise editions • Windows 10 x64 - Pro, Enterprise, and Education editions • Windows Server 2012 x64 - Standard, Datacenter, Essentials, and Foundation editions • Windows Server 2012 R2 x64 - Standard, Datacenter, Essentials, and Foundation editions • Windows Server 2016 x64 - Standard, Datacenter, and Essentials editions

Server Configuration Checklist for Oracle Database Client Installation

Use this checklist to check minimum server configuration requirements for Oracle Database Client installations.

Table 1-3   Server Configuration Checklist for Oracle Database Client Installation

Check	Task
Disk space allocated to the temporary directory	At least 130 MB of space in the temporary directory
Swap space allocation relative to RAM	Double the amount of RAM
Groups and Users	Oracle recommends that you create groups and user accounts required for your security plans before starting installation. Installation owners have resource limits settings and other requirements. Group and user names must use only ASCII characters.
Mount point paths for the software binaries	Oracle recommends that you create an Optimal Flexible Architecture configuration as described in the appendix "Optimal Flexible Architecture" in *Oracle Database Installation Guide for Microsoft Windows* for your platform.
Ensure that the Oracle home (the Oracle home path that you select for Oracle Database) uses only ASCII characters.	The ASCII character restriction includes installation owner user names, which are used as a default for some home paths, as well as other directory names you may select for paths.
Set locale (if needed)	Specify the language and the territory, or locale, in which you want to use Oracle components. A locale is a linguistic and cultural environment in which a system or program is running. National Language Support (NLS) parameters determine the locale-specific behavior on both servers and clients. The locale setting of a component determines the language of the user interface of the component, and the globalization behavior, such as date and number formatting.

Oracle User Environment Configuration Checklist for Oracle Database Client Installation

Use this checklist to plan operating system users, groups, and environments for Oracle Database Client management.

Table 1-4   Oracle User Environment Configuration Checklist for Oracle Database Client Installation

Check	Task
Oracle Inventory and `ORA_INSTALL` Group Requirements	The Oracle Inventory directory is the central inventory of Oracle software installed on your system. You do not need to create the Oracle central inventory or the `ORA_INSTALL` group as Oracle Universal Installer creates it for you.
Create operating system groups and users for standard or role-allocated system privileges	Create operating system groups and users depending on your security requirements, as described in this install guide.

Table 1-4   (Cont.) Oracle User Environment Configuration Checklist for Oracle Database Client Installation

Check	Task
Unset Oracle Software Environment Variables	If you have an existing installation on your system, and use the same user account to install this installation, then unset the `ORACLE_HOME`, `ORACLE_BASE`, `ORACLE_SID`, `TNS_ADMIN` environment variables and any other environment variable set for the Oracle installation user that is connected with Oracle software homes.

Storage Checklist for Oracle Database Client Installation

Use this checklist to review storage minimum requirements and assist with configuration planning.

Table 1-5   Storage Checklist for Oracle Database Client Installation

Check	Task
Minimum local disk storage space for Oracle software	At least 485 MB for an Instant Client installation At least 1635 MB for Administrator installation At least 1235 MB for Runtime installation At least 1635 MB for Custom installation
Recommended file system	Ensure that you have one of the following storage options available: • Oracle ASM Cluster File System (Oracle ACFS) • Oracle Automatic Storage Management (Oracle ASM) • NTFS File System or Resilient File System (ReFS) The database files must be placed on Oracle ASM if you are using Oracle ACFS; otherwise they can be placed on NTFS or ReFS.

Installer Planning Checklist for Oracle Database Client Installation

Use this checklist to prepare yourself before starting Oracle Universal Installer.

Table 1-6   Installer Planning Checklist for Oracle Database Client Installation

Check	Task
Read the Release Notes	Review release notes for your platform, which are available for your release at the following URL: http://docs.oracle.com/en/database/database.html
Reviewing the Licensing Information	You are permitted to use only those components in the Oracle Database media pack for which you have purchased licenses.

Table 1-6   (Cont.) Installer Planning Checklist for Oracle Database Client Installation

Check	Task
Review Oracle Support Certification Matrix	New platforms and operating system software versions might be certified after this guide is published, review the certification matrix on the My Oracle Support website for the most up-to-date list of certified hardware platforms and operating system versions: https://support.oracle.com/ You must register online before using My Oracle Support. After logging in, from the menu options, select the **Certifications** tab. On the Certifications page, use the **Certification Search** options to search by Product, Release, and Platform. You can also search using the **Certification Quick Link** options such as Product Delivery, and Lifetime Support.
Decide the client installation type	You can choose one of the following installation types when installing Oracle Database Client: **Instant Client:** Enables you to install only the shared libraries required by Oracle Call Interface (OCI), Oracle C++ Call Interface (OCCI), Pro*C, or Java database connectivity (JDBC) OCI applications. This installation type requires much less disk space than the other Oracle Database Client installation types. For more information about Oracle Database Instant Client see the following URL: http://www.oracle.com/technetwork/database/features/instant-client/index.html **Administrator:** Enables applications to connect to an Oracle Database instance on the local system or on a remote system. It also provides tools that enable you to administer Oracle Database. **Runtime:** Enables applications to connect to an Oracle Database instance on the local system or on a remote system. **Custom:** Enables you to select individual components from the list of Administrator and Runtime components.
Decide if you need 32-bit client software	The 64-bit client software does not contain any 32-bit client binaries. If you require 32-bit client binaries on 64-bit platforms, then install the 32-bit binaries from the respective 32-bit client software. However, when you install the 32-bit client binaries on 64-bit platforms, the installer checks for the existence of 32-bit software. For more information refer to My Oracle Support notes 1243374.1 and 781432.1 if you intend to install both 32-bit and 64-bit Oracle Database Client software on the same system: • https://support.oracle.com/CSP/main/article?cmd=show&type=NOT&id=1243374.1 • https://support.oracle.com/CSP/main/article?cmd=show&type=NOT&id=781432.1
Obtain your My Oracle Support account information.	During installation, you require a My Oracle Support user name and password to configure security updates, download software updates, and other installation tasks. You can register for My Oracle Support at the following URL: https://support.oracle.com/

Table 1-6   (Cont.) Installer Planning Checklist for Oracle Database Client Installation

Check	Task
Oracle Database Client and Oracle Database interoperability	For information about interoperability between Oracle Database Client and Oracle Database releases, see My Oracle Support Note 207303.1: https://support.oracle.com/epmos/faces/DocContentDisplay?id=207303.1
Unsupported Oracle Database Client Components	The following 32-bit Oracle Database Client components are not supported on Windows: • Oracle Connection Manager • Oracle Net Listener

2
Oracle Database Client Preinstallation Tasks

Learn about the tasks that you must complete before you start Oracle Universal Installer.

- **Oracle Database Client Minimum Hardware Requirements**
  Learn about the hardware component and hard disk space requirements.

- **Oracle Database Client Software Requirements**
  Learn about the Oracle Database Client software requirements.

- **Creating Oracle Home User**
  During Oracle Database Client installation, you can specify an optional Oracle Home User associated with the Oracle home.

- **Creating Users, Groups and Environments for Oracle Database Client**
  Before installation, create operating system groups, users, and configure user environments.

- **Managing User Accounts with User Account Control**
  To ensure that only trusted applications run on your computer, the Windows operating systems supported for Oracle Database Client provide User Account Control.

- **Remote Desktop Services**
  Oracle supports installing, configuring, and running Oracle Database Client through Remote Desktop Services.

- **Microsoft Windows Servicing Options**
  On Microsoft Windows 10 systems, Microsoft introduced new servicing options.

- **Default Share Configuration Requirement**
  The prerequisite checks during Oracle Database Client installation require that the system drive on your computer has default share configured on it.

- **Installation Requirements for Web Browsers**
  Web browsers are required to use Oracle Enterprise Manager Database Express and Oracle Enterprise Manager Cloud Control.

- **Microsoft Hyper-V Requirements**
  Microsoft Hyper-V enables you to create and manage a virtualized computing environment by running multiple operating systems simultaneously on a single computer and isolate operating systems from each other.

Oracle Database Client Minimum Hardware Requirements

Learn about the hardware component and hard disk space requirements.

- **Hardware Component Requirements for Windows x64**
  The following table lists the hardware components that are required for Oracle Database Client on Windows x64.

- Hard Disk Space Requirements
  Oracle strongly recommends that you install the Oracle database home (Oracle database binaries, trace files, and so on) on Oracle Automatic Storage Management Cluster File System (Oracle ACFS) or New Technology File System (NTFS).

- Verifying Hardware Requirements
  Use this procedure to verify your server configuration requirements.

Hardware Component Requirements for Windows x64

The following table lists the hardware components that are required for Oracle Database Client on Windows x64.

Table 2-1   Windows x64 Hardware Requirements

Requirement	Value
System Architecture	Processor: AMD64 and Intel EM64T
Physical memory (RAM)	2 GB minimum
Virtual memory (swap)	Double the amount of RAM
Disk space	Total ranges from 430 - 1570 MB
Video adapter	256 colors
Screen Resolution	1024 X 768 minimum

> **Note:**
>
> Oracle provides 32-bit and 64-bit versions of Oracle Database Client for Windows. Oracle certifies 32-bit Oracle Database Client running on Windows x64 only.

Hard Disk Space Requirements

Oracle strongly recommends that you install the Oracle database home (Oracle database binaries, trace files, and so on) on Oracle Automatic Storage Management Cluster File System (Oracle ACFS) or New Technology File System (NTFS).

The database files must be placed on Oracle Automatic Storage Management (Oracle ASM) if using Oracle ACFS or on NTFS. Oracle recommends usage of Oracle ACFS and Oracle ASM or NTFS to ensure security of these files.

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

The hard disk requirements for Oracle Database Client components includes space to install Java Runtime Environment (JRE) and Oracle Universal Installer on the partition where the operating system is installed. If sufficient space is not available, the installation fails and an error message appears.

The following table lists the disk space requirements on NTFS. The values in this table include the starter database.

Table 2-2   Windows x64 Disk Space Requirements on NTFS

Installation Type	TEMP Space	*Directory*:\ Program Files \Oracle\Inventory	Oracle Home	Total
Instant Client	136 MB	166 KB	361 MB	485 MB
Administrator	140 MB	1.6 MB	1.85 GB	1635 MB
Runtime	130 MB	1.55 MB	1.35 GB	1235 MB
Custom (all components installed)	145 MB	2.0 MB *	1.86 GB *	1635 MB *

* Disk space requirements vary, depending on the components selected.

> **Note:**
>
> If you want to configure only the Instant Client Light component of Instant Client, then you need 30–32 MB of disk space to store the related files.

Related Topics

- Configuring Instant Client Light
  To configure Instant Client Light, you must make it the default instead of Instant Client.

Verifying Hardware Requirements

Use this procedure to verify your server configuration requirements.

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

1. Determine the physical RAM size.

   For example, on a computer running Windows Server 2012 R2, click **System and Security**, 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 example, on a computer running Windows Server 2012 R2, 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 example, on a computer running Windows Server 2012 R2, 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 is required for the Oracle software to be installed.

   On Windows x64, if there is less than 130 MB of disk space available in the `temp` directory, then delete all unnecessary files. If the temp disk space is still less than 130 MB, then set the `TEMP` or `TMP` environment variable to point to a different hard drive location.

   For example, to change the environment variables on a computer running Windows Server 2012 R2, click **System and Security**, then click **System**, click **Advanced System Settings**, click the **Advanced** tab on System Properties page, and then click **Environment Variables**.

Oracle Database Client Software Requirements

Learn about the Oracle Database Client software requirements.

- Oracle Database Client Software Requirements
  Lists the software requirements for Oracle Database client.
- Instant Client Light Language and Character Set Requirements
  Describes the requirements to use Instant Client Light.

Oracle Database Client Software Requirements

Lists the software requirements for Oracle Database client.

Table 2-3   Windows x64 Software Requirements

Requirement	Value
Operating System	Oracle Database for Windows x64 is supported on the following operating systems: • Windows 7 x64 - Professional, Enterprise, and Ultimate editions • Windows 8.1 x64 - Pro and Enterprise editions • Windows 10 x64 - Pro, Enterprise, and Education editions • Windows Server 2012 x64 - Standard, Datacenter, Essentials, and Foundation editions • Windows Server 2012 R2 x64 - Standard, Datacenter, Essentials, and Foundation editions • Windows Server 2016 x64 - Standard, Datacenter, and Essentials editions **Note:** • Windows Multilingual User Interface Pack is supported. • The Server Core option is not supported.

Table 2-3   (Cont.) Windows x64 Software Requirements

Requirement	Value
Virtualization	Oracle certifies the following virtualization technologies with Oracle Database Client on Windows:
	• Oracle VM Server
	• Microsoft Hyper-V
	For more detailed information on certified Oracle VM Server combinations, check My Oracle Support note 464754.1. For more information on certified Hyper-V combinations, you can visit:
	http://www.oracle.com/technetwork/database/virtualizationmatrix-172995.html
Compiler	The following components are supported with the Microsoft Visual C++ 2013 Update 5, Microsoft Visual C++ 2015 Update 3, Microsoft Visual C++ 2017, and Intel 14.0 C compilers:
	• Oracle Call Interface
	• External callouts
	• Pro*C/C++
	• Oracle XML Developer's Kit (XDK)
	Oracle C++ Call Interface supports:
	• Microsoft Visual C++ 2013 Update 5
	• Microsoft Visual C++ 2015 Update 3 - OCCI libraries are installed under `ORACLE_HOME\oci\lib\msvc\vc14`. When developing OCCI applications with MSVC++ 2015, ensure that the OCCI libraries are correctly selected from this directory for linking and executing.
	• Microsoft Visual C++ 2017 - Use OCCI library built with MSVC++ 2015, Update 3, when developing OCCI applications with MSVC++ 2017. Ensure that the OCCI libraries are selected from `ORACLE_HOME\oci\lib\msvc\vc14` directory for linking and executing.
	• Intel 14.0 C compilers with Microsoft Visual Studio 2013 STLs
	Pro*COBOL supports:
	• Micro Focus Visual COBOL 2.2 - Update 2
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 SSL
	• Named Pipes
Oracle Database	To connect with Oracle Database Client 18c, the following are required:
	• Oracle Database Server is version 11.2.0.4 or later.
	• If the earlier Oracle Database Server is running on the same computer as Oracle Database Client 18c, a bequeath connection cannot be used.
	Oracle recommends upgrading Oracle Database to the latest patchset (11.2.0.4 or later). You can download the patchset from the Patches and Updates section of My Oracle Support at
	`https://support.oracle.com`

Instant Client Light Language and Character Set Requirements

Describes the requirements to use Instant Client Light.

In addition to the requirements, if you plan to use Instant Client Light, then the applications must use the following languages and character sets:

- **Language:** Any language that Oracle supports, but only US English error messages returns errors on the client side.
- **Territory:** Any territory that Oracle supports.
- **Character sets:**
  - Single byte
    * US7ASCII
    * WE8DEC
    * WE8ISO8859P1
    * WE8MSWIN1252
  - Unicode
    * UTF8
    * AL16UTF16
    * AL32UTF8

    Instant Client Light can connect to databases having one of the following database character sets. If a character set other than those in the list is used as the client or database character set, then an error is returned.

    * US7ASCII
    * WE8DEC
    * WE8MSWIN1252
    * WE8ISO8859P1
    * WE8EBCDIC37C
    * WE8EBCDIC1047
    * UTF8
    * AL32UTF8

    Instant Client Light can also operate with the OCI Environment handles created in the OCI_UTF16 mode.

    The language, territory, and character sets are determined by the `NLS_LANG` parameter, which is stored in the registry under the `HKEY_LOCAL_MACHINE` `\SOFTWARE\ORACLE\`*`KEY_HomeName`*`\NLS_LANG` subkey, where *`HomeName`* is the unique name identifying the Oracle home. The Registry setting is overridden by the `NLS_LANG` environment variable.

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> **✎ Note:**
>
> AL32UTF8 is the Oracle Database character set that is appropriate for XMLType data. It is equivalent to the IANA registered standard UTF-8 encoding, which supports all valid XML characters.
>
> Do not confuse Oracle Database database character set UTF8 (no hyphen) with database character set AL32UTF8 or with character encoding UTF-8. Database character set UTF8 has been superseded by AL32UTF8. Do not use UTF8 for XML data. UTF8 supports only Unicode version 3.1 and earlier; it does not support all valid XML characters. AL32UTF8 has no such limitation.
>
> Using database character set UTF8 for XML data potentially causes an irrecoverable error or affects security negatively. If a character that is not supported by the database character set appears in an input-document element name, then a replacement character (usually "?") is substituted for it. This terminates parsing and raises an exception.

Creating Oracle Home User

During Oracle Database Client installation, you can specify an optional Oracle Home User associated with the Oracle home.

For example, assume that you use an Administrator user named `OraSys` to install the software (Oracle Installation user), then you can specify the `ORADOMAIN\OraDb` domain user as the Oracle Home User for this installation. The specified Oracle home domain user must exist before you install the Oracle Database Client software.

The Oracle Home User can be either the Windows Built-in Account (LocalService) or a Windows User Account. This account is used for running the Windows services for the Oracle home. Do not log in using this account to perform administrative tasks.

Windows User Account can be a Windows Local User, Windows Domain User, Managed Services Account (MSA), or Group Managed Services Account (gMSA). Starting with Oracle Database 18c, Group Managed Services Account (gMSA) is introduced as an additional option.

Using Windows built-in account, MSA, or gMSA enables you to install Oracle Database Client, and create and manage Database services without passwords.

If you specify an existing user as the Oracle Home User, then the Windows User Account you specify can either be a Windows Domain User or a Windows Local User. If you specify a non-existing user as the Oracle Home User, then the Windows User Account you specify must be a Windows Local User. The new user is then created during installation and the created user is denied interactive logon privileges to the Windows computer. However, a Windows administrator can manage this account like any other Windows account.

For enhanced security, Oracle recommends that you use the standard Windows User Account or Windows Built-in Account (LocalService), which is not an administrator account, to install Oracle Database Client.

> **✎ Note:**
>
> You cannot change the Oracle Home User after the installation is complete. If you must change the Oracle Home User, then you must reinstall the Oracle Database Client software.

When you specify an Oracle Home User, the installer configures that user as the Oracle Service user for all software services that run from the Oracle home. The Oracle Service user is the operating system user that the Oracle software services run as, or the user from which the services inherit privileges.

Silent installation is enhanced to support password prompt for the Oracle Home User. So, customers and independent software vendors (ISV) can use response files without hard coding the password into the source code.

Creating Users, Groups and Environments for Oracle Database Client

Before installation, create operating system groups, users, and configure user environments.

Oracle Universal Installer creates other groups, such as, `ORA_INSTALL`, `ORA_CLIENT_LISTENERS`, `ORA_HOMENAME_SVCSIDS` during installation and you must not change these groups, memberships, and ACLs associated with various Oracle created groups.

The groups that are created are explained as follows:

*   **ORA_INSTALL:** This is a system wide group for Oracle's internal use, which is automatically populated with Oracle Home users. If a database server is running on this system, it grants dupsocket privilege to the group's members to allow listeners to operate. If no database server is present, this group is not used.

*   **ORA_CLIENT_LISTENERS:** This group is for internal Oracle use. It contains listeners installed on client homes through custom installs. If a database server is running on this system, it grants dupsocket privilege to the group's members to allow listeners to work. If no database server is present, this group is not used.

*   **ORA_*HOMENAME*_SVCSIDS:** This group is for Oracle's internal use and is automatically populated. It contains Service SIDs for all Windows services (e.g. Oracle Services for MTS, Listener, and Connection Manager) on client homes installed through custom installs. This group is granted full control to the specific client Oracle Home and client Oracle Base.

*   **ORA_DBA and ORA_*HOMENAME*_DBA:** If the system is only used for clients, membership provides start/stop privileges to Oracle Windows services running from client homes. `ORA_DBA` members are granted start/stop privileges for all Oracle Windows services on the system, while membership in `ORA_HOMENAME_DBA` gives start/stop privileges to Oracle Windows services running from the specific home.

Managing User Accounts with User Account Control

To ensure that only trusted applications run on your computer, the Windows operating systems supported for Oracle Database Client provide User Account Control.

If you have enabled this security feature, then, depending on how you have configured it, Oracle Universal Installer prompts you for either your consent or your credentials when installing Oracle Database Client. Provide either the consent or your Windows Administrator credentials as appropriate.

If User Account Control is enabled, and you are logged in as the local Administrator, then you can successfully run each of these commands. However, if you are logged in as "a member of the Administrator group," then you must explicitly start these tasks with Windows Administrator privileges. All the Oracle shortcuts that require Administrator privileges start as "Administrator" automatically when you click the shortcuts. However, if you run the above tools from a Windows command prompt, you must run them from an Administrator command prompt.

> **Note:**
>
> You must have Administrator privileges to run some Oracle tools, such as Database Configuration Assistant, Oracle Net Configuration Assistant, and OPatch, or to run any tool or application that writes to any directory within the Oracle home.
> OPatch does not have a shortcut and has to be run from an Administrator command prompt.

To start a command prompt window with Windows Administrator privileges:

1. On your desktop, create a shortcut for the command prompt window. An icon for that shortcut appears on the desktop.

2. Right-click the icon for the newly created shortcut, and specify **Run as administrator**.

When you open this window, the title bar reads Administrator: Command Prompt. Commands run from within this window are run with Administrator privileges.

> **See Also:**
>
> *Oracle Database Administrator's Reference for Microsoft Windows*

Remote Desktop Services

Oracle supports installing, configuring, and running Oracle Database Client through Remote Desktop Services.

To install Oracle Database Client, Oracle recommends that you start all configuration tools from the Remote Desktop server console session of the server.

Platform-specific support information is as follows:

- Windows client operating systems: The Remote Desktop is only available in Single User Mode.

- Windows server operating systems: You can have multiple Remote Desktop sessions.

> **See Also:**
>
> - The Microsoft website for more information about Remote Desktop Services
>
>   http://www.microsoft.com/
>
> - The My Oracle Support website for the latest Terminal Services and Remote Desktop Services information
>
>   https://support.oracle.com/

Microsoft Windows Servicing Options

On Microsoft Windows 10 systems, Microsoft introduced new servicing options.

Oracle Database supports the following servicing options:

- Semi-Annual Channel

- Long-Term Servicing Channel

Other servicing options, such as Semi-Annual Channel (Targeted) are not supported. Oracle previously supported the former Windows servicing options, such as the Current Branch for Business (CBB) and Long-Term Servicing Branch (LTSB).

> **Note:**
>
> Oracle supports its database products on these channel releases that become generally available for as long as Microsoft supports the channel version. Once Microsoft support ends for a specific channel version, Oracle's support ends for that version as well. Oracle may recommend that customers wait until relevant Oracle patches have been released before upgrading to a particular channel version. Oracle may recommend or discourage the installation of a specific channel version if it significantly affects the operation of Oracle software, either positively or negatively. If such a statement is deemed necessary, Oracle will disseminate this statement on My Oracle Support.

Default Share Configuration Requirement

The prerequisite checks during Oracle Database Client installation require that the system drive on your computer has default share configured on it.

Use the `net use` command to verify, for example:

```
C:\> net use \\hostname\c$
The command completed successfully
```

Ensure that the current user, the user in the Administrator group, has all the privileges on the default share.

Installation Requirements for Web Browsers

Web browsers are required to use Oracle Enterprise Manager Database Express and Oracle Enterprise Manager Cloud Control.

Web browsers must support Java Script, and the HTML 4.0 and CSS 1.0 standards. For a list of browsers that meet these requirements, see the Oracle Enterprise Manager certification matrix on My Oracle Support:

https://support.oracle.com/CSP/main/article?cmd=show&type

Microsoft Hyper-V Requirements

Microsoft Hyper-V enables you to create and manage a virtualized computing environment by running multiple operating systems simultaneously on a single computer and isolate operating systems from each other.

Microsoft Hyper-V enables built-in integration services for supported guest operating systems to improve the integration between a computer and a virtual machine.

> **Note:**
>
> Microsoft Hyper-V for specific Oracle Database and Microsoft Hyper-V certified combinations

3

Installing Oracle Database Client

Learn how to run the installer to install Oracle Database Client.

- **Installation Considerations for Oracle Database Client**
  The Oracle Database Client software is available on the Oracle Technology Network (OTN) website. In most cases, Oracle Universal Installer provides a graphical user interface (GUI) to install the software.

- **Accessing the Installation Software**
  The Oracle Database Client software is available on an installation media or you can download it from the Oracle Technology Network website or Oracle Software Delivery Cloud website.

- **Installing the Oracle Database Client Software**
  Explains how to run Oracle Universal Installer to perform most database client installations.

- **Using Oracle Net Configuration Assistant**
  Learn how to use Oracle Net Configuration Assistant.

Installation Considerations for Oracle Database Client

The Oracle Database Client software is available on the Oracle Technology Network (OTN) website. In most cases, Oracle Universal Installer provides a graphical user interface (GUI) to install the software.

However, you can also use the Oracle Universal Installer to complete silent or response file installations, without using the GUI.

- **Creating the Oracle Base Directory**
  If you install Oracle Database Client on a computer with no other Oracle software installed, Oracle Universal Installer creates an Oracle base directory for you.

- **Multiple Oracle Home Components**
  You can install all Oracle components in multiple Oracle homes on the same computer.

Creating the Oracle Base Directory

If you install Oracle Database Client on a computer with no other Oracle software installed, Oracle Universal Installer creates an Oracle base directory for you.

If Oracle software is already installed, one or more Oracle base directories already exist. In the latter case, Oracle Universal Installer offers you a choice of Oracle Base directories into which you can install Oracle Database Client.

You are not required to create an Oracle base directory before installation, but you can do so if you want. If a Windows User Account is used as the Oracle Home User, it can only share an Oracle base with other Oracle homes with the same Windows user account. If Windows Built-in Account is specified as the Oracle Home User, it can only

share an Oracle base with other client Oracle homes using a Windows Built-in Account.

Oracle Database Client 18c cannot share an Oracle base with Oracle homes from earlier database versions, such as Oracle Database 11*g* Release 2 (11.2) and earlier.

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

Multiple Oracle Home Components

You can install all Oracle components in multiple Oracle homes on the same computer.

However, some components can only support one active instance at a time. The current (latest) installation renders the previous one inactive. The component Oracle Provider for OLE DB supports one active instance at a time.

Accessing the Installation Software

The Oracle Database Client software is available on an installation media or you can download it from the Oracle Technology Network website or Oracle Software Delivery Cloud website.

To install the software from the hard disk, you must either download it and unpack it, or copy it from the installation media, if you have it.

- Installing from a Remote DVD Drive
  If the computer where you want to install Oracle Database Client does not have a DVD drive, then you can perform the installation from a remote DVD drive.

- Installing on Remote Computers Through Remote Access Software
  If you want to install and run Oracle Database Client on a remote computer (that is, the remote computer has the hard drive and runs Oracle Database Client components), but you do not have physical access to the computer, you still can perform the installation on the remote computer.

- Downloading Oracle Software
  Select the method you want to use to download the software.

- Copying the Oracle Database Client Software to a Hard Disk
  Oracle recommends that you copy the installation software to the hard disk to enable the installation to run faster.

Installing from a Remote DVD Drive

If the computer where you want to install Oracle Database Client does not have a DVD drive, then you can perform the installation from a remote DVD drive.

- Step 1: On the Remote Computer, Share the DVD Drive
  The remote DVD drive must allow shared access.

- Step 2: On the Local Computer, Map the DVD Drive
  Use this procedure to map the DVD drive on the local computer.

Step 1: On the Remote Computer, Share the DVD Drive

The remote DVD drive must allow shared access.

To set this up, perform these steps on the remote computer that has the DVD drive:

1. Log in to the remote computer as an Administrator user.

2. Start Windows Explorer.

3. Right-click the DVD drive letter and select **Sharing** (or **Sharing and Security**).

4. Click the **Sharing** tab and do the following:

    a. Select **Share this folder**.

    b. In **Share name**, give it a share name such as `dvd`. You use this name when you map the DVD drive on the local computer.

    c. Click **Permissions**. You need at least read permission for the user who accesses the drive to install Oracle Database.

    d. Click **OK** when you are finished.

5. Insert the Oracle Database installation media into the DVD drive.

Step 2: On the Local Computer, Map the DVD Drive

Use this procedure to map the DVD drive on the local computer.

Perform these steps on the local computer to map a remote DVD drive and to run Oracle Universal Installer from the mapped drive:

1. Map the remote DVD drive.

    a. Start Windows Explorer on the local computer.

    b. From the **Tools** menu, select **Map Network Drive** to display the Map Network Drive dialog box.

    c. Select a drive letter to use for the remote DVD drive.

    d. In **Folder**, enter the location of the remote DVD drive using the following format:

       `\\`*`remote_hostname`*`\`*`share_name`*

       where:

       - *`remote_hostname`* is the name of the remote computer with the DVD drive.

       - *`share_name`* is the share name that you use when you map the DVD drive on the local computer. For example:

          `\\computer2\dvd`

    e. If you must connect to the remote computer as a different user, click **different user name**, and enter the user name.

    f. Click **Finish**.

2. Run Oracle Universal Installer from the mapped DVD drive.

Related Topics

- [Installing Oracle Database Client](#)
  Explains how to run Oracle Universal Installer to perform most database client installations.

Installing on Remote Computers Through Remote Access Software

If you want to install and run Oracle Database Client on a remote computer (that is, the remote computer has the hard drive and runs Oracle Database Client components), but you do not have physical access to the computer, you still can perform the installation on the remote computer.

Use remote access software such as VNC or Symantec pcAnywhere. You also need the remote access software running on your local computer.

You can install Oracle Database Client on the remote computer in the following ways:

- If you have copied the contents of the Oracle Database Client DVD to a hard drive, you can install the software from the hard drive.

- You can insert the DVD into a drive on your local computer, and install the software from the DVD.

- [Installing on Remote Computers from a Hard Drive](#)
  If you have copied the contents of the Oracle Database DVD to a hard drive, then you can install the software from the hard drive.

- [Installing on Remote Computers from a Remote DVD Drive](#)
  You can insert the DVD into a drive on your local computer, and install from the DVD.

Installing on Remote Computers from a Hard Drive

If you have copied the contents of the Oracle Database DVD to a hard drive, then you can install the software from the hard drive.

To install the software on a remote computer from a hard drive:

1. Ensure that the remote access software is installed and running on the remote and local computers.

2. Share the hard drive that contains the Oracle Database DVD.

3. On the remote computer, map a drive letter to the shared hard drive. You use the remote access software to do this on the remote computer.

4. Through the remote access software, run Oracle Universal Installer on the remote computer. You access Oracle Universal Installer from the shared hard drive.

Related Topics

- [Installing the Oracle Database Client Software](#)
  Explains how to run Oracle Universal Installer to perform most database client installations.

Installing on Remote Computers from a Remote DVD Drive

You can insert the DVD into a drive on your local computer, and install from the DVD.

To install the software on a remote computer from a remote DVD drive:

1. Ensure that the remote access software is installed and running on the remote and local computers.

2. On the local computer, share the DVD drive.

   On the remote computer, map a drive letter to the shared DVD drive. Use the remote access software to do this on the remote computer.

3. Through the remote access software, run Oracle Universal Installer on the remote computer. Access Oracle Universal Installer from the shared DVD drive.

Related Topics

- Installing from a Remote DVD Drive
  If the computer where you want to install Oracle Database Client does not have a DVD drive, then you can perform the installation from a remote DVD drive.

- Installing the Oracle Database Client Software
  Explains how to run Oracle Universal Installer to perform most database client installations.

Downloading Oracle Software

Select the method you want to use to download the software.

Download the trial version of the installation files from either the Oracle Technology Network (OTN) or the Oracle Software Delivery Cloud portal and extract them on your hard disk. Ensure that you review and understand the terms of the license. Most downloads include the development license.

- Downloading the Installation Archive Files from Oracle Technology Network
  Download installation archive files from Oracle Technology Network.

- Downloading the Software from Oracle Software Delivery Cloud
  You can download the software from Oracle Software Delivery Cloud as Media Packs.

- Extracting the Installation Files
  Review this procedure to extract the installation files.

Downloading the Installation Archive Files from Oracle Technology Network

Download installation archive files from Oracle Technology Network.

To download the installation archive files from Oracle Technology Network:

1. Use any browser to access the software download page from OTN at:

   http://www.oracle.com/technetwork/indexes/downloads/index.html

2. Navigate to the download page for the product to install.

3. On the download page, identify the required disk space by adding the file sizes for each required file.

The file sizes are listed next to the file names.

4. Select a file system with enough free space to store and expand the archive files.

    In most cases, the available disk space must be at least twice the size of all of the archive files.

5. On the file system that you selected in step 4, create a parent directory for each product, for example `OraDB12c`, to hold the installation directories.

6. Download all of the installation archive files to the directory that you created in step 5.

7. Verify that the files you downloaded are the same size as the corresponding files on Oracle Technology Network. Also verify the checksums are the same as noted on Oracle Technology Network.

8. Extract the files in each directory that you just created.

Related Topics

• Installing the Oracle Database Client Software
  Explains how to run Oracle Universal Installer to perform most database client installations.

Downloading the Software from Oracle Software Delivery Cloud

You can download the software from Oracle Software Delivery Cloud as Media Packs.

A Media Pack is an electronic version of the software that is also available to Oracle customers on CD-ROM or DVD. To download the Media Pack:

1. Use any browser to access the Oracle Software Delivery Cloud website:

    http://edelivery.oracle.com/

2. Complete the Export Validation process by entering information (name, company, e-mail address, and country) in the online form.

3. In the Media Pack Search page, specify the Product Pack and Platform to identify the Media Pack you want to download. If you do not know the name of the Product Pack, you can search for it using the License List.

4. Optionally, select the relevant product to download from the **Results** list.

5. In the search results page, click **Readme** to download and review the Readme file for download instructions and product information.

6. After you review the Readme, choose the appropriate Media Pack from the search results to download the individual zip files. Follow the Download Notes instructions in this page. Once you download and extract the contents of the required zip files, proceed with the installation of the software.

> 💡 **Tip:**
>
> Print the page with the list of downloadable files. It contains a list of part numbers and their corresponding descriptions to refer during the installation process.

7. After you download the files, click **View Digest** to verify that the MD5 or SHA-1 checksum matches with what is listed in the media download page.

> **See Also:**
>
> - My Oracle Support Note 549617.1 for information about how to verify the integrity of a software download at:
>
>   https://support.oracle.com/CSP/main/article?
>   cmd=show&type=NOT&id=549617.1
>
> - *Frequently Asked Questions* section on the Oracle Software Delivery Cloud website for more information about Media Packs

Extracting the Installation Files

Review this procedure to extract the installation files.

To extract the installation archive files, perform the following steps:

1. If necessary, change to the directory that contains the downloaded installation archive files.

2. Oracle Database software is available as two zip files. Ensure that you extract both the zip files to the same directory.

Related Topics

- Installing Oracle Database Client
  Explains how to run Oracle Universal Installer to perform most database client installations.

Copying the Oracle Database Client Software to a Hard Disk

Oracle recommends that you copy the installation software to the hard disk to enable the installation to run faster.

To copy the contents of the installation media to a hard disk, perform the following steps:

1. Create a directory on your hard drive. For example:

   ```
   C:\> mkdir \install
   C:\> mkdir \install\database
   ```

2. Copy the contents of the installation media to the directory that you just created.

Related Topics

- Installing Oracle Database Client
  Explains how to run Oracle Universal Installer to perform most database client installations.

Installing the Oracle Database Client Software

Explains how to run Oracle Universal Installer to perform most database client installations.

- Guidelines for Installing Oracle Database Client
  In most cases, Oracle Universal Installer provides a graphical user interface (GUI) to install Oracle Universal Installer to install Oracle Database Client. However, you can also use Oracle Universal Installer to complete silent or response file installations, without using the GUI.

- Running Oracle Universal Installer to Install Oracle Database Client
  Review the procedure in this topic for installing Oracle Database Client.

Guidelines for Installing Oracle Database Client

In most cases, Oracle Universal Installer provides a graphical user interface (GUI) to install Oracle Universal Installer to install Oracle Database Client. However, you can also use Oracle Universal Installer to complete silent or response file installations, without using the GUI.

This method is particularly useful if you need to perform multiple installations of Oracle Database Client.

As you install Oracle Database Client, follow these guidelines:

- Do not use Oracle Universal Installer from an earlier Oracle product release to install components from this release.

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

- If you reinstall Oracle software into an Oracle home directory where Oracle Database Client is already installed, then you must reinstall any components that were installed before you began the reinstallation.

- Do not modify the Java Runtime Environment (JRE) except by using a patch provided by Oracle Support Services. Oracle Universal Installer automatically installs the Oracle-supplied version of the JRE. This version is required to run Oracle Universal Installer and several Oracle assistants.

- If you encounter errors during installation, click **Help**.

- Products not installed by default, in case of Custom installation:
  - Oracle SQLJ
  - Oracle Database Utilities
  - Oracle Java Client
  - SQL *Plus
  - Oracle JDBC/THIN Interfaces
  - Oracle Internet Directory Client
  - Oracle Call Interface (OCI)
  - Oracle Programmer
  - Oracle XML Development Kit
  - Oracle Advanced Security
  - OLAP Analytic Workspace Manager and Worksheet
  - Oracle Net
  - Oracle Connection Manager

- Oracle Net Listener

- Oracle Multimedia Client Option

- Oracle ODBC Driver

- Oracle Clusterware High Availability API

- Oracle SQL Developer

- Oracle Scheduler Agent

- Oracle Services for Microsoft Transaction Server

- Oracle Provider for OLE DB

- Oracle Data Provider for .NET

- Oracle Providers for ASP .NET

Running Oracle Universal Installer to Install Oracle Database Client

Review the procedure in this topic for installing Oracle Database Client.

Use Oracle Universal Installer to install the Oracle Database Client software.

To install Oracle Database Client, perform the following steps:

1. Log in to Windows as an Administrator user. If you are installing on a Primary Domain Controller (PDC) or a Backup Domain Controller (BDC), log on as a member of the Domain Administrators group.

2. Navigate to the location of the installation media for Oracle Database Client, open a command prompt with administrator privileges, and run the `setup.exe` command. Use the same installation media to install Oracle Database on all supported Windows platforms.

3. In the Select Installation Type screen, select the type of installation that you want: Instant Client, Administrator, Runtime, or Custom and click **Next**.

4. During installation, you can specify an Oracle Home User associated with the Oracle Database home on the Specify Oracle Home User screen. The Oracle home user owns all the Windows services run by the Oracle Database software. You can either specify an existing Windows user, or have the installer create the user for you. The Oracle Home User and several database services with the proper Access Control Lists (ACLs) are configured during installation. Select **Use Windows Built-in Account** if you do not specify an Oracle Home User during installation. Then the services for the Oracle home run as the LocalService or LocalSystem user. The Oracle Home User is not available if you select Instant Client as the type of installation.

5. In the Specify Installation Location screen, enter the following details:

   Oracle Base: This path appears by default. You can change the path based on your requirement.

   The Oracle Base section is not displayed if you select Instant Client as the type of installation.

   In the **Software Location** section, accept the default value or enter the Oracle home directory path in which you want to install Oracle components. The directory path must not contain spaces. Click **Next**.

6. If you selected Custom as the type of installation, then the Available Product Components screen is displayed. Select the products that you want to install and click **Next**.

> **Note:**
>
> You can install Oracle Connection Manager, Oracle Net Listener, Oracle Scheduler Agent, and Oracle Services for Microsoft Transaction Server using the Custom install option.

7. If you selected Oracle Scheduler Agent as one of the components to install, then the Oracle Database Scheduler Agent screen is displayed with the default host name and default port number. Enter the Scheduler Agent Hostname and the Scheduler Agent Port Number. Click **Next**.

8. The Perform Prerequisite Checks screen verifies if your computer meets the minimum system requirements to install the desired product. Click **Next**.

> **Note:**
>
> Oracle recommends that you use caution in checking the **Ignore All** option. If you check this option, then Oracle Universal Installer may not confirm that your system is able to install Oracle Database successfully.

9. Review the information displayed in the Summary screen, and click **Install.**

> **Note:**
>
> You can save all the installation steps into a response file by clicking **Save Response File.** Later, this file can be used for a silent installation.

10. The Install Product screen shows the progress of a client installation. After Oracle Database Client is installed, click **OK**.

11. If you perform a Custom installation, then select Oracle Net Listener from the list of components.

12. In the Finish screen, click **Close** to exit Oracle Universal Installer.

Using Oracle Net Configuration Assistant

Learn how to use Oracle Net Configuration Assistant.

During a Custom Oracle Database Client installation, if you select Oracle Net Listener from the list of components to install, then Oracle Universal Installer automatically starts Oracle Net Configuration Assistant as part of the Oracle Database Client installation.

Perform the following to configure the listener and naming methods using Oracle Net Configuration Assistant:

1. In the Welcome screen, click **Next**.

> **Note:**
>
> If you do not select Oracle Home User for installation or Oracle Net Listener as a component, then you can select **Perform typical configuration** for default network configuration.

2. In the Listener Configuration, Listener Name screen, enter a **Listener name** or accept the default value.

   The **Oracle Home User Password** field appears if you choose to install Oracle home using Oracle Home User. You must provide a password to run Windows services for the listener under the Oracle Home User account. Click **Next**.

3. In the Listener Configuration, Select Protocol screen, select one or more protocols from the Available Protocols list, and move it to the Selected Protocols list. Click **Next**.

4. In the Listener Configuration, TCP/IP Protocol screen, select the standard port number, or enter a different port number. Click **Next**.

5. In the Listener Configuration, More Listeners? screen, select **No** if you do not want to configure an additional listener, and click **Next**.

6. The listener configuration is now complete, click **Next** to proceed.

> **Note:**
>
> If you have more than one listener, then you can select and start a listener from the list provided in the Listener Configuration, Select Listener screen.

7. In the Naming Methods Configuration screen, select **Yes** to configure naming methods. Click **Next**.

8. In the Naming Methods Configuration, Select Naming Methods screen, select the naming method you want from the Available Naming Methods list, and move it to the Selected Naming Methods list. Click **Next**.

   Typically, Local Naming is sufficient.

9. In the Net Service Name Configuration, Service Name screen, enter **Service Name**, and click **Next**.

10. In the Net Service Name Configuration, Select Protocols screen, select the protocol for the database you want to access, and click **Next**.

11. In the Net Service Name Configuration, TCP/IP Protocol screen, enter the **Host name** of the computer where the Oracle database is installed. Use the standard port number, or specify a different port number, and click **Next**.

12. In the Net Service Name Configuration, Test screen, click **Yes, perform a test** to test the database connection. Click **Next**.

13. In the Net Service Name Configuration, Connecting screen, click **Next**.

   In most cases, the test fails only because the default user name and password Oracle Universal Installer supplies in the dialog box do not match the user name and password for the target database. Click **Change Login**, reenter the user name and password, and then click **OK**.

14. In the Net Service Name Configuration, Net Service Name screen, enter the name of the **Net Service Name**, and click **Next**.

15. Answer the remaining prompts to complete the configuration.

16. In the Finish screen, click **Close**, to exit from Oracle Universal Installer.

    You can also run Oracle Net Configuration Assistant after the installation in standalone mode to configure the listener, naming methods, net service names, and directory server usage.

    To start Oracle Net Configuration Assistant in standalone mode, select **Programs** from the Start menu, and then select **Oracle - *HOME_NAME***. Next, select **Configuration and Migration Tools**, and then **Oracle Net Configuration Assistant**.

4

Oracle Database Client Postinstallation Tasks

Complete configuration task after you install Oracle Database Client.

You must complete some configuration tasks after Oracle Database Client is installed. In addition, Oracle recommends that you complete additional tasks immediately after installation. You must also complete product-specific configuration tasks before you use those products.

- Required Postinstallation Tasks
  Download and apply required patches for your software release after completing your initial installation.

- Recommended Postinstallation Tasks
  Oracle recommends that you perform the tasks in the following sections after completing an installation:

Required Postinstallation Tasks

Download and apply required patches for your software release after completing your initial installation.

- Downloading and Installing Patch Updates
  Download and install patch updates for your Oracle software after you complete installation.

- Updating Instant Client
  Review this procedure to update Instant Client.

- Configuring Oracle Net Services
  You can configure Oracle Database Client to communicate with Oracle Net Services by adding the appropriate entries to the tnsnames.ora and listener.ora files.

Downloading and Installing Patch Updates

Download and install patch updates for your Oracle software after you complete installation.

Check the My Oracle Support website for required patch updates for your installation.

To download required patches:

1. Use a web browser to view the My Oracle Support website:

   https://support.oracle.com/

2. Log in to My Oracle Support.

> **Note:**
>
> If you are not a My Oracle Support registered user, click **Register here** and follow the registration instructions.

3. On the main My Oracle Support page, click **Patches and Updates** tab.

4. In the Patch Search group, select **Product or Family (Advanced).**

5. In the Product field, select **Oracle Database Client.**

6. In the Release field select the release number. For example, Oracle 12.2.0.1.0.

7. Click **Search.**

8. Any available patch updates are displayed in the Patch Search page.

9. Select the patch number and click **ReadMe.** The README page is displayed and contains information about the patch set and how to apply the patches to your installation.

10. Return to the Patch Search page, click **Download**, and save the file on your system.

11. Uncompress the Oracle patch updates that you downloaded from My Oracle Support.

Updating Instant Client

Review this procedure to update Instant Client.

To update Instant Client, perform the following steps:

1. Download Instant Client from Oracle Help Center at `http://docs.oracle.com`.

2. Place the new files directly on top of the previous files.

   If you place the files into a different directory (and remove the previous files), be sure to update your PATH environment variable setting to reflect the new location.

Configuring Oracle Net Services

You can configure Oracle Database Client to communicate with Oracle Net Services by adding the appropriate entries to the tnsnames.ora and listener.ora files.

If you have a previous release or Oracle software, you can just copy information in the Oracle Net tnsnames.ora and listener.ora configuration files from the previous release to the corresponding files in the new release.

> **Note:**
>
> The default location for the `tnsnames.ora` and `listener.ora` files is the `ORACLE_HOME\network\admin` directory.

To create Oracle Connection Manager (CMAN) services, create a CMAN alias entry in `cman.ora` under `ORACLE_HOME\network\admin`. For example:

```
cman_proxy=

(CONFIGURATION=

(ADDRESS=(PROTOCOL=tcp)(HOST=host_name)(PORT=1521))

(RULE_LIST=

(RULE=(SRC=*)(DST=*)(SRV=*)(ACT=accept)))

(PARAMETER_LIST=

(MIN_GATEWAY_PROCESSSES=1)

(MAX_GATEWAY_PROCESSES=2)))
```

This accepts connection from all clients as mentioned in the rule.

CMAN services are created when CMAN is started for the first time using `cmctl` command-line tool. When creating services, `cmctl` prompts for a password if Windows User Account is specified as Oracle Home User during installation. If Windows Built-in Account is specified as Oracle Home User during installation, then `cmctl` does not prompt for password.

Listener can be configured by adding an alias entry in `listener.ora`. Listener service is created when the listener is started for the first time. The listener control utility, `lsnrctl` prompts for a password if Windows User Account is specified as Oracle Home User during installation. If Windows Built-in Account is specified as Oracle Home User during installation, then it does not prompt for password.

Recommended Postinstallation Tasks

Oracle recommends that you perform the tasks in the following sections after completing an installation:

- Configuring Instant Client Light
  To configure Instant Client Light, you must make it the default instead of Instant Client.

- Connecting Oracle Database Client to an Oracle Database
  After you run Oracle Universal Installer to install Oracle Database Client, you must use Oracle Net Configuration Assistant (NETCA) to configure Oracle Database Client to connect to an Oracle database.

- Connecting Instant Client or Instant Client Light to an Oracle Database
  Before you can connect Instant Client or Instant Client Light to an Oracle Database, ensure that the PATH environment variable specifies the directory that contains the Instant Client libraries.

- Changing the Oracle Home User Password
  Oracle Home User Control is a command-line utility that allows an administrator to update the password for an Oracle Home User.

- Creating the OraMTS Service for Microsoft Transaction Server
  Oracle Services for Microsoft Transaction Server (OraMTS) permit Oracle databases to be used as resource managers in Microsoft application coordinated transactions.

- Creating the Scheduler Agent

  The Oracle Scheduler Execution Agent permits Oracle Database clients to run Scheduler jobs at the request of an Oracle instance which can be located on a remote host.

Configuring Instant Client Light

To configure Instant Client Light, you must make it the default instead of Instant Client.

To configure Instant Client Light:

1. In the `ORACLE_BASE\ORACLE_CLIENT_HOME` directory, either rename or delete the `oraociei12.dll` file.

   The `oraociei12.dll` file is the main binary for Instant Client.

2. From the `ORACLE_BASE\ORACLE_CLIENT_HOME\install\instantclient\light` directory, copy the `oraociicus12.dll` file to the `ORACLE_BASE\ORACLE_CLIENT_HOME` directory. .

   The `oraociicus12.dll` file is the binary for Instant Client Light.

3. Ensure that the PATH environment variable points to the `ORACLE_BASE\ORACLE_CLIENT_HOME` directory.

> **✎ Note:**
>
> If the Instant Client `PATH` is not set, then the applications attempt to load the regular Instant Client libraries first. If the applications cannot find these, then they attempt to load the Instant Client Light library next.

Connecting Oracle Database Client to an Oracle Database

After you run Oracle Universal Installer to install Oracle Database Client, you must use Oracle Net Configuration Assistant (NETCA) to configure Oracle Database Client to connect to an Oracle database.

At the end of the installation, Oracle Universal Installer prompts you to configure the database connection. If you bypassed that option, or if you need to change the database connection later on, use the following procedure if you installed the **Administrator**, **Runtime**, or **Custom** installation types.

To connect Oracle Database Client to an Oracle Database:

1. From the **Start** menu, choose **Oracle - *HOME_NAME***, then **Configuration and Migration Tools**, then **Oracle Net Configuration Assistant**.

2. In the Welcome window, select **Local Net Service Name configuration** and click **Next**.

3. In the Net Service Name Configuration window, select **Add** and click **Next**.

4. In the Service Name window, enter the name of the Oracle database to which you want to connect and click **Next**.

5. In the Select Protocols window, select the protocol you want and click **Next**.

6. In the Protocol window, depending on the protocol you selected, enter the appropriate information and click **Next**.

7. In the Net Test window, select whether you want to test the connection, and click **Next**.

8. In the Net Service Name window, enter a name for the net service and click **Next**.

9. Answer the remaining prompts, which allow you to configure another net service name, and then click **Finish** to complete the configuration.

   Oracle Net Configuration Assistant creates the `tnsnames.ora` file in the following location:

   `ORACLE_HOME\network\admin\tnsnames.ora`

Connecting Instant Client or Instant Client Light to an Oracle Database

Before you can connect Instant Client or Instant Client Light to an Oracle Database, ensure that the PATH environment variable specifies the directory that contains the Instant Client libraries.

- Specifying a Connection by Using the Easy Connect Naming Method
  You can specify a connection address to an Oracle Database directly from a client application, without having to configure a `tnsnames` setting for the Instant Client.

- Specifying a Connection by Configuring a tnsnames.ora File
  By default, when you install an Instant Client, Oracle Universal Installer does not include a sample tnsnames.ora file nor the Oracle Net Configuration Assistant utility normally used to create it.

- Specifying a Connection by Using an Empty Connect String and the LOCAL Variable
  Describes how to specify a connection to an empty connect string and set the LOCAL environment variable.

Specifying a Connection by Using the Easy Connect Naming Method

You can specify a connection address to an Oracle Database directly from a client application, without having to configure a `tnsnames` setting for the Instant Client.

This method is convenient in that you do not have to create and manage a `tnsnames.ora` file. However, your application users must specify the host name and port number when they want to log in to your application.

For example, suppose you are running SQL*Plus on the client computer and want to connect to the sales_us database, which is located on a server whose host name is shobeen and port number is 1521. If you launch SQL*Plus from the command line, then log in as follows:

`sqlplus system/admin@//shobeen:1521/sales_us`

Similarly, in your application code, you can use Oracle Call Interface net naming methods to create the Instant Client-to-Oracle Database connection. For example, the following formats in the OCIServerAttach() call specify the connection information:

- Specify a SQL connect URL string using the following format:

  `//host[:port][/service_name]`

  For example:

  `//shobeen:1521/sales_us`

- Alternatively, specify the SQL connect information as an Oracle Net keyword-value pair. For example:

  ```
  "(DESCRIPTION=(ADDRESS=(PROTOCOL=tcp) (HOST=shobeen) (PORT=1521))

  (CONNECT_DATA=(SERVICE_NAME=sales_us)))"
  ```

Specifying a Connection by Configuring a tnsnames.ora File

By default, when you install an Instant Client, Oracle Universal Installer does not include a sample tnsnames.ora file nor the Oracle Net Configuration Assistant utility normally used to create it.

However, if you want to shield users from having to specify actual host names and port numbers, you may want to consider using a tnsnames.ora file to set the Instant Client-to-Oracle Database connection.

You can create the tnsnames.ora file manually by copying and modifying a version of this file from another Oracle installation, or you can use Oracle Net Configuration Assistant to create and manage it for you.

To install Oracle Net Configuration Assistant:

1. Run Oracle Universal Installer.

2. Select the **Custom** installation type.

3. In the Available Product Components list, select **Oracle Network Utilities** and click **Next**.

4. In the Summary window, click **Install**, then click **Exit** and **Yes** to exit Oracle Universal Installer.

   Then, on each client computer, configure either of the following settings:

   - Set the `TNS_ADMIN` environment variable to specify the location of the `tnsnames.ora` file and specify a service name from that file.

   - Place the `tnsnames.ora` file in the `ORACLE_HOME`\network\admin directory, and ensure that the `ORACLE_HOME` environment has been set to this Oracle home.

   Related Topics

   - Connecting Oracle Database Client to an Oracle Database
     After you run Oracle Universal Installer to install Oracle Database Client, you must use Oracle Net Configuration Assistant (NETCA) to configure Oracle Database Client to connect to an Oracle database.

Specifying a Connection by Using an Empty Connect String and the LOCAL Variable

Describes how to specify a connection to an empty connect string and set the LOCAL environment variable.

You can set the connect string to an empty connect string (""), and then set the LOCAL environment variable to one of the following values:

- A direct address

- Oracle Net keyword-value pair

- A `tnsnames.ora` entry and `TNS_ADMIN` is set to the location of tnsnames.ora

- A tnsnames.ora entry and the following:

    - `tnsnames.ora` file located in `ORACLE_HOME/network/admin`

    - The `ORACLE_HOME` environment variable set to this Oracle home

        This method allows your applications to specify internally a connection string if the application code uses an empty connection string. The benefit of an empty connect string is that the application does not need to specify the `tnsnames.ora` entry. Instead, when a user invokes the application, the location of the database is determined by a script or the environment, depending on where you have set the `LOCAL` environment variable. The disadvantage of using empty strings is that you must configure this additional information for your application to connect to the database.

Related Topics

- Specifying a Connection by Using the Easy Connect Naming Method
  You can specify a connection address to an Oracle Database directly from a client application, without having to configure a `tnsnames` setting for the Instant Client.

Changing the Oracle Home User Password

Oracle Home User Control is a command-line utility that allows an administrator to update the password for an Oracle Home User.

This tool updates the password for Windows services in the Oracle home. The input password must match the password for the Windows User Account used as the Oracle Home User. So, first use Windows operating system tools to change the Windows password and then use this tool to update the Windows services in the Oracle home to use the same password.

> **Note:**
>
> You must have Administrator privileges to run this Oracle Home User Control utility.

Syntax Overview:

The following is the command syntax:

```
orahomeuserctl list | updpwd [-user username] [-host hostname1, hostname2, . . .] [-
log logfilename]
```

where:

- `orahomeuserctl` is used to display the Oracle Home User name associated with the current Oracle home or to update the Oracle Home User password.

- `list` displays the Oracle Home User name associated with the current Oracle home.

- `updpwd` prompts for the new password and updates the password for the named Oracle Service User. The following are the options for `updpwd`:

    - `-user username`

This option determines the Oracle Home User name. If this option is not present, then the user name associated with the current Oracle home is used. If the named user, be it the *username* or user of the current Oracle home, is an MSA or Windows Built-in account, then an error message is displayed and the command is terminated.

— `-host` *hostname1*, *hostname2*,...

When this option is present, the utility updates the passwords for all services belonging to the named Oracle Home User on the specified hosts. Otherwise, the Oracle Home User Control utility updates the passwords for all the services belonging to the named Oracle Home User on a specified host with single instance installation, or updates the passwords for all services belonging to the named Oracle Home User on all the specified hosts.

When the update completes, the utility displays the number of successful updates and any services that failed to update with the new password.

— `-log` *logfilename*

This option adds the password update operation results to a log file for every service name receiving the new password. By default, the log files are located in the `ORACLE_HOME`\log directory. If *logfilename* specifies only a file name, then the log is stored in the named file in the default directory. However, if the *logfilename* contains a path, then that path is used without modification.

Creating the OraMTS Service for Microsoft Transaction Server

Oracle Services for Microsoft Transaction Server (OraMTS) permit Oracle databases to be used as resource managers in Microsoft application coordinated transactions.

OraMTS acts as a proxy for the Oracle database to the Microsoft Distributed Transaction Coordinator (MSDTC). As a result, OraMTS provides client-side connection pooling and allows client components that leverage Oracle to participate in promotable and distributed transactions. In addition, OraMTS can operate with Oracle databases running on any operating system, given that the services themselves are run on Windows.

On releases before Oracle Database 12*c*, the OraMTS service was created as part of a software-only installation. Now, you must use a configuration tool to create this service.

To create the OraMTS service after performing a software-only installation for Oracle Database, perform the following steps:

1. Open a command window.

2. Change directories to `ORACLE_HOME`\bin.

3. Run the `OraMTSCtl` utility to create the OraMTS Service:

   ```
   C:\ORACLE_HOME\bin> oramtsctl.exe -new
   ```

Creating the Scheduler Agent

The Oracle Scheduler Execution Agent permits Oracle Database clients to run Scheduler jobs at the request of an Oracle instance which can be located on a remote host.

This allows for centralized control over several hosts using Oracle Scheduler and can perform jobs at the operating system level and jobs that run on another Oracle Database.

The Oracle Scheduler Execution Agent is installed with the Oracle Database Client software.

The Oracle Scheduler Execution Agent permits Oracle Database clients to run Scheduler jobs at the request of an Oracle instance which can be located on a remote host. This allows for centralized control over several hosts using Oracle Scheduler and can perform jobs at the operating system level and jobs that run on another Oracle Database.

To create the Scheduler Agent service after performing a software-only installation for Oracle Database Client, perform the following steps:

1. Open a command window.

2. Change directories to *ORACLE_HOME*\bin.

3. Run the executable utility, schagent to create the Scheduler Agent service:

   ```
   C:\ORACLE_HOME\bin> schagent.exe -new
   ```

5
Removing Oracle Database Client Software

Learn how to remove Oracle software and configuration files.

You can remove Oracle software either by using Oracle Universal Installer with the `deinstall` option, or by using the deinstallation tool (`deinstall`) that is included in Oracle homes. Oracle does not support the removal of individual products or components related to the specified Oracle home. It includes information about removing Oracle software using the deinstallation tool.

The deinstallation tool removes standalone Oracle Database installations, Oracle Clusterware and Oracle Automatic Storage Management (Oracle ASM) from your server, as well as Oracle Real Application Clusters (Oracle RAC) and Oracle Database client installations.

Oracle recommends that you use the deinstallation tool to remove the entire Oracle home associated with the Oracle Database, Oracle Clusterware, Oracle ASM, Oracle RAC, or Oracle Database client installation. Oracle does not support the removal of individual products or components.

> ⚠ **Caution:**
>
> If you have a standalone database on a node in a cluster and you have multiple databases with the same global database name (GDN), then you cannot use the deinstallation tool to remove one database only.

> ⚠ **Caution:**
>
> You must use the deinstallation tool from the same release to remove Oracle software. Do not run the deinstallation tool from a later release to remove Oracle software from an earlier release. For example, do not run the deinstallation tool from the 12.2.0.1 installation media to remove Oracle software from an existing 11.2.0.4 Oracle home.

- About Oracle Deinstallation Options
  You can stop and remove Oracle Database software and components in an Oracle Database home with Oracle Universal Installer.

- Deinstallation Examples for Oracle Database
  Use these examples to learn how to run deinstallation using OUI (`runinstaller`) or as a standalone tool (`deinstall`).

- Example of Running the Deinstallation Tool
  Review the examples to help you understand how to run the deinstallation tool.

- Deinstallation Response File Example for Oracle Database
  You can run the deinstallation tool with the `-paramfile` option to use the values you specify in the response file.

About Oracle Deinstallation Options

You can stop and remove Oracle Database software and components in an Oracle Database home with Oracle Universal Installer.

Using Oracle Universal Installer with the deinstall option, or running the deinstallation tool from the Oracle home, stops and removes Oracle software and it's components, such as database client and configuration files for a specific Oracle home.

You can remove the following software using Oracle Universal Installer or the Oracle deinstallation tool:

- Oracle Database

- Oracle Grid Infrastructure, which includes Oracle Clusterware and Oracle Automatic Storage Management (Oracle ASM)

- Oracle Real Application Clusters (Oracle RAC)

- Oracle Database Client

The deinstallation tool is integrated with the database client installation media. You can run the deinstallation tool using the `runInstaller` command with the `-deinstall` and `-home` options from the base directory of the Oracle Database, Oracle Database Client, or Oracle Grid Infrastructure installation media.

The deinstallation tool is also available as a separate command (`deinstall`) in Oracle home directories after installation. It is located in `ORACLE_HOME`\deinstall directory.

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

Using Oracle Universal Installer with the deinstall option, or running the deinstallation tool from the Oracle home, stops and removes Oracle software and its components, such as database and configuration files for a specific Oracle home.

If the software in the Oracle home is not running (for example, after an unsuccessful installation), then the deinstallation tool cannot determine the configuration, and you must provide all the configuration details either interactively or in a response file.

> ⚠️ **Caution:**
>
> When you install Oracle Database, if the central inventory contains no other registered homes besides the home that you are deconfiguring and removing, then the Deinstallation tool 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 deinstallation tool deletes this data.
>
> In addition, for Oracle Grid Infrastructure installations:
>
> - Oracle Automatic Storage Management Cluster File System (Oracle ACFS) must be dismounted and Oracle Automatic Storage Management Dynamic Volume Manager (Oracle ADVM) must be disabled.
> - If Grid Naming Service (GNS) is in use, then the entry for the subdomain needs to be deleted from DNS by your DNS administrator.

Oracle recommends that you run the deinstallation tool as the Oracle software installation owner. The default method for running the deinstallation tool is from the deinstall directory in the Oracle home as the installation owner:

```
ORACLE_HOME\deinstall
DRIVE_LETTER:\> deinstall\deinstall.bat
```

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

```
deinstall.bat [-silent] [-checkonly]
[-paramfile complete path of input parameter property file] [-params name1=value
name2=value . . .]
[-o complete path of directory for saving files] [-help]
[-tmpdir complete path of temporary directory to use]
[-logdir complete path of log directory to use] [-help]
```

To run the deinstallation tool from the database installation media, use the `setup.exe` command with the `-deinstall` option, followed by the `-home` option to specify the path of the Oracle home you want to remove using the following syntax, where variable content is indicated in italics:

```
setup.exe -deinstall -home complete path of Oracle home [-silent] [-checkonly] [-
local]
[-paramfile complete path of input parameter property file] [-params name1=value
name2=value . . .] [-o complete path of directory for saving files] [-help]
[-tmpdir complete path of temporary directory to use]
[-logdir complete path of log directory to use] [-help]
```

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

> **✎ Note:**
>
> If User Account Control is enabled, then you must create a desktop shortcut to a DOS command window. Open the command window through the **Run as administrator**, right-click context menu, and start the deinstallation tool.

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

- -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, located in the Oracle home you plan to deinstall, provide a response file in a location outside the Oracle home, and do not use the -home flag.

  If you run the deinstallation tool from the ORACLE_HOME\deinstall path, then the -home flag is not required because the tool identifies the location of the home where it is run. If you run the tool using setup.exe -deinstall from the installation media, then -home is mandatory.

- -silent

  Use this flag to run the deinstallation tool in a noninteractive mode. This option requires one of the following:

  - A working system that it can access to determine the installation and configuration information. The -silent flag does not work with failed installations.

  - A response file that contains the configuration values for the Oracle home that is being deinstalled or deconfigured.

  You can generate a response file to use or modify by running the tool with the -checkonly flag. The tool then discovers information from the Oracle home to deinstall and deconfigure. It generates the response file that you can then use with the -silent option.

  You can also modify the template file deinstall.rsp.tmpl, located in the ORACLE_HOME\deinstall\response directory.

- -checkonly

  Use this flag to check the status of the Oracle software home configuration. Running the deinstallation tool with the -checkonly flag does not remove the Oracle configuration. The -checkonly flag generates a response file that you can then use with the deinstallation tool and -silent option.

- -paramfile complete path of input parameter property file

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

The default location of the response file depends on the location of the deinstallation tool:

- From the installation media or stage location: `\response`

- After installation from the installed Oracle home: `\deinstall\response`.

- `-params ["name1=value" "name2=value" "name3=value" ...]`

Use this flag with a response file to override one or more values to change it in a response file you have created.

- `-o complete path of directory for saving response file`

Use this flag to provide a path other than the default location where the response file is saved. The default location is `\response\deinstall.rsp.tmpl`.

The default location of the response file depends on the location of deinstallation tool:

- From the installation media or stage location before installation: `\response`

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

- `-tmpdir complete path of temporary directory`

Specifies a non-default location where Oracle Deinstallation Tool writes the temporary files for the deinstallation.

- `-logdir complete path of log directory`

Specifies a non-default location where Oracle Deinstallation Tool writes the log files for the deinstallation.

- `-help`

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

Related Topics

- Managing User Accounts with User Account Control
  To ensure that only trusted applications run on your computer, the Windows operating systems supported for Oracle Database Client provide User Account Control.

> **See Also:**
>
> *Oracle Real Application Clusters Installation Guide for Microsoft Windows x64 (64-Bit)* for information about the `-local` option

Deinstallation Examples for Oracle Database

Use these examples to learn how to run deinstallation using OUI (`runinstaller`) or as a standalone tool (`deinstall`).

If you run the deinstallation tool using `runinstaller -deinstall` from the installation media, then help is displayed unless you enter a `-home` flag and provide a path to the home directory of the Oracle software to remove from your system.

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

In the following example, the `deinstall` command is in the path `C:\app\oracle\product\18.0.0\dbhome_1\deinstall`, and it uses a response file in the software owner location `C:\Documents and Settings\oracle\`:

```
DRIVE_LETTER:\> cd \app\oracle\product\18.0.0\dbhome_1\deinstall\
DRIVE_LETTER:\> deinstall.bat -paramfile %HOMEPATH%\my_db_paramfile.tmpl
```

For the grid infrastructure home, use the deinstallation script (`deinstall.bat`) in the Oracle Grid Infrastructure for a standalone server home, which in this example is `C:\app\oracle\product\18.0.0\grid`:

```
DRIVE_LETTER:\> cd \app\oracle\product\18.0.0\grid\deinstall\
DRIVE_LETTER:\> deinstall.bat -paramfile %HOMEPATH%\my_grid_paramfile.tmpl
```

Example of Running the Deinstallation Tool

Review the examples to help you understand how to run the deinstallation tool.

If you perform a deinstallation by running the `setup.exe` command with the `-deinstall` option from the installation media, then help is displayed unless you enter a `-home` flag and provide a path to the home directory of the Oracle software to remove from your system.

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

In the following example, the `setup.exe` command is in the path `\directory_path`, where `directory_path` is the path to the `database` directory on the installation media, and `C:\app\oracle\product\18.0.0\dbhome_1` is the path to the Oracle home which is removed:

```
DRIVE_LETTER:\> cd \directory_path
DRIVE_LETTER:\> setup.exe -deinstall -home C:\app\oracle\product\18.0.0\dbhome_1
```

The following example uses a response file in the software owner location `C:\Documents and Settings\oracle\`:

```
DRIVE_LETTER:\> cd \directory_path
DRIVE_LETTER:\> setup.exe -deinstall -paramfile C:\Documents and Settings\oracle\my_db_paramfile.tmpl
```

Deinstallation Response File Example for Oracle Database

You can run the deinstallation tool with the `-paramfile` option to use the values you specify in the response file.

The following is an example of a response file, in which the Oracle Database binary owner is `oracle`, the Oracle Database home (Oracle home) is in the path `C:\app\oracle\product\18.0.0\dbhome_1`, the Oracle base (where other Oracle software is installed) is `C:\app\oracle`, the Oracle Inventory home is `C:\Program Files\Oracle\Inventory`, and the local node (the node where you run the deinstallation session from) is `myserver`:

```
#Copyright (c) 1998, 2015 Oracle Corporation. All rights reserved.
ORACLE_HOME=C:\app\oracle\product\18.0.0\dbhome_1
```

```
ORACLE_BASE.orcl=C:\app\oracle
FLASH_RECOVERY_LOC.orcl=C:\app\oracle\flash_recovery_area\ORCL
STORAGE_TYPE.orcl=FS
DB_TYPE.orcl=SI_DB
NETCA_LOCAL_LISTENERS=LISTENER
LOGDIR=C:\app\oracle\product\18.0.0\dbhome_1\deinstall\logs\
NODE_LIST.orcl=myserver
ObaseCleanupPtrLoc=\tmp\deinstall2012-06-12_09-14-11AM\orabase_cleanup.lst
ARCHIVE_LOG_DESTINATION_LOC.orcl=
ORACLE_BASE=C:\app\oracle
DUMP_DESTINATION_LOC.orcl=C:\app\oracle\admin\orcl
LOCAL_SID.orcl=orcl
INVENTORY_LOCATION=C:\Program Files\Oracle\Inventory
RAW_MAPPING_FILE.orcl=
SID_LIST.orcl=orcl
DB_UNIQUE_NAME_LIST=orcl
DATAFILE_LOC.orcl=C:\app\oracle\oradata\orcl, C:\app\oracle\fast_recovery_area\orcl
HOME_TYPE=SIDB
CRS_HOME=false
CREATION_MODE.orcl=y
CONFIGFILE_LOC.orcl=
ORACLE_BINARY_OK=true
DIAG_DEST.orcl=C:\app\oracle\diag\rdbms\orcl
LOCAL_NODE=myserver
local=false
SPFILE_LOC.orcl=C:\app\oracle\product\18.0.0\dbhome_1\dbs\spfileorcl.ora
inventory_loc=C:\Program Files\Oracle\Inventory
MinimumSupportedVersion=11.2.0.1.0
silent=false
DBCA_LOG.orcl=C:\app\oracle\cfgtoollogs\dbca\orcl
ORACLE_HOME=C:\app\oracle\product\18.0.0\dbhome_1
CCR_CONFIG_STATUS=CCR_DEL_HOME
EMCA_LOG.orcl=C:\app\oracle\cfgtoollogs\emca\orcl
ORACLE_HOME_VERSION_VALID=true
```

ORACLE®

A

Installing Java Access Bridge

Learn how to install Java Access Bridge 2.0.2.

Java Access Bridge 2.0.2 enables use of a screen reader with Oracle components.

- Overview of Java Access Bridge 2.0.2
  Java Access Bridge 2.0.2 enables assistive technologies to read Java applications running on the Windows platform.

- Setting Up Java Access Bridge 2.0.2
  Learn how to install and configure Java Access Bridge 2.0.2 for Windows after installing Oracle components.

Overview of Java Access Bridge 2.0.2

Java Access Bridge 2.0.2 enables assistive technologies to read Java applications running on the Windows platform.

Assistive technologies can read Java-based interfaces, such as Oracle Universal Installer and Oracle Enterprise Manager Database Express.

For a list of supported system configurations, including supported versions of Microsoft Windows and Java SE, see section "Supported System Configuration" available at the following link location: http://docs.oracle.com

During installation, Oracle Universal Installer uses the Java Runtime Environment (JRE) 1.8 contained in an Oracle Database Client installation media. The JRE enables the use of Java Access Bridge during installation.

Related Topics

- Setting Up Java Access Bridge 2.0.2
  Learn how to install and configure Java Access Bridge 2.0.2 for Windows after installing Oracle components.

Setting Up Java Access Bridge 2.0.2

Learn how to install and configure Java Access Bridge 2.0.2 for Windows after installing Oracle components.

To set up Java Access Bridge 2.0.2 on a Windows 64-bit operating system, perform the following steps:

1. Go to Java Standard Edition 2 (Java SE) Downloads page to download the latest build of JDK 8:

   ```
   http://docs.oracle.com
   ```

2. Install JDK 8 after accepting the Oracle license agreement.

> **✎ Note:**
>
> You must have administrator privileges to install JDK on Windows.

3. Download and install screen reader, JAWS:

   http://www.freedomscientific.com/downloads/jaws/JAWS-downloads.asp

4. Press Windows key+U to open the Ease of Access Center, and select **Use the computer without a display**.

5. Select **Enable Accessbridge** check box. Click **Save** to save the changes.

6. Download Java Access Bridge 2.0.2:

   http://docs.oracle.com

   Download the `accessbridge-2_0_2-fcs-bin-b06.zip` file, after accepting the Oracle license agreement.

7. Extract `accessbridge-2.0.2` to a directory on your system where you plan to install Java Access Bridge. For example, name the directory as follows:

   AB_HOME

8. Copy *AB_HOME*`\WindowsAccessBridge-64.dll` to `c:\windows\system32` and start the screen reader.

9. Open the command prompt and navigate to `setup.exe` file.

10. Run the following command once you are in the `Disk1` directory:

    `setup.exe`

    Oracle Universal Installer starts and JAWS is able to read all prompts and controls on the screen.

11. Once you click the **Install** button, you must open Windows Explorer to see the directory where the database is installed (`DRIVE_LETTER:\app\username\product\18.0.0\dbhome_1`), until the JDK folder is created. Once the JDK folder is created, you must copy the files listed in the following table from the Java Access Bridge source location to the JDK destination folder. Copying these files enable accessibility for both the Oracle Database Configuration Assistant and Oracle Net Configuration Assistant.

Table A-1   Copy Files to JDK Directory on Windows 64-Bit

Copy	To
AB_HOME`\JavaAccessBridge-64.dll`	`dbhome_1\jdk\jre\bin`
AB_HOME`\JAWTAccessBridge-64.dll`	`dbhome_1\jdk\jre\bin`
AB_HOME`\Accessibility.properties`	`dbhome_1\jdk\jre\lib`
AB_HOME`\Access-bridge-64.jar`	`dbhome_1\jdk\jre\lib\ext`
AB_HOME`\jaccess.jar`	`dbhome_1\jdk\jre\lib\ext`

B

Installing and Configuring Oracle Database Using Response Files

Review how to install and configure Oracle products using response files.

Learn how to install and configure Oracle Database Using Response Files:

- **How Response Files Work**
  Response files can assist you with installing an Oracle product multiple times on multiple computers.
- **Preparing a Response File**
  Describest the methods that you can use to prepare a response file for use during silent-mode or response file-mode installations.
- **Running Oracle Universal Installer Using the Response File**
  After creating the response file, run Oracle Univeral Installer at the command line, specifying the response file you created, to perform the installation.

How Response Files Work

Response files can assist you with installing an Oracle product multiple times on multiple computers.

When you start Oracle Universal Installer (OUI), you can use a response file to automate the installation and configuration of Oracle software, either fully or partially. OUI uses the values contained in the response file to provide answers to some or all installation prompts.

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

- **Silent mode**: If you include responses for all of the prompts in the response file and specify the -silent option when starting the installer, then it runs in silent mode. During a silent mode installation, the installer does not display any screens. Instead, it displays progress information in the terminal that you used to start it.
- **Response file mode**: If you include responses for some or all of the prompts in the response file and omit the -silent option, then the installer runs in response file mode. During a response file mode installation, the installer displays all the screens, screens for which you specify information in the response file, and also screens for which you did not specify the required information in the response file. To use the response file mode, run `setup.exe` without the `-silent` parameter, but include the response file or any other parameters that apply.

Define the settings for a silent or response file installation by entering values for the variables listed in the response file. For instance, to specify the Oracle home, provide the appropriate value for the `ORACLE_HOME` variable, as in the following example:

```
ORACLE_HOME="C:\app\product"
```

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

```
DRIVE_LETTER:\setup.exe_location> setup -silent "ORACLE_HOME=C:\app\product" ...
```

This method supports only the Oracle Home User passwords.

- **Reasons for Using Silent Mode or Response File Mode**
  Review this section for use cases for running the installer in silent mode or response file mode.

- **Using Response Files**
  Review this information to use response files.

Related Topics

- **My Oracle Support**

Reasons for Using Silent Mode or Response File Mode

Review this section for use cases for running the installer in silent mode or response file mode.

Table B-1   Reasons for Using Silent Mode or Response File Mode

Mode	Uses
Silent	Use silent mode to:
	• Complete an unattended installation, which you schedule using operating system utilities such as at.
	• Complete several similar installations on multiple systems without user interaction.
	• Install the software on a system that does not have X Window System software installed on it.
	The installer displays progress information on the terminal that you used to start it, but it does not display any of the installer screens.
Response file	Use response file mode to complete similar Oracle software installations on more than one system, providing default answers to some, but not all of the installer prompts.
	If you do not specify information required for a particular installer screen in the response file, then the installer displays that screen. It suppresses screens for which you have provided all of the required information.

Using Response Files

Review this information to use response files.

Use the following general steps to install and configure Oracle products using the installer in silent or response file mode:

1. If you plan to use Oracle Automatic Storage Management and configure new disks, then you must perform the following steps:

    a. Create partitions for DAS or SAN disks.

    b. Manually configure the disks using the `asmtoolg` or `asmtool` utility.

2. Customize or create a response file for the installation settings that you need.

You can create the response file by using one of the following methods:

- Modify one of the sample response files that is provided with the installation.

- Run Oracle Universal Installer at a command prompt and save the inputs by selecting the **Save Response File** option.

3. Run Oracle Universal Installer from a command prompt, specifying the response file, using either silent or response file mode.

> **Note:**
>
> Windows requires Administrator privileges at the command prompt.

Related Topics

- [Running Oracle Universal Installer Using the Response File](#)

Preparing a Response File

Describest the methods that you can use to prepare a response file for use during silent-mode or response file-mode installations.

- [Editing a Response File Template](#)
- [Saving a Response File](#)

Editing a Response File Template

Oracle provides response file templates for each product and the installation type, and for each configuration tool. These files are located in the `ORACLE_BASE\ORACLE_HOME\assistants` directory, and the `database\response` directory on the Oracle Database installation media.

> **Note:**
>
> If you copied the software to a hard disk, the response files are located in the `stage_area\database\response` directory.

All response file templates contain comment entries, sample formats, examples, and other useful instructions. Read the response file instructions to understand how to specify values for the response file variables, so that you can customize your installation.

The following table lists the available sample response files:

Table B-2   Response Files

Response File Name	Description
client_install.rsp	Oracle Database Client installation
netca.rsp	Silent installation of Oracle Net Configuration Assistant

> ⚠️ **Caution:**
>
> When you modify a response file template and save a file for use, the response file may contain plain text passwords. Ownership of the response file must be given to the Oracle software installation owner only. Oracle strongly recommends that database administrators or other administrators delete or secure response files when they are not in use.

To copy and modify a response file:

1. Copy the appropriate response files from the `client\response` directory on the Oracle Database media to your hard drive.

2. Modify the response files with a text file editor.

3. Run the response file by following the instructions in the "Running Oracle Universal Installer Using the Response file" section.

Related Topics

*   Running Oracle Universal Installer Using the Response File
    After creating the response file, run Oracle Univeral Installer at the command line, specifying the response file you created, to perform the installation.

Saving a Response File

You can use the Oracle Universal Installer in interactive mode to save a response file, which you can edit and then use to complete silent mode or response file mode installations.

You can save all the installation steps into a response file during installation by clicking **Save Response File** on the Summary page. You can use the generated response file for a silent installation later.

When you save the response file, you can either complete the installation, or you can exit from Oracle Universal Installer on the Summary page, before it starts to copy the software to the system.

> ✏️ **Note:**
>
> Oracle Universal Installer does not save passwords in the response file.

To save a response file:

1. Ensure that the computer on which you are creating the response file has met the requirements. .

   When you run Oracle Universal Installer to save a response file, it checks the system to verify that it meets the requirements to install the software. For this reason, Oracle recommends that you complete all of the required preinstallation tasks and save the response file while completing an installation.

2. At the command prompt, use the `cd` command to change to the directory that contains the Oracle Universal Installer `setup.exe` executable.

   > **Note:**
   >
   > Windows requires Administrator privileges at the command prompt.

   On the installation DVD, `setup.exe` is located in the `database` directory. Alternatively, navigate to the directory where you downloaded or copied the installation files.

3. Run `setup.exe`.

4. After Oracle Universal Installer starts, enter the installation settings, to save the response file.

5. When the installer displays the Summary screen, perform the following:

   a. Click **Save Response File** and specify a file name and location for the response file. Then, click **Save** to save the values to the file.

   b. Click **Finish** to continue with the installation.

      Click **Cancel** if you do not want to continue with the installation. The installation stops, but the saved response file is retained.

6. Before you use the saved response file on another system, edit the file and make any required changes.

   Use the instructions in the file as a guide when editing it.

Related Topics

- Oracle Database Client Preinstallation Tasks
  Learn about the tasks that you must complete before you start Oracle Universal Installer.

Running Oracle Universal Installer Using the Response File

After creating the response file, run Oracle Univeral Installer at the command line, specifying the response file you created, to perform the installation.

On Windows, you must open the command prompt with the Administrator privileges. The Oracle Universal Installer executable, `setup.exe`, provides several options. For help information about the full set of these options, run `setup.exe` with the `-help` option, for example:

```
DRIVE_LETTER:\setup.exe_location setup -help
```

A new command window appears, with the "Preparing to launch..." message. In a moment, the help information appears in that window.

To run Oracle Universal Installer and specify a response file:

1. Place the response file on the computer where you want to install Oracle Database Client.

2. At a command prompt, run Oracle Universal Installer with the appropriate response file. On Windows, you must open command prompt with the Administrator privileges. For example:

```
DRIVE_LETTER:\setup.exe_location setup [-silent] "variable=setting" [-
nowelcome] [-noconfig] [-nowait] -responseFile
 filename
```

where:

- `filename`: Identifies the full path of the response file.

- `setup.exe_location`: Indicates the location of `setup.exe`.

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

- `"variable=setting"` refers to a variable within the response file that you may prefer to run at the command line rather than set in the response file. Enclose the variable and its setting in quotes.

- `-noconfig`: Suppresses running the configuration assistants during installation, performing a software-only installation instead.

- `-nowait`: Closes the console window when the silent installation completes.

If you save a response file during a silent installation, then Oracle Universal Installer saves the variable values that were specified in the original source response file into the new response file.

C

Configuring Networks for Oracle Database

Typically, the computer on which you want to install Oracle Database is connected to the network, has a local storage to contain the Oracle Database installation, has a display monitor, and has a media drive.

Configuring networks for Oracle Database describes how to install Oracle Database on computers that do not meet the typical scenario.

- Installing Oracle Database on Computers with Multiple IP Addresses
  Use this procedure to set the `ORACLE_HOSTNAME` environment variable.

- Installing Oracle Database on Computers with Multiple Aliases
  A computer with multiple aliases is registered with the naming service under a single IP address but with multiple aliases.

- Installing Oracle Database on Nonnetworked Computers
  You can install Oracle Database on non-networked computers.

- Installing a Loopback Adapter
  A loopback adapter is required if you are installing on a non-networked computer to connect the computer to a network after the installation.

Installing Oracle Database on Computers with Multiple IP Addresses

Use this procedure to set the `ORACLE_HOSTNAME` environment variable.

Clients must be able to access the computer using its host name, or using aliases for its host name. To check access, ping the host name from the client computers using the short name (host name only) and the fully qualified domain name (FQDN, host name and domain name). Both must work.

1. Display **System** in the Windows Control Panel.

2. In the System Properties dialog box, click **Advanced**.

3. In the **Advanced** tab, click **Environment Variables**.

4. In the Environment Variables dialog box, under System Variables, click **New**.

5. In the New System Variable dialog box, enter the following information:

   - **Variable name**: `ORACLE_HOSTNAME`

   - **Variable value**: The host name of the computer to use.

6. Click **OK**, then in the Environment Variables dialog box, click **OK**.

7. Click **OK** in the Environment Variables dialog box, then in the System Properties dialog box, click **OK**.

Installing Oracle Database on Computers with Multiple Aliases

A computer with multiple aliases is registered with the naming service under a single IP address but with multiple aliases.

The naming service resolves any of those aliases to the same computer. Before installing Oracle Database on such a computer, set the `ORACLE_HOSTNAME` environment variable to the computer whose host name you want to use.

Installing Oracle Database on Nonnetworked Computers

You can install Oracle Database on non-networked computers.

If the computer, such as a laptop, is configured for DHCP and you plan to connect the computer to the network after the Oracle Database installation.

Perform these steps before you install Oracle Database on the non-networked computer:

1. Install a loopback adapter on the computer.

   The loopback adapter and the local IP address simulate a networked computer. If you connect the computer to the network, Oracle Database still uses the local IP address and host name.

2. Ping the computer from itself, using only the host name and using the fully qualified name, which is in the `DRIVE_LETTER:\system32\drivers\etc\hosts` file.

   For example, if you installed a loopback adapter on a computer called `mycomputer` on the `mydomain.com` domain, check the following:

   ```
   DRIVE_LETTER:\>ping mycomputer               Ping itself using just the
   hostname.

   Reply from 10.10.10.10                       Returns local IP.
   DRIVE_LETTER:\>ping mycomputer.mydomain.com   Ping using a fully qualified name.
   Reply from 10.10.10.10                       Returns local IP.
   ```

   > **✎ Note:**
   >
   > When you ping a computer from itself, the `ping` command must return the local IP address (the IP address of the loopback adapter).

   If the `ping` command fails, contact your network administrator.

If you connect the computer to a network after installation, the Oracle Database instance on your computer can work with other instances on the network. Remember that you must have installed a loopback adapter on your computer. Your computer can use a static IP or DHCP, depending on the network to which you are connected.

Installing a Loopback Adapter

A loopback adapter is required if you are installing on a non-networked computer to connect the computer to a network after the installation.

When you install a loopback adapter, the loopback adapter assigns a local IP address for your computer. After the loopback adapter is installed, there are at least two network adapters on your computer: your own network adapter and the loopback adapter. To run Oracle Database on Windows, set the loopback adapter as the primary adapter.

You can change the bind order for the adapters without reinstalling the loopback adapter. The bind order of the adapters to the protocol indicates the order in which the adapters are used. When the loopback adapter is used first for the TCP/IP protocol, all programs that access TCP/IP first probe the loopback adapter. The local address is used for tools, such as Oracle Enterprise Manager. Applications that use a different Ethernet segment are routed to the network card.

- Checking if a Loopback Adapter is Installed on Your Computer
  Review this section to verify if a loopback adapter is installed on your computer by running the `ipconfig /all` command.

- Installing a Loopback Adapter
  Use this procedure to install a Loopback Adapter or a Microsoft KM-TEST Loopback Adapter on different Windows versions.

- Removing a Loopback Adapter
  Use this procedure to remove a Loopback Adapter or a Microsoft KM-TEST Loopback Adapter on different Windows versions.

Related Topics

- Installing Oracle Database on Nonnetworked Computers

Checking if a Loopback Adapter is Installed on Your Computer

Review this section to verify if a loopback adapter is installed on your computer by running the `ipconfig /all` command.

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

```
DRIVE_LETTER:\>ipconfig /all
```

> ✎ **Note:**
>
> Loopback Adapter installed on the computer must be the Primary Network Adapter.

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

```
Ethernet adapter Local Area Connection 2:
Connection-specific DNS Suffix  . :
Description . . . . . . . . . . . : Microsoft Loopback Adapter
```

```
Physical Address. . . . . . . . . : 02-00-4C-4F-4F-50
DHCP Enabled. . . . . . . . . . . : No
IP Address. . . . . . . . . . . . : 10.10.10.10
Subnet Mask . . . . . . . . . . . : 255.255.0.0
```

Installing a Loopback Adapter

Use this procedure to install a Loopback Adapter or a Microsoft KM-TEST Loopback Adapter on different Windows versions.

The Microsoft Loopback Adapter in Microsoft Windows 7 is renamed to Microsoft KM-TEST Loopback Adapter in Microsoft Windows 8.1 and later releases.

To install a Loopback Adapter on Microsoft Windows 7 or to install Microsoft KM-Test Loopback Adapter on Microsoft Windows 8.1, Microsoft Windows Server 2012, Microsoft Windows Server 2012 R2, and Microsoft Windows Server 2016 perform the following steps:

1. Click **Start** and enter `hdwwiz` in the Search box. Click **hdwwiz** to start the Add Hardware wizard.

    For Microsoft Windows 8.1 and later releases, open the Windows Control Panel and double-click **Add Hardware** to start the Add Hardware wizard.

2. In the Welcome window, click **Next**.

3. In the The wizard can help you install other hardware window, select **Install the hardware that I manually select from a list**, and click **Next**.

4. From the list of hardware types, select the type of hardware you are installing, select **Network adapters**, and click **Next**.

5. In the Select Network Adapter window, make the following selections:

    •   **Manufacturer**: Select **Microsoft**.

    •   **Network Adapter**: Select **Microsoft Loopback Adapter** for Microsoft Windows 7 and **Microsoft KM-TEST Loopback Adapter** for Microsoft Windows Server 8.1 and later releases.

6. Click **Next**.

7. In the The wizard is ready to install your hardware window, click **Next**.

8. In the Completing the Add Hardware Wizard window, click **Finish**.

9. Click **Manage Network Connections**. This displays the Network Connections Control Panel item.

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

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

12. In the Properties dialog box, click **Use the following IP address** and do the following:

    a. **IP Address**: Enter a non-routable IP for the loopback adapter. Oracle recommends the following non-routable addresses:

        •   `192.168.`x`.`x (x is any value between 0 and 255)

        •   `10.10.10.10`

    b. **Subnet mask**: Enter `255.255.255.0`.

    c. Record the values you entered, which you need later in this procedure.

    d. Leave all other fields empty.

    e. Click **OK**.

13. Click **Close**.

14. Close **Network Connections**.

15. Restart the computer.

16. Add a line to the `DRIVE_LETTER: \WINDOWS\system32\drivers\etc\hosts` file with the following format, after the `localhost` line:

```
IP_address    hostname.domainname    hostname
```

where:

- `IP_address` is the non-routable IP address.

- `hostname` is the name of the computer.

- `domainname` is the name of the domain.

For example:

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

17. Check the network configuration:

    a. Open **System** in the Control Panel, and verify that **Full computer name** displays the host name and the domain name, for example, `sales.us.example.com`.

    b. Click **Change**. In **Computer name**, you must see the host name, and in **Full computer name**, you must see the host name and domain name. Using the previous example, the host name must be `sales` and the domain must be `us.example.com`.

    c. Click **More**. In **Primary DNS suffix of this computer**, you must see the domain name, for example, `us.example.com`.

Removing a Loopback Adapter

Use this procedure to remove a Loopback Adapter or a Microsoft KM-TEST Loopback Adapter on different Windows versions.

To remove a Loopback Adapter on Microsoft Windows 7 or to remove Microsoft KM-Test Loopback Adapter on Microsoft Windows 8.1, Microsoft Windows Server 2012, Microsoft Windows Server 2012 R2, and Microsoft Windows Server 2016, perform the following steps:

1. Display **System** in the Windows Control Panel.

2. In the Hardware tab, click **Device Manager**.

3. For Microsoft Windows 7, in the Device Manager window, expand **Network adapters**. You must see **Microsoft Loopback Adapter**. For Microsoft Windows 8.1 and later releases, you must see **Microsoft KM-TEST Loopback Adapter**.

4. For Microsoft Windows 7, right-click **Microsoft Loopback Adapter** and select **Uninstall**. For Microsoft Windows 8.1 and later releases, right-click **Microsoft KM-TEST Loopback Adapter** and select **Uninstall**.

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5. Click **OK**.

6. Restart the computer.

7. Remove the line from the `DRIVE_LETTER:\WINDOWS\system32\drivers\etc\hosts` file, added after the localhost line while installing the loopback adapter on other Windows operating systems.

D

Configuring Oracle Database Globalization Support

Learn how to configure Oracle Database Globalization Support.

- Installing and Using Oracle Components in Different Languages
  Learn how to install and use Oracle components in other languages.
- Running Oracle Universal Installer in Different Languages
  Learn how to run Oracle Universal Installer in other languages.

Installing and Using Oracle Components in Different Languages

Learn how to install and use Oracle components in other languages.

- Configuring Oracle Components to Run in Different Languages
  You can specify the language and the territory, or locale, in which you want to use Oracle components.
- Installing Translation Resources
  Learn how to install the appropriate language translation resources.

Configuring Oracle Components to Run in Different Languages

You can specify the language and the territory, or locale, in which you want to use Oracle components.

The locale setting of a component determines the language of the user interface of the component and the globalization behavior, such as date and number formatting. Depending on the Oracle component, the locale of the component is either inherited from the operating system session that started the component, or is defined by the `NLS_LANG` environment variable.

The operating system locale usually influences Oracle components that are based on Java technology. The `NLS_LANG` environment variable usually influences Oracle components that use Oracle Client libraries such as OCI.

> ✏️ **Note:**
>
> The user interface of an Oracle component is displayed in a selected language only if the appropriate translation is available and has been installed. Otherwise, the user interface is displayed in English.

- Determining the Operating System Locale
  The locale setting of your operating system session determines the language of
  the user interface and the globalization behavior for components such as Oracle
  Universal Installer, Oracle Net Configuration Assistant, and Oracle Database
  Configuration Assistant.

- Configuring Locale and Character Sets Using the NLS_LANG Environment
  Variable
  The `NLS_LANG` environment variable determines the language of the user interface
  and the globalization behavior for components such as SQL*Plus, exp, and imp.

- NLS_LANG Settings in Console Mode and Batch Mode
  Before you can use Oracle utilities such as SQL*Plus, SQL Loader, Import, and
  Export from the Command Prompt window, set the character set field of the
  `NLS_LANG` parameter to a value different than the one set in Registry.

Determining the Operating System Locale

The locale setting of your operating system session determines the language of the
user interface and the globalization behavior for components such as Oracle Universal
Installer, Oracle Net Configuration Assistant, and Oracle Database Configuration
Assistant.

It also determines the globalization behavior of Oracle Database sessions created by a
user application through Oracle JDBC driver, unless overridden by the application.

Open the Control Panel from the Start menu to modify the operating system locale
settings. In the classic view of the Control Panel on Windows, click **Regional and
Language Options**. In the default view of the Control Panel on Windows, click
Change keyboards or other input methods.

To set locale for the current operating system user on Windows, select the desired
locale from the Current format pop-up list on the Formats tab.

Some of the locales are unavailable until you install the required operating system
support files.

Some Oracle components, such as SQL*Plus, require that the Windows System
Locale is also set to the language in which the components are to be run. System
Locale is called Language for non-Unicode programs on Windows. On Windows, click
the **Change system locale...** button on the Administrative tab, accept the use of
administrative privileges, if User Account Control is active, and select the locale from
the pop-up list in the opened dialog box.

> **Note:**
>
> The operating system must be restarted after the System Locale is changed.
> See the operating system documentation for further information about
> Windows locale settings.

Configuring Locale and Character Sets Using the NLS_LANG Environment Variable

The `NLS_LANG` environment variable determines the language of the user interface and the globalization behavior for components such as SQL*Plus, exp, and imp.

It sets the language and territory used by the client application and the database user session. It also declares the character set for entering and displaying data by the client application.

The `NLS_LANG` environment variable uses the following format:

`NLS_LANG=`*`language_territory.characterset`*

In this format:

- *`language`* specifies the language used for displaying Oracle messages, sorting, day names, and month names
- *`territory`* specifies the conventions for default date, monetary and numeric formats
- *`characterset`* specifies the encoding used by the client application

    In most cases, this is the Oracle character set that corresponds to the Windows ANSI Code Page as determined by the System Locale.

The *`NLS_LANG`* parameter on Windows can be set

- in Registry under the subkey corresponding to a given Oracle home,
- as an environment variable.

When you install Oracle Database components and the *`NLS_LANG`* parameter is not yet set in the Registry subkey of the target Oracle home, Oracle Universal Installer sets the *`NLS_LANG`* parameter to a default value derived from the operating system locale for the current user. See the following table.

For example:

- Arabic (U.A.E.) - `ARABIC_UNITED ARAB EMIRATES.AR8MSWIN1256`
- Chinese (PRC) - `SIMPLIFIED CHINESE_CHINA.ZHS16GBK`
- Chinese (Taiwan) - `TRADITIONAL CHINESE_TAIWAN.ZHT16MSWIN950`
- English (United Kingdom) - `ENGLISH_UNITED KINGDOM.WE8MSWIN1252`
- English (United States) - `AMERICAN_AMERICA.WE8MSWIN1252`
- French (Canada) - `CANADIAN FRENCH_CANADA.WE8MSWIN1252`
- French (France) - `FRENCH_FRANCE.WE8MSWIN1252`
- German (Germany) - `GERMAN_GERMANY.WE8MSWIN1252`
- Hebrew - `HEBREW_ISRAEL.IW8MSWIN1255`
- Japanese - `JAPANESE_JAPAN.JA16SJISTILDE`
- Russian - `RUSSIAN_RUSSIA.CL8MSWIN1251`
- Spanish (Spain) - `SPANISH_SPAIN.WE8MSWIN1252`

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- Spanish (Mexico) - `MEXICAN SPANISH_MEXICO.WE8MSWIN1252`

- Spanish (Venezuela) - `LATIN AMERICAN SPANISH_VENEZUELA.WE8MSWIN1252`

> **Note:**
>
> *Oracle Database Globalization Support Guide* for information about the `NLS_LANG` parameter and Globalization Support initialization parameters

NLS_LANG Settings in Console Mode and Batch Mode

Before you can use Oracle utilities such as SQL*Plus, SQL Loader, Import, and Export from the Command Prompt window, set the character set field of the `NLS_LANG` parameter to a value different than the one set in Registry.

This is required because programs running in console mode use, with a few exceptions, a different code page (character set) from programs running in GUI mode. The default Oracle home `NLS_LANG` parameter in the Registry is always set to the appropriate GUI code page. If you do not set the `NLS_LANG` parameter for the console mode session correctly, incorrect character conversion can corrupt error messages and data.

For Japanese, Korean, Simplified Chinese, Traditional Chinese, Thai, and Vietnamese, the console (OEM) code page is identical to the GUI (ANSI) code page. In this case, you are not required to set the `NLS_LANG` parameter. For other languages, set the correct character set value of `NLS_LANG` by issuing a `SET NLS_LANG` command in the same Command Prompt window in which you want to start the affected utility.

Similarly, in batch mode, set the correct character set value of `NLS_LANG` by inserting a `SET NLS_LANG` command at the start of the batch procedure, according to the character set of the files to be processed in the procedure.

To find the current console code page, issue the `CHCP` command in the Command Prompt window. Use the reported code page number to look up the corresponding Oracle character set name in the following table.

The following table lists the Oracle character sets that correspond to the console mode code pages.

Table D-1   Oracle Character Sets for Console Mode (OEM) Code Pages

OEM Code Page	Oracle Character Set for Console Mode
437 (US)	US8PC437
737 (Greek)	EL8PC737
775 (Baltic)	BLT8PC775
850 (Multilingual Latin I)	WE8PC850
852 (Latin II)	EE8PC852
855 (Cyrillic)	RU8PC855
857 (Turkish)	TR8PC857
858 (Multilingual Latin I + Euro)	WE8PC858

Table D-1   (Cont.) Oracle Character Sets for Console Mode (OEM) Code Pages

OEM Code Page	Oracle Character Set for Console Mode
866 (Russian)	RU8PC866
874 (Thai)	TH8TISASCII
932 (Japanese Shift-JIS)	JA16SJISTILDE
936 (Simplified Chinese GBK)	ZHS16GBK
949 (Korean)	KO16MSWIN949
950 (Traditional Chinese Big5)	ZHT16MSWIN950
1258 (Vietnam)	VN8MSWIN1258

Installing Translation Resources

Learn how to install the appropriate language translation resources.

To view the user interface of Oracle components in different languages, you must install the appropriate language translations along with the component.

> **Note:**
>
> Part of Oracle Database Vault user interface text is stored in database tables in the DVSYS schema. By default, only the English language is loaded into these tables. You can use Oracle Database Vault Configuration Assistant to add more languages to Oracle Database Vault.

To install translation resources:

1. Start Oracle Universal Installer.

2. In the Configure Security Updates screen enter the relevant information and click **Next**.

3. In the Select Installation Option screen, select the installation option and click **Next**.

4. In the System Class screen, select the type of system class for installing the database, and click **Next**.

5. In the Grid Installation Options screen, select the type of database installation you want to perform, and click **Next**.

6. In the Select Product Languages screen, select the language in which you want to run the product from the **Available Languages** field.

> **Note:**
>
> The Available Languages field lists all languages supported by Oracle globalization libraries. The set of languages for which a translation is actually available is usually smaller and depends on a particular component. The scope of translation for a given component may differ between languages. For example, some translations may include all user interface text, while others may include only error messages and no help files.

7. Use the > arrow to move the selected language to the **Selected Languages** field, and then click **Next**.

> **Note:**
>
> Oracle Universal Installer ignores languages in the Selected Languages field for which no translation is available.

Running Oracle Universal Installer in Different Languages

Learn how to run Oracle Universal Installer in other languages.

Your operating system locale determines the language in which Oracle Universal Installer runs. You can run Oracle Universal Installer in one of these languages:

- Brazilian Portuguese (pt_BR)
- French (fr)
- German (de)
- Italian (it)
- Japanese (ja)
- Korean (ko)
- Simplified Chinese (zh_CN)
- Spanish (es)
- Traditional Chinese (zh_TW)

To run Oracle Universal Installer in a supported language, change the locale in which your operating system session is running before you start Oracle Universal Installer. If the selected language is not one of the supported languages, then Oracle Universal Installer runs in English.

1. Change the locale for the operating system user and the System Locale as described in the section "Determining the Operating System Locale"Determining the Operating System Locale"

2. Run Oracle Universal Installer by following the instructions in the section "Installing Oracle Database" in Chapter 6.

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